Dragages -China Harbour-VSL JV

Contract HY/2011/09

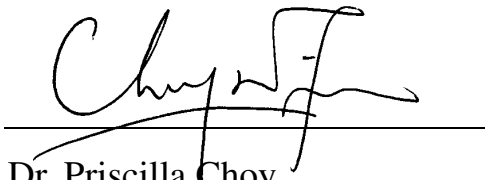
Hong Kong-Zhuhai-Macao Bridge

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

Monthly EM&A Report

March 2015
(Version 2.0)

Certified By



Dr. Priscilla Choy
Environmental Team Leader
(Date: 16 April 2015)

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 26th 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 March 2015.

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	5th, 11th, 17th, 23rd and 27th March 2015
24-hr TSP Monitoring	5th, 11th, 17th, 23rd and 27th March 2015
Noise Monitoring	6th, 12th, 18th and 24th March 2015
Water Quality Monitoring	2nd, 4th, 6th, 9th, 11th, 13th, 17th, 19th, 21st, 23rd, 25th, 27th and 31st March 2015
Dolphin Monitoring (Line-transect Vessel Surveys)	19th and 27th March 2015
Additional Land-based Dolphin Behaviour and Movement Monitoring	9th and 13th March 2015
Environmental Site Inspection	3rd, 10th, 17th, 23rd and 31st March 2015
Archaeological Site Inspection	17th March 2015

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)	6	5	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 six Action Level and five 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, the exceedances are considered not due to the Contract due to the following reasons:

   1) Installation work at Pile Cap was carried at near the monitoring stations in which exceedances were recorded. Water quality impact due to this work is not anticipated;
   2) No pollution discharge was observed from the site;
   3) Sediment plume due to natural fluctuation of shallow water was observed but no vessels were observed near the plumes;
   4) Dispersion of sediment plume to the monitoring stations from the area outside the site boundary (i.e. works area not under and related to HY/2011/09) was observed; and
   5) No site activity was carried at near the monitoring stations in which exceedances were recorded.

Complaint Log

9. No environmental complaints were 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)

Reverse Circulation Drill (RCD) Method:

- Piling works
- Mooring bits and silt curtain installation
- 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:

- Removal of piling platform and temporary pile extraction
- Inter-face tests, full depth coring
- test and sonic test
- Toe grouting works

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:

- Segment Unloading Frame (SUF)
- Winches test
- Assembly and erection of Lifting Frame 2
- Erection of segment on pier

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

- Pile construction
- Pouring of column
- Pre-bored for sheet pile for cofferdam construction
- Seawall block coring and breaking
- Formwork erection
- Blinding concrete for scaffolding works
- Dismantling of steel bracket system
- Erection of steel bracket system cross road steel portal beams erection and corresponding falsework erection
- Steel girders and cross beams erection

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 26th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme in March 2015.

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, EP-352/2009/B, EP-352/2009/C) based on the Application No. VEP-409/2013, VEP-411/2013 and VEP-459/2014 respectively. The environmental Permit (Permit No. EP-352/2009/D) was then issued on 22 December 2014.

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. Priscilla Choy	2151 2089	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) The last pile for land viaduct was concreted in this reporting period.

(b) Total 169 pours for column were completed with 7 pours in this reporting period; 61 columns were completed to top level (30 gridlines - P85 to P114). Land viaduct column completed.

(c) P81R&L excavation works and waling & struts installation work are in progress.

(d) Sewage diversion at P82 is in progress.

(e) P82R pre-bored sheet pile were completed, P82L pre-bored sheet pile in progress.

(f) P83R pile cap excavation work and waling & struts installation is in progress.

(g) Portal Works:

Pier Location	Progress
P84	Formation work is in progress, steel bracket system to be erected;
P87	Erection of steel girders and cross beams is in progress;
P88	Erection of vertical formwork and kickers is in progress;
P93	Steel fixing for portal is in progress;
P94	Portal was concreted on 24 March 2015;
P95	Portal was concreted on 13 March 2015, removal of vertical formwork is in progress;
P96	Removal of falsework is in progress;
P98	Removal of steel bracket system is in progress;
P99	Removal of falsework is in progress;
P100	Removal of falsework was completed;
P101	Removal of falsework was completed;

(h) Construction of drainage work near P115 Abutment was completed, adjusting manhole covers is in progress.

(i) Construction of temporary foundations for P114 segment temporary supports at R & C Lines were completed, pile caps construction at L-Line is in progress.

Marine Viaduct (P0 to P80)

RCD Method (except P68):

(a) Piling jackets were dismantled at D18 and P26.

(b) Pile excavations and casing installation are in progress at P69. 4 marine piles using RCD method were concreted in the reporting period.

(c) Inter-face coring tests were carried out at P5, P6, P10, P11 & P26.

(d) No Full depth coring test was carried.

(e) Sonic tests were carried out at P5, P6, P10, P11 & P69.

(f) Grouting works were carried out at P26.

Progress at P68

(a) Temporary platform formation is on-going (about 16,000T of grade 150 fill placed and 2,000T of rock armour).

(b) Jacket was installed on RHS and casing driven.

(c) Logistic platform was completed.

Disposal from Marine Works

(a) The disposals in this reporting period are shown in below table.

Disposal Location	No of Trip	Type of Materials
TM38	0	Inert Materials
TMCLK	0	Inert Materials
HK Open Sea Mud Pits	1	Types II Marine Mud
Cross Boundary Disposal	5	Type I Marine Mud

Pilecap Construction:

(a) 8 precast cap shells were installed P1, P12, P54 & P58.

(b) Stage 1 concreting was completed at P12, P17, P22 & P23.

(c) Stage 1 works is in progress at P1, P12, P17, P22 & P23.

(d) Stage 2 concreting was completed at P3, P4, P17R, P22 & P25.

(e) Stage 2 works is in progress at P3, P4, P17, P22, P23 & P25.

(f) Kingpost installation and associated steel welding works for precast shell installation are in progress at P7, P12, P13, P15 & P54.

(g) Concrete trimming and advanced trimming (inside casing) works were carried out at P2, P7, P15, P19-F1 &F2, P22, P55, P79 & P80.

(h) Submerged pilecap works with cofferdam:

Pier Location	Side	Progress
P70	L	Concreting works of pile cap completed on 13-Jan-15
	R	Concreting works of pile cap completed on 5-Jan-15
P71	L	Concreting works of pile cap completed on 6-Oct-14
	R	Concreting works of pile cap completed on 18-Dec-14
P72	L	Concreting works of pile cap completed on 10-Mar-15
	R	Concreting works of pile cap completed on 31-Jan-15
P73	L	Concreting works of pile cap completed on 4-Dec-14
	R	Concreting works of pile cap completed on 3-Jan-15
P74	L	Concreting works of plug completed on 2-Mar-15; Trimming of pile head concrete is in progress
	R	Excavation works is in progress
P75	L	Rock excavation is in progress
	R	Rock excavation is in progress
P76	L	Trimming of pile head concrete is in progress
	R	Concreting works of plug completed on 16-Mar-15; Cleaning works before blinding layer is in progress.
P77	L	Concreting works of pile cap completed on 24-Mar-15
	R	Steel Fixing works of pile cap is in progress
P78	L	Concreting works of pile cap completed on 24-Jan-15
	R	Concreting works of pile cap completed on 30-Jan-15

In-situ Column Construction

(a) 1st lift works is in progress at P16, P21, P27, P28, P29, P30, P31, P53, P59 & P70.
(b) 1st lift concrete was poured at P27, P28, P29, P30, P31, P53, P59 and P70.
(c) 2nd lift works and poured at P53.
(d) Pier head works is in progress at P50, P61 & P62.
(e) Pier head concreting was poured at P50, P61 & P62

Precast Column Erection

(f) P29, P30 & P32 - Base units installed.
(g) P32 - P44 All precast units now installed.
(h) P43 - Vertical nailing tendons stressed.

In-situ Double Blade Column Construction

Pier Location	Side	Progress
P18	L	To be started in April 2015
	R	To be started in April 2015
P19	L	Completed 4th and 5th lift in progress
	R	Completed 3rd & 4th lift and started for 5th lift
P20	L	All cast in March 2015, total 7th lift
	R	All cast in March 2015, total 7th lift

Pier Location	Side	Progress
P71	L	All cast in February 2015, total 3 lifts (including pier head)
	R	All cast in March 2015, total 3 lifts (including pier head)
P72	L	To be started in April 2015
	R	To be started in April 2015
P73	L	Completed 1st lift and 2nd lift in progress
	R	Completed 1st lift and 2nd lift in progress

Marine Portal

(a) Steel fixing of portal at P52 is in progress. Bearing installation and faleswork of portal at P60 were completed and soffit formwork is in progress.

Deck Erection

(a) Setting up of Equipment:

Type of Equipment	Status
Lifting Frames 1 (LF1)	Assembly of the first set of LF1 is on-going at WA4; Steelwork for the 2nd set of Lifting Frames is under fabrication with some deliveries commenced.
Lifting Frames 3 (LF3)	Fabrication of LF3 in China has commenced. Some major components have been completed, and some deliveries have been commenced. Assembly of the first 4 sets of LF3 is targeted to be commenced by mid-April at WA4.
Launching Gantry 1 (LG1)	Segment erection at P110, P111 & P112R&C completed. Gantry has been commissioned for launching and launched to P113 & P114 is completed
Launching Gantry 2 (LG2)	Load test and commissioning of the first part have been completed.

(b) Segment erection:

- A cumulative total of 140 segments have been erected

Type	Location of Segments erected in this reporting period	Number of Segments erected in this reporting period	Cumulative No. of Segments erected (up to 28th of each month)
LG1*	P110 & P111	16	112
LG2	P47	4	4
SOP	P65	4	24

Precast Segment

(a) Segment Casting:

Item	Number in this reporting period	Cumulative No. of Precast Segment Completed (up to 28th of each month)
Segment Cast	41	1850

(b) Off-site Storage:

Area	No. in Off-site Storage
A1	134
A2	228

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	6	80
CP2	Completed	12
CP3	1	8
CP4	Completed	8
CP5	Completed	6
CP6	1	4

Precast Column & Precast Pier Head Casting

(a) Progress of the precast column & precast pier head casting:

- All the 5 moulds are in service for precast production.
- Totally 25 precast elements (6 piers with 3m high, 12 piers with 6m high, 4 monolithic pier heads and 3 pier heads with bearing support) were cast in this reporting period.
- Cumulatively 162 precast elements have been produced.

Delivery for Precast Concrete Elements (by barge)

(a) Precast Deck Segments:

- Number of additional barges engaged in this period: 6
- Cumulative number of barges: 11 (2 barges allocated for long span storage)
- Number of Deck Segment deliveries in this period: 7 trips
- Cumulative number of Deck Segment deliveries: 43 trips

Segment Types	Segment Delivered in this reporting period	Cumulative No. of Precast Segment Delivered (up to 28th of each month)
A	12	40
B	0	0
C	0	0
D	0	0

Segment Types	Segment Delivered in this reporting period	Cumulative No. of Precast Segment Delivered (up to 28th of each month)
E	22	164

(b) Precast column units:

- Number of additional barges engaged in this period: 0
- Cumulative number of barges: 1
- Number of column unit deliveries in this period: 5 trips
- Cumulative number of column unit deliveries: 19 trips

Unit Types	Number of units delivered in this reporting period	Cumulative No. of Precast Column Delivered (up to 28th of month)
3m	4	16
6m	8	34
PH1	8	18
PH2	0	8

(c) Temporary storage of long span segments:

- First barge loaded with four long span segments on 26 March 15.
- Preparation of 2nd Long-Span storage barge on going.

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/D	22/12/2014	N/A	Valid
Consruction Noise Permit (CNP)			
P81 – P82: GW-RS1064-14	11/10/2014 (00:00)	10/04/2015 (24:00)	Valid
P101 – P113: GW-RS1297-14	21/11/2014(19:00)	31/03/2015 (06:30)	Valid
P69 – P74: GW-RS1340-14	30/11/2014 (00:00)	31/03/2015(24:00)	Cancelled on 31 March 2015
WA4: GW-RW0984-14	15/12/2014(19:00)	14/06/2015(23:00)	Valid
P75 – P80 :GW-RS1421-14	22/12/2014(19:00)	31/03/2015(24:00)	Cancelled on 5 March 2015
WA7: GW-RW1024-14	13/01/2015(19:00)	12/07/2015(07:00)	Valid
P101 – P113 & Southeast Quay: GW-RS0111-15	02/02/2015(19:00)	30/06/2015(05:30)	Cancelled on 23 March 2015
P76 – P80: GW-RS0094-15	03/02/2015(01:30)	02/08/2015(08:00)	Valid
P81 – P114: GW-RS0122-15	06/02/2015(19:00)	05/08/2015(23:00)	Valid
P0 – P68: GW-RS0130-15	10/02/2015(19:00)	08/08/2015(24:00)	Valid
Waters next to Southeast Quay: GW-RS0181-15	23/02/2015(19:00)	22/08/2015(23:00)	Valid
P75 – P80: GW-RS0226-15	05/03/2015(19:00)	04/09/2015(24:00)	Valid
P101 – P114: GW-RS0272-15	23/03/2015(19:00)	22/06/2015(24:00)	Valid
P53 – P59: GW-RS0314-15	31/03/2015(00:00)	30/09/2015(07:00)	Valid
P69 – P74: GW-RS0333-15	31/03/2015(00:00)	30/09/2015(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# 7016948 (Vessel Disposal)	18/11/2014	31/05/2015	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

Permit / License No.	Valid Period		Status
	From	To	
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			
Dumping of Phase 1, 2a, 2b, 2c and 2d (Type 1 – Open Sea Disposal) marine sediment EP/MD/15-226	11/02/2015	09/08/2015	Valid
Dumping of Phase 1, 2a, 2b, 2c and 2d (Type 1D and Type 2) marine sediment EP/MD/15-235	06/03/2015	05/04/2015	Valid
Cross-border dumping of dredged sediment of Category L and Category Mp at Erzhou Island in China EP/MD/15-216	03/03/2015	02/04/2015	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 m^3/min. and 1.4 m^3/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 (µg/m3)		Action Level, µg/m³	Limit Level, µg/m³
	Average	Range		
AMS1	112	43 – 179	381	500
AMS4	114	42 – 270	352	

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

Monitoring Station	Concentration (µg/m3)		Action Level, µg/m³	Limit Level, µg/m³
	Average	Range		
AMS1	53	28 – 100	170	260
AMS4	64	35 – 105	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-hr 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 The wind data for the reporting month is summarized in **Appendix J**.

Event and Action Plan

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

4 NOISE MONITORING

Monitoring Requirements

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

Monitoring Location

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

Table 4.1 Location for Noise Monitoring Stations

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 min.) dB(A) (as six consecutive $L_{eq, 5min}$ readings) during non-restricted hours (i.e. 0700-1900 hrs on normal weekdays)

- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after 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	68	65 - 72	75 dB(A)
NMS4	61	53 – 66	

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 and YSI 6920-M	2
Water Sampler	Kahlsico Water-Bottle Model 135DW 150	2

Monitoring Parameters, Frequency

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

Table 5.3 Water Quality Monitoring Parameters and Frequency

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

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

Monitoring Methodology

Instrumentation

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

Operating/Analytical Procedures

5.26 The monitoring stations were accessed by the guide of a hand-held Differential Global Positioning System (DGPS) during water quality monitoring in accordance with the EM&A Manual. The depth of the monitoring location was measured using depth meter

in order to determine the sampling depths. Afterwards, the probes of the in-situ measurement equipment were lowered to the predetermined depths (1 m below water surface, mid-depth and 1 m above seabed) and the measurements were carried out accordingly.

5.27 At each measurement, two consecutive measurements of DO concentration, DO saturation, salinity, turbidity, pH and temperature were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.

5.28 Water sampler was lowered into the water to the required depths of sampling. Upon reaching the pre-determined depth, a messenger to activate the sampler was then released to travel down the wire. The water sample was sealed within the sampler before retrieving. At each station, water samples at three depths (1 m below water surface, 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								23/03/2015	0	1
	Limit Level									0	0
IS2	Action Level									0	0
	Limit Level								19/03/2015 23/03/2015	0	2
IS3	Action Level									0	0
	Limit Level									0	0
IS4	Action Level								21/03/2015 23/03/2015	0	2
	Limit Level								19/03/2015	0	1
SR1	Action Level									0	0
	Limit Level									0	0
SR2	Action Level								21/03/2015	0	1
	Limit Level									0	0
SR3	Action Level									0	0
	Limit Level								21/03/2015	0	1
SR6	Action Level								21/03/2015	0	1
	Limit Level									0	0
ST1	Action Level									0	0
	Limit Level									0	0
ST2	Action Level									0	0
	Limit Level								21/03/2015	0	1
ST3	Action Level									0	0
	Limit Level									0	0
SRA	Action Level								21/03/2015	0	1
	Limit Level									0	0
Total	Action Level	0	0	0	0	0	0	0	6		
	Limit Level	0	0	0	0	0	0	0	5		

5.38 All water quality monitoring was conducted as scheduled in the reporting month. There are six Action Level and five 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, the exceedances are considered not due to the Contract due to the following reasons:

1) Installation work at Pile Cap was carried at near the monitoring stations in which exceedances were recorded. Water quality impact due to this work is not anticipated;
2) No pollution discharge was observed from the site;
3) Sediment plume due to natural fluctuation of shallow water was observed but no vessels were observed near the plumes;
4) Dispersion of sediment plume to the monitoring stations from the area outside the site boundary (i.e. works area not under and related to HY/2011/09) was observed; and
5) No site activity was carried at near the monitoring stations in which exceedances were recorded.

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 19th and 27th March 2015. The dolphin monitoring schedule for the reporting period is shown in **Appendix D**.

Monitoring Results

6.8 From these surveys, a total of 64.91 km of survey effort was collected, with 100% 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 64.91 km of survey effort, the total survey effort conducted on primary lines (the horizontal lines perpendicular to the coastlines) was 42.07 km.

6.9 6 groups of 34 Chinese White Dolphins were sighted from primary lines. Distribution of the 7 dolphin sightings made during March's surveys is shown in **Figure 4 of Appendix I**. These sightings were mainly concentrated in the central portion of West Lantau survey area (i.e. near Kai Kung Shan and Peaked Hill, especially in the offshore waters **Figure 4 of Appendix I**). Notably, none of the dolphin groups were located far away from 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 March'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: March 19th	9.7	106.4
	Set 2: March 27th	18.7	56.1

6.11 The average group size of Chinese White Dolphins was 5.29 individuals per group during the March's surveys, which was much higher than the ones in previous months of monitoring surveys. This was mainly due to the one very large group of 20 dolphins sighted on March 19th, but the rest were mostly composed of 1-3 animals per group

during this month of monitoring surveys.

6.12 During this month of dolphin monitoring, marine construction activities have continued under this contract. However, no adverse impact on Chinese white dolphins was noticeable from general observations.

6.13 Evaluation of impacts on dolphins due to construction work will be conducted in the quarterly EM&A report.

6.14 Detailed monitoring methodology and results can be found in **Appendix I**.

Additional Land-based Dolphin Behaviour and Movement Monitoring

6.15 Additional land-based dolphin behavior and movement monitoring was conducted on 9th and 13th March 2015 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 March 2015

Date	Time	Weather		Number of Staff	Number of Dolphin Sighting
		Beaufort	Visibility		
09/03/2015	09:16 - 14:42	1	3.5-4	3	1
13/03/2015	09:04 - 14:35	2	1.5-2	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 3rd, 10th, 17th, 23rd and 31st March 2015 by ET after the commencement of construction works for the Contract. A joint site audit with the representative with IEC, SOR, the Contractor and the ET was carried out on 23rd March 2015. 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 9th inspection to the Sha Lo Wan (West) Archaeological Site was conducted on 17th March 2015 and next inspection will be conducted in June 2015.

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 EP Condition 3.7 and EM&A Manual, Section 10.2.18.

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
Water Quality	10/03/2015	The silt curtain at P98 and P95 should be used to surround the works area to avoid the gap.	Rectification/improvement was observed during the follow-up audit session on 17 March 2015.
	10/03/2015	Regular check and provide well maintenance for the silt curtain at P68 to ensure it can function properly.	Rectification/improvement was not observed during the follow-up audit session on 17 March 2015. Further follow-up on this item is required.
	17/03/2015	To seal the hole at the bunded area at barge (B22595Y) near P29.	Rectification/improvement was observed during the follow-up audit session on 23 March 2015.
	17/03/2015	Properly deploy the silt curtain at P72, P99, P86 and P68.	Rectification/improvement was not observed during the follow-up audit session on 23 March 2015. Further follow-up on this item is required.
	23/03/2015	The silt curtain at P71 and P70 should be used to surround the works area to avoid the gap.	Rectification/improvement was observed during the follow-up audit session on 31 March 2015.
	31/03/2015	Properly deploy the silt curtain at P68, P72, P86, P99 and P103.	Rectification/improvement was not observed during the follow-up audit session on 9 April 2015. Further follow-up on this item is required.
	31/03/2015	Clear the waste materials at near the rockfill platform at P68.	Rectification/improvement was observed during the follow-up audit session on 9 April 2015.
	31/03/2015	Clear the sedimentation tank to ensure it can function properly at Portion C.	Rectification/improvement was not observed during the follow-up audit session on 9 April 2015. Further follow-up on this item is required.
Ecology	03/03/2015	Storage of construction materials at near the trees should be avoid (P100).	Rectification/improvement was observed during the follow-up audit session on 10 March 2015.
	10/03/2015	Clear the construction wastes / materials at near the trees at P99 – P102.	Rectification/improvement was not observed during the follow-up audit session on 17 March 2015. Further follow-up on this item is required.
	17/03/2015	Clear the construction materials at near the trees at P113, P102 and P100.	Rectification/improvement was not observed during the follow-up audit session on 23 March 2015. Further follow-up on this item is required.
	31/03/2015	Clear the construction wastes / materials at near the trees at P87, between P88 & P89, between P94 & P95, P102 and	Rectification/improvement was not observed during the follow-up audit session on 9

Parameters	Date	Observations and Recommendations	Follow-up
		P113.	April 2015. Further follow-up on this item is required.
Air Quality	10/03/2015	The unpaved area at near P113 should be watered regularly to avoid dust generation.	Rectification/improvement was observed during the follow-up audit session on 17 March 2015.
	23/03/2015	The unpaved site area at near P113 should be watered regularly to avoid dust generation.	Rectification/improvement was observed during the follow-up audit session on 31 March 2015.
Noise	23/03/2015	To repair the noise enclosure at P70.	Rectification/improvement was not observed during the follow-up audit session on 31 March 2015. Further follow-up on this item is required.
	31/03/2015	To repair the noise enclosure at P70.	Rectification/improvement was not observed during the follow-up audit session on 9 April 2015. Further follow-up on this item is required.
Waste / Chemical Management	03/03/2015	Clear the accumulated construction wastes at near P107.	Rectification/improvement was observed during the follow-up audit session on 10 March 2015.
	03/03/2015	Clear the mixture of water and oil at the drip tray at P87.	Rectification/improvement was observed during the follow-up audit session on 17 March 2015.
	17/03/2015	Clear the construction wastes at the side of pile cap of P27.	Rectification/improvement was observed during the follow-up audit session on 23 March 2015.
	23/03/2015	Clear the concrete debris and used cement bags at P50.	Rectification/improvement was observed during the follow-up audit session on 31 March 2015.
	31/03/2015	Clear the accumulated general refuse at platform at P70.	Rectification/improvement was observed during the follow-up audit session on 9 April 2015.
	31/03/2015	To clear the oil spillage at near P109.	Rectification/improvement was not observed during the follow-up audit session on 9 April 2015. Further follow-up on this item is required.
Landscape & Visual Impact	N/A(1)	N/A(1)	N/A(1)
Permits/Licences	N/A(1)	N/A(1)	N/A(1)
Other	N/A(1)	N/A(1)	N/A(1)
Cultural Heritage (Sha Lo Wan (West) Archaeological Site)	17/03/2015	N/A(1)	N/A(1)

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

Advice on the Solid and Liquid Waste Management Status

7.10 According to the Contractor, 681m^3 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 six Action Level and five 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, the exceedances are considered not due to the Contract due to the following reasons:

1) Installation work at Pile Cap was carried at near the monitoring stations in which exceedances were recorded. Water quality impact due to this work is not anticipated;
2) No pollution discharge was observed from the site;
3) Sediment plume due to natural fluctuation of shallow water was observed but no vessels were observed near the plumes;
4) Dispersion of sediment plume to the monitoring stations from the area outside the site boundary (i.e. works area not under and related to HY/2011/09) was observed; and
5) No site activity was carried at near the monitoring stations in which exceedances were recorded.

Summary of Environmental Complaint

8.5 No environmental related complaints were 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 one prosecution or notification of summons received since the Contract commencement. Summary of successful prosecution as attached in **Appendix Q**.

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)

Reverse Circulation Drill (RCD) Method:

- Piling works
- Mooring bits and silt curtain installation
- 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:

- Removal of piling platform and temporary pile extraction
- Inter-face tests, full depth coring
- test and sonic test
- Toe grouting works

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:

- Segment Unloading Frame (SUF)
- Winches test
- Assembly and erection of Lifting Frame 2
- Erection of segment on pier

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

- Pile construction
- Pouring of column
- Pre-bored for sheet pile for cofferdam construction
- Seawall block coring and breaking
- Formwork erection
- Blinding concrete for scaffolding works
- Dismantling of steel bracket system
- Erection of steel bracket system cross road steel portal beams erection and corresponding falsework erection
- Steel girders and cross beams erection

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 March 2015 in accordance with EM&A Manual.

10.2 No Action/Limit Level exceedance was recorded for air quality and construction noise.

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

10.4 According to the investigation, the exceedances are considered not due to the Contract due to the following reasons:

1) Installation work at Pile Cap was carried at near the monitoring stations in which exceedances were recorded. Water quality impact due to this work is not anticipated.
2) No pollution discharge was observed from the site;
3) Sediment plume due to natural fluctuation of shallow water was observed but no vessels were observed near the plumes;
4) Dispersion of sediment plume to the monitoring stations from the area outside the site boundary (i.e. works area not under and related to HY/2011/09) was observed; and
5) No site activity was carried at near the monitoring stations in which exceedances were recorded.

10.5 Dolphin transect survey was carried out on 19th and 27th March 2015. 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 9th and 13th March 2015.

10.7 Environmental site inspection was conducted on 3rd, 10th, 17th, 23rd and 31st March 2015 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 The inspection to the Sha Lo Wan (West) Archaeological Site was conducted on 17th March 2015. No access to Sha Lo Wan (West) Archaeological site for works areas and storage of construction equipment was observed.

10.9 There were no environmental complaints, no notification of summons and successful prosecution received in the reporting month.

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

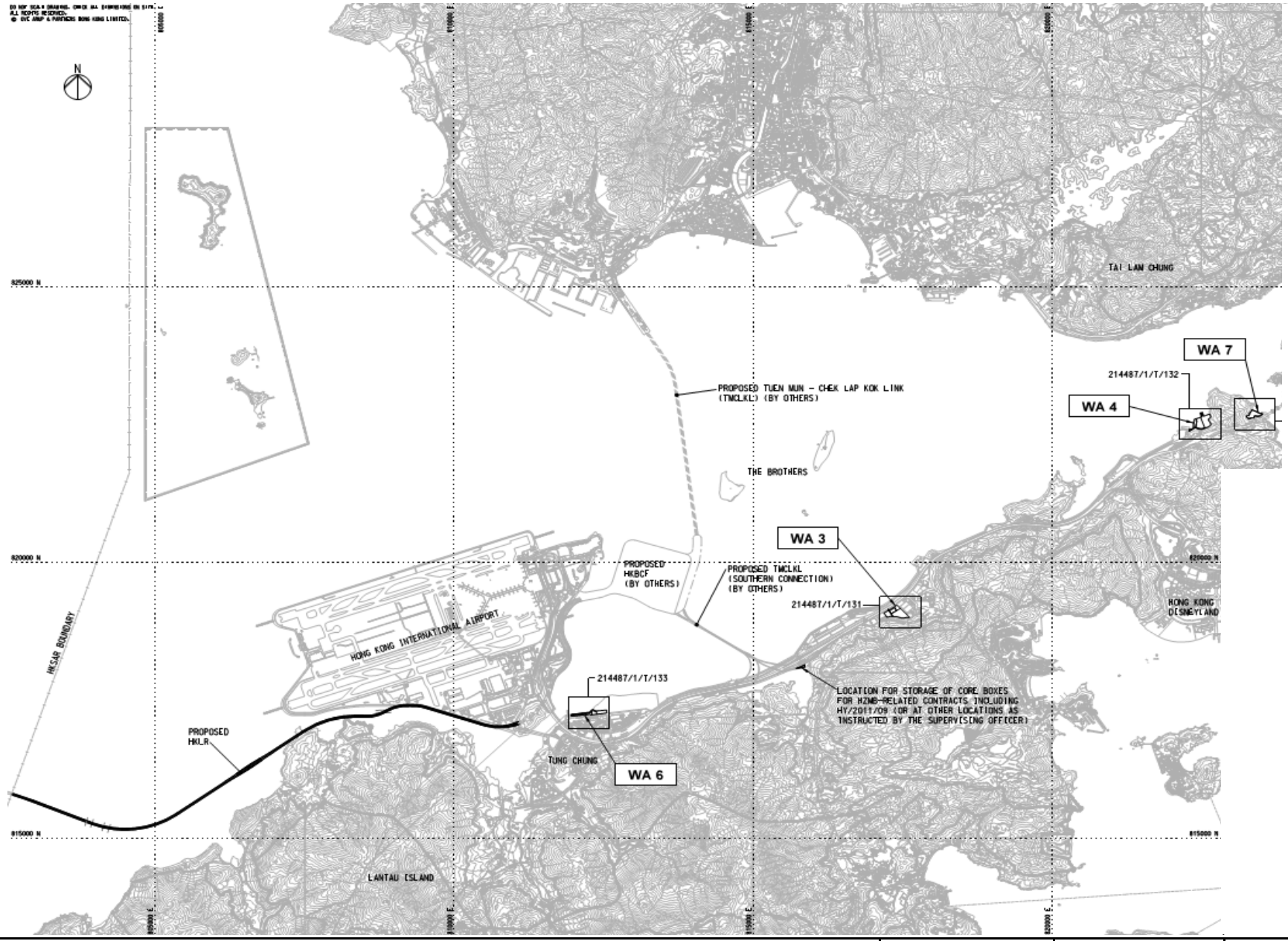
- To implement Spill Response Plan in the event of accidental spillage of or other hazardous chemicals.
- To implement Dolphin Exclusion Zone during the installation of bored pile casing located in the waters to the west of Airport.
- To implement Dolphin Watching Plan after the bored piling casing is 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

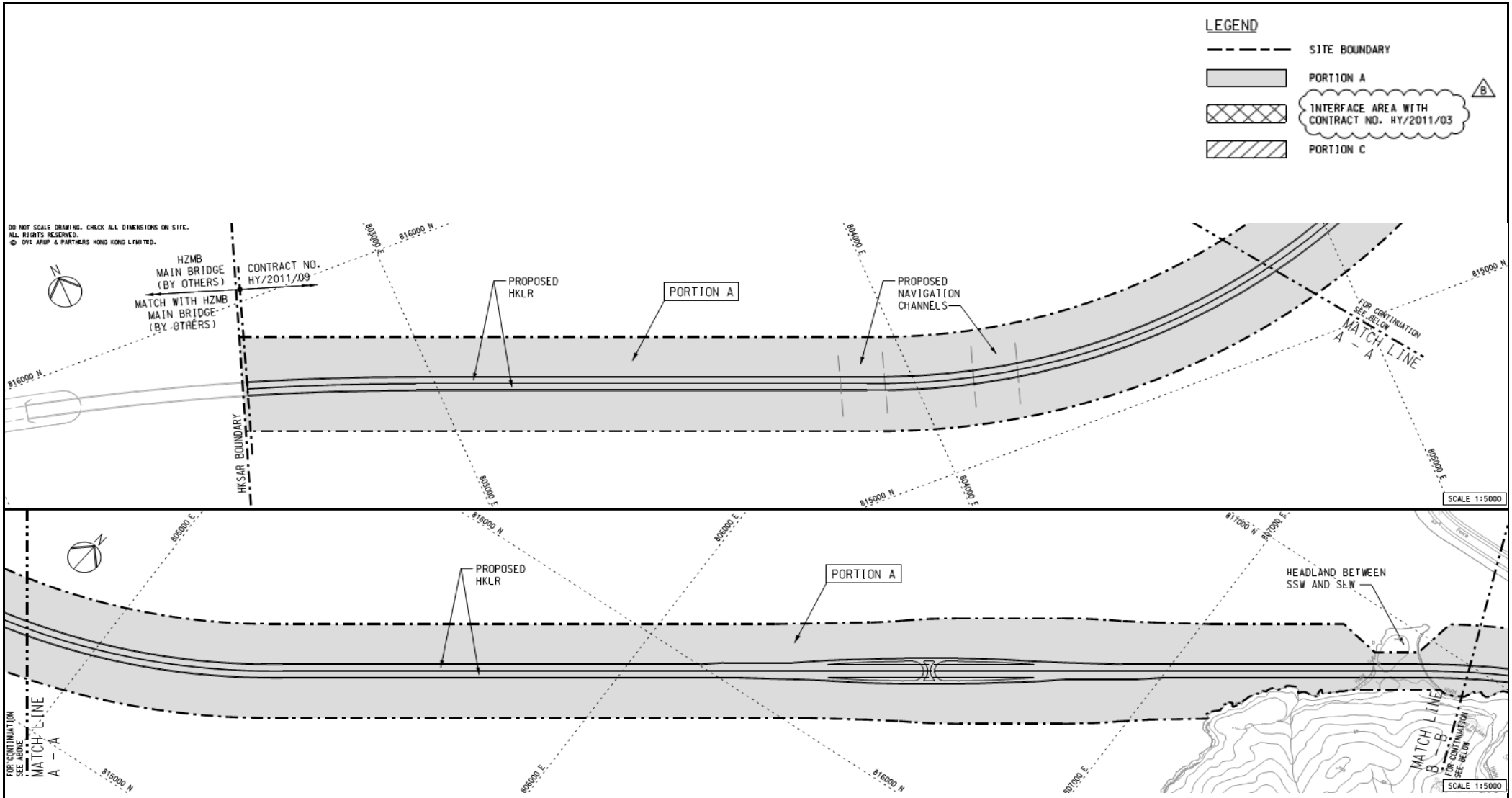
- To check for any accumulation of waste materials or rubbish on site.
- To ensure the performance of sorting of C&D materials at source (during generation);
- To carry out inspection of dump truck at site exit to ensure inert and non-inert C&D materials are properly segregated before removing off site.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



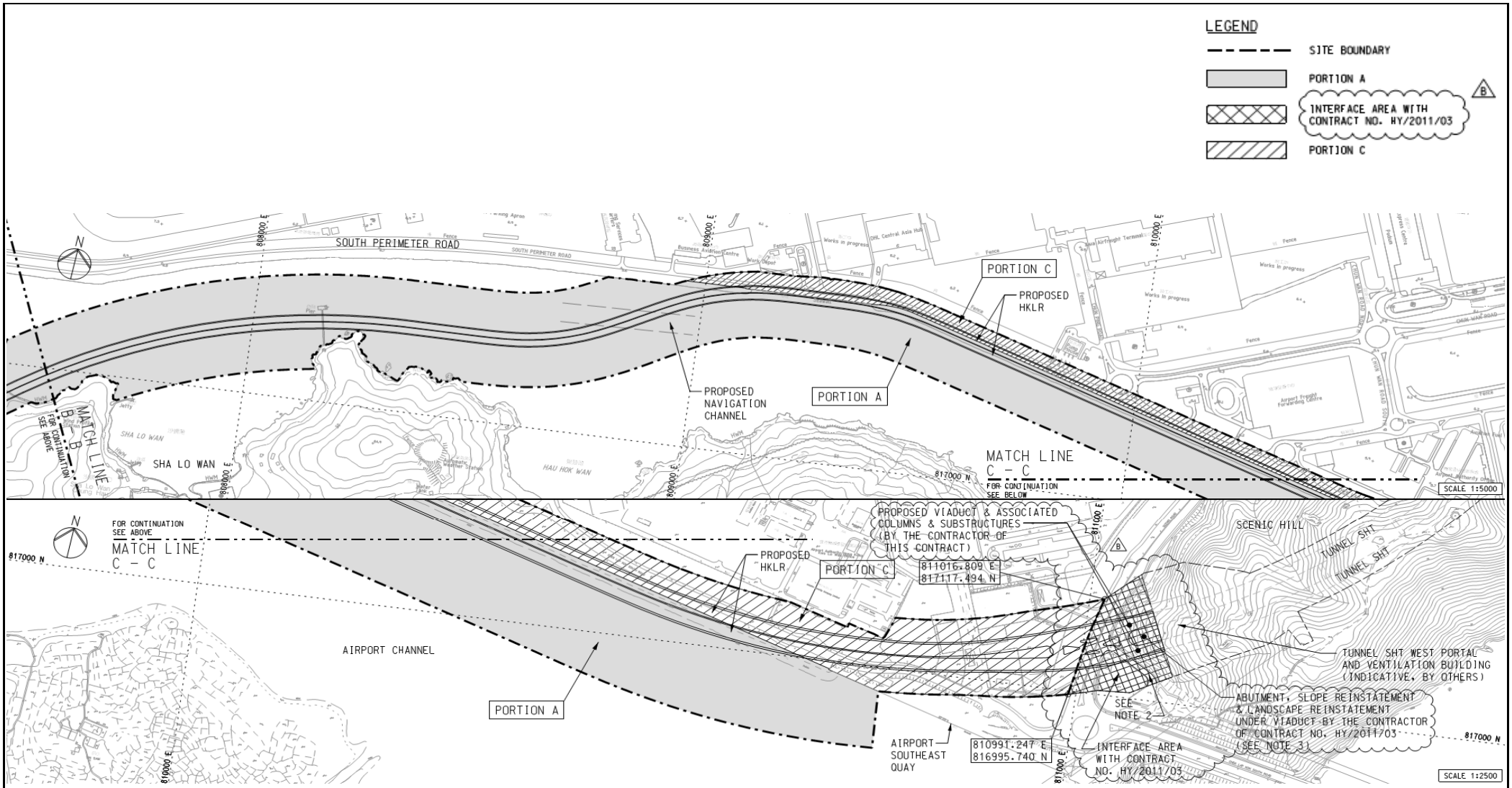
Title		Scale	Proposa
Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill		N.T.S	No. MA12014
Site Layout Plan (WA3, WA4, WA6 and WA7)		Date Feb-13	Figure 1a

CINOTECH



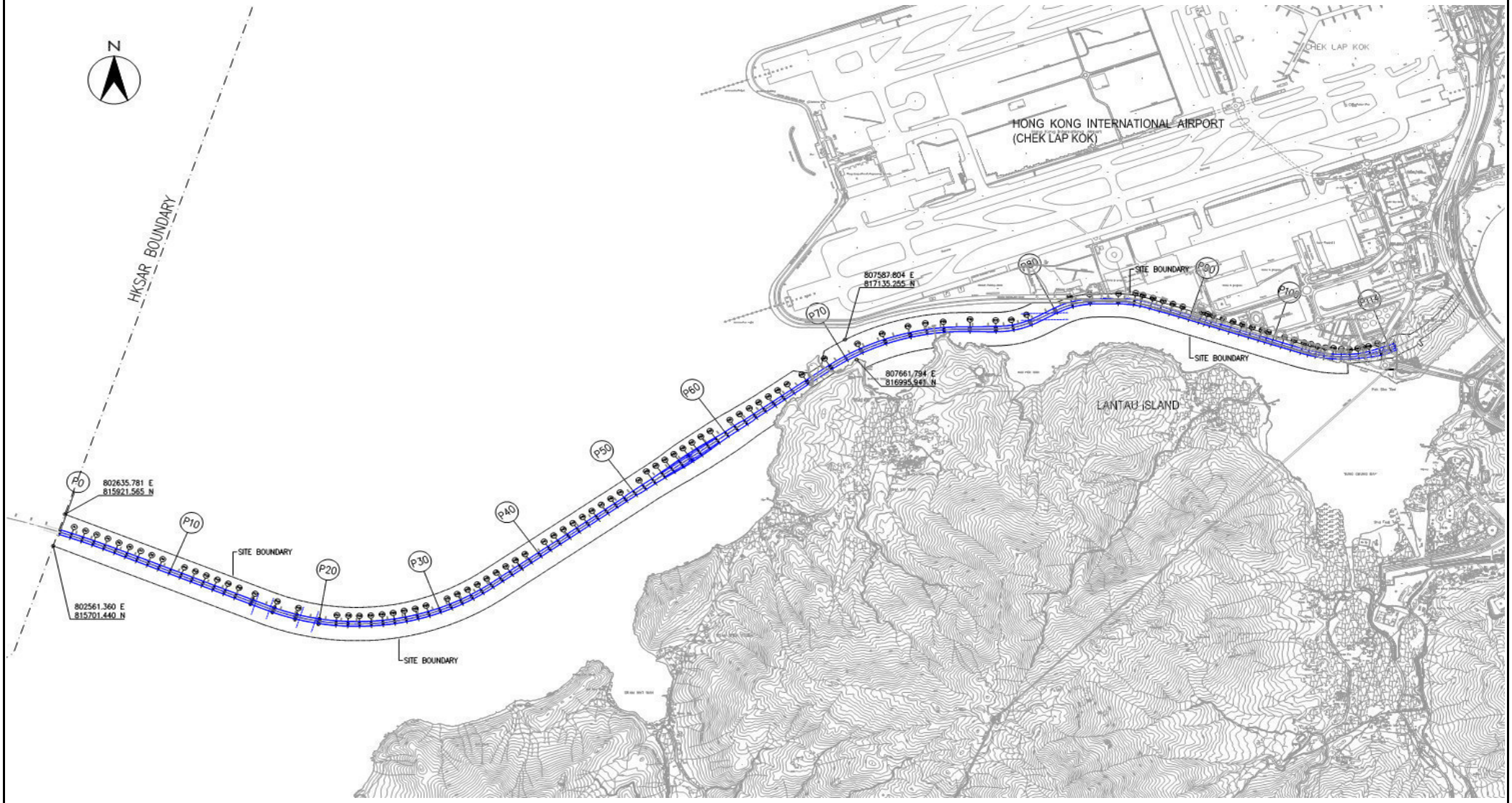
Title	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Site Layout Plan (Portion A)	Scale: N.T.S Date: May-13	Proposa No.: MA12014 Figure: 1b

CINOTECH



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 (Portion A and C)	Scale N.T.S Date May-13	Proposa No. MA12014 Figure 1c

CINOTECH



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 Date: Feb-13	Proposa No. MA12014 Figure: 1d

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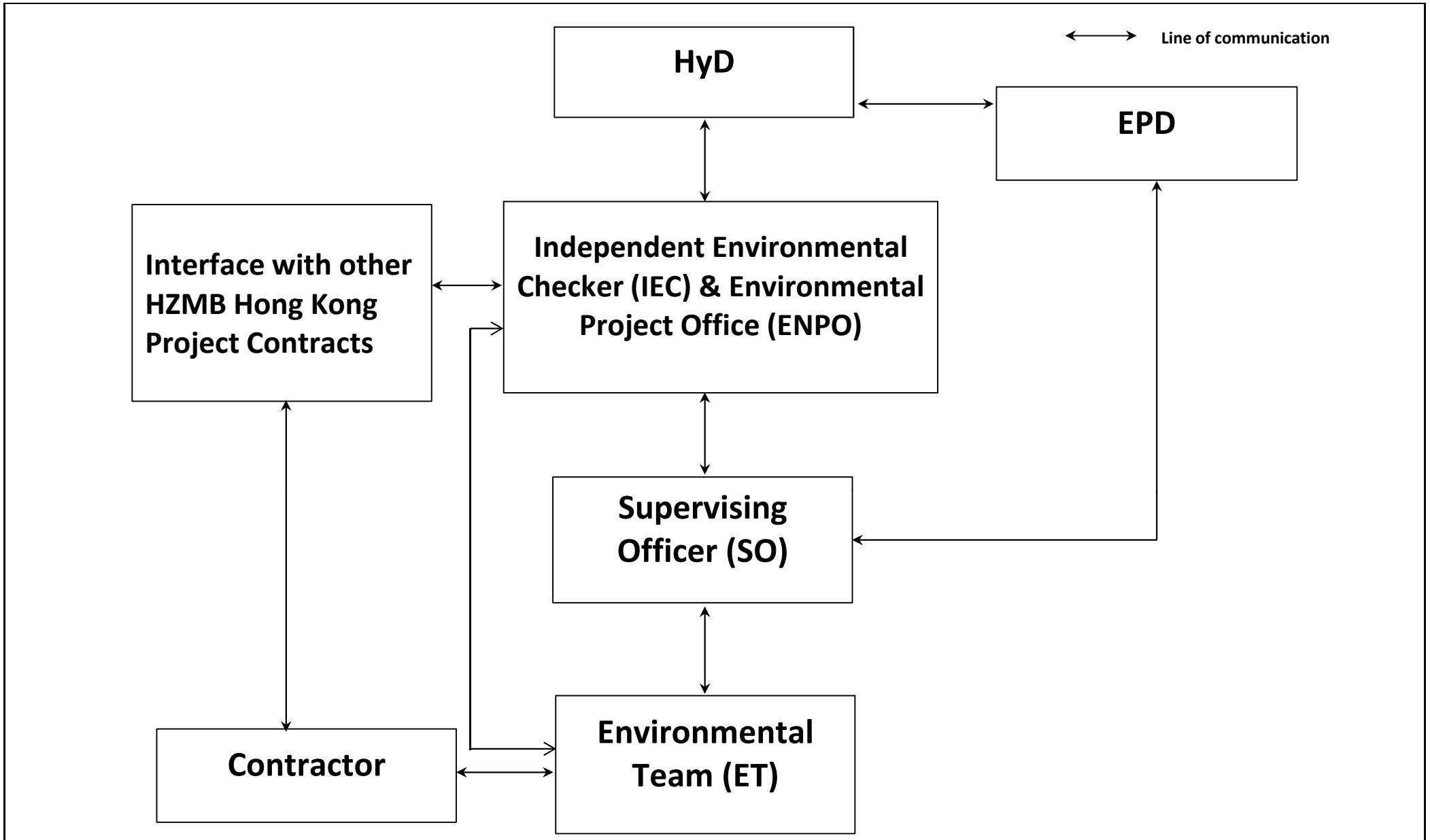
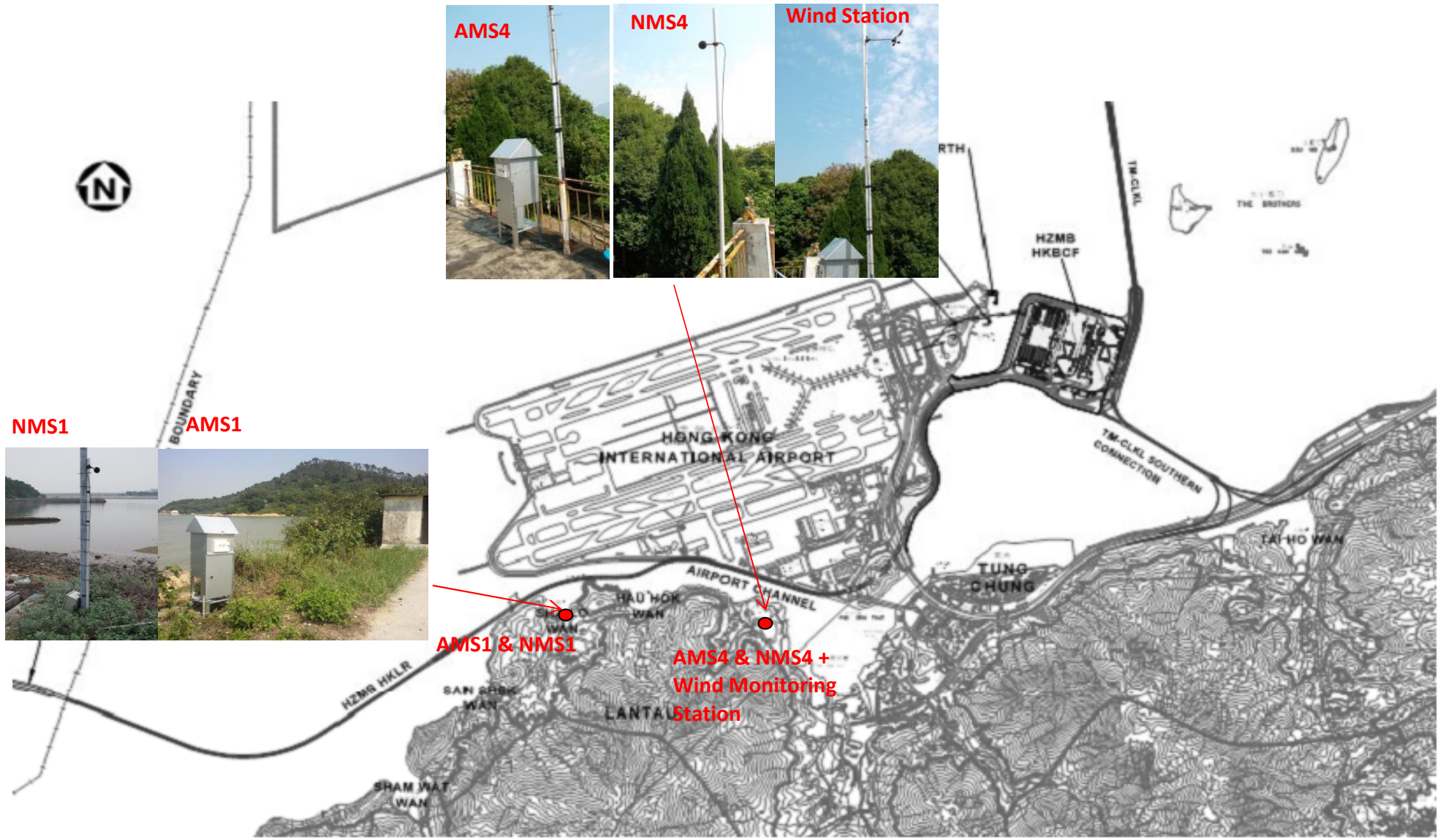
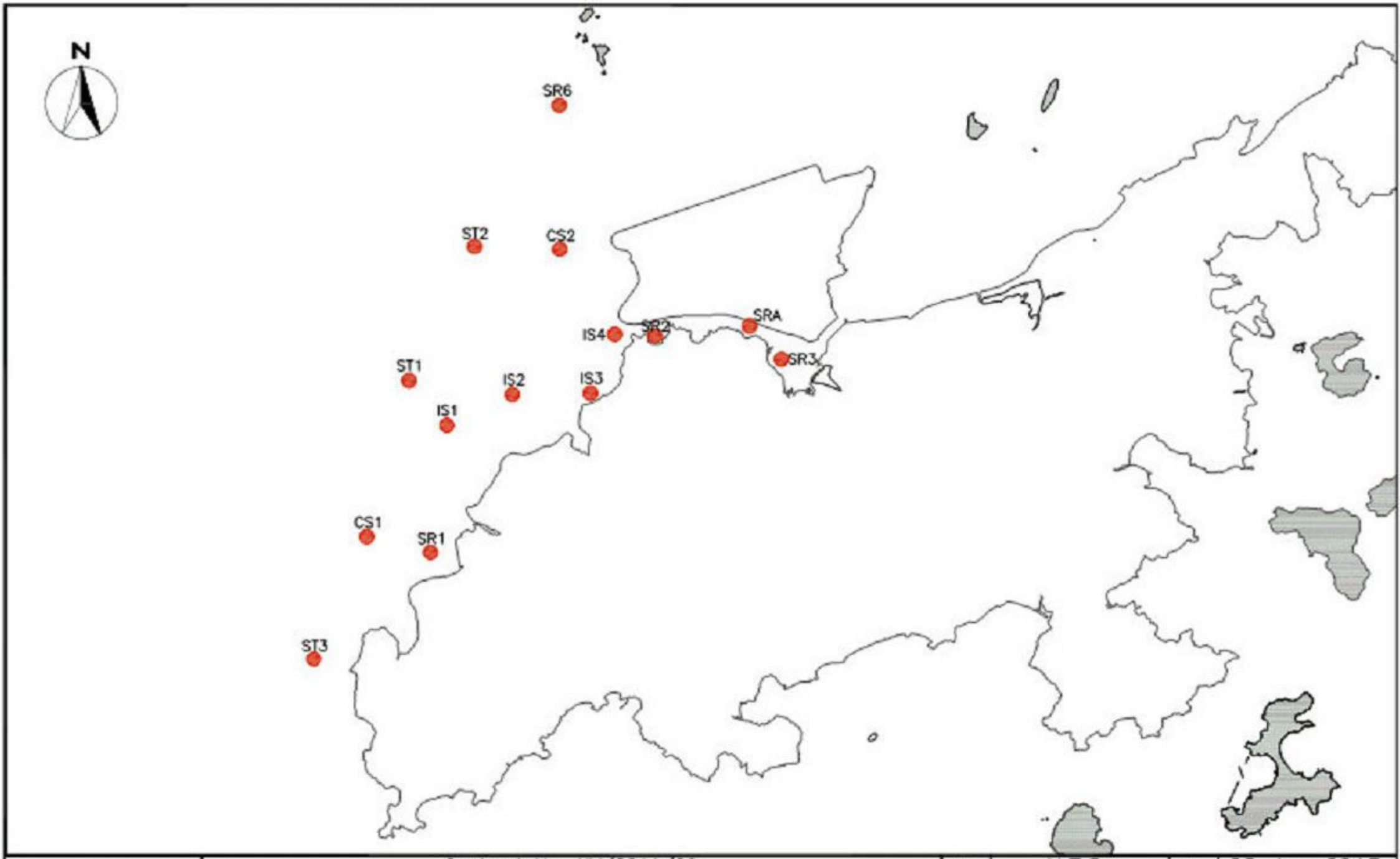


Title	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Project Organisation for Environmental Works	Scale N.T.S Date Feb-13	Proposa No. MA12014 Figure 2	CINOTECH



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

CINOTECH



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Cinotech Consultants Limited

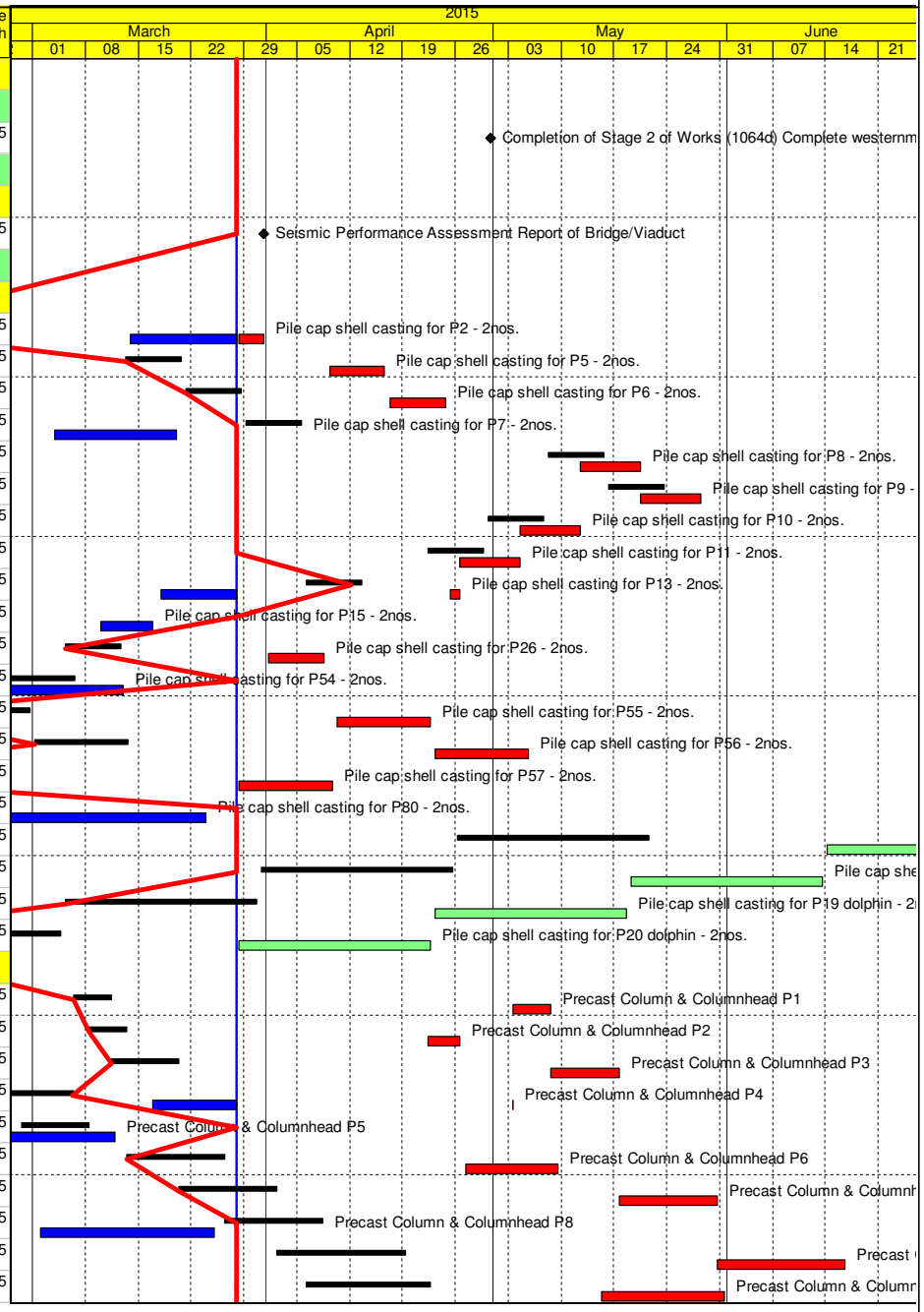
Contract No. HY/2011/09
Hong Kong–Zhuhai–Macao Bridge Hong Kong Link Road – Section Between HKSAR Boundary and Scenic Hill
Locations of Marine Water Quality Monitoring Stations

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

APPENDIX A
CONSTRUCTION PROGRAMME

Dragages - China Harbour - VSL Joint Venture 實嘉 - 中國港灣 - 威勝利聯營

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1502 Start	1502 Finish	DWP01e Start	DWP01e Finish
HKZB Hong Kong Link Road - 3 Months Rolling Programme 1503 (Based on DWP01e)								
Project Key Dates								
KD1015	Completion of Stage 2 of Works (1064d) Complete westernmost span 30/4/15	0	0	0%		30/4/15*		30/4/15
Design and Design Checking of the Works								
General Design Submission								
GDS1150	Seismic Performance Assessment Report of Bridge/Viaduct	0	0	0%		31/3/15*		31/3/15
Procurement and Fabrication								
Pile Cap Shell Casting								
PC1020	Pile cap shell casting for P2 - 2nos.	8	4	50%	14/3/15 A	31/3/15	2/2/15	9/2/15
PC1050	Pile cap shell casting for P5 - 2nos.	8	8	0%	9/4/15	16/4/15	13/3/15	20/3/15
PC1060	Pile cap shell casting for P6 - 2nos.	8	8	0%	17/4/15	24/4/15	21/3/15	28/3/15
PC1070	Pile cap shell casting for P7 - 2nos.	8	0	100%	4/3/15 A	20/3/15 A	29/3/15	5/4/15
PC1080	Pile cap shell casting for P8 - 2nos.	8	8	0%	12/5/15	20/5/15	8/5/15	15/5/15
PC1090	Pile cap shell casting for P9 - 2nos.	8	8	0%	20/5/15	28/5/15	16/5/15	23/5/15
PC1100	Pile cap shell casting for P10 - 2nos.	8	8	0%	4/5/15	12/5/15	30/4/15	7/5/15
PC1110	Pile cap shell casting for P11 - 2nos.	8	8	0%	26/4/15	4/5/15	22/4/15	29/4/15
PC1130	Pile cap shell casting for P13 - 2nos.	8	2	80%	18/3/15 A	26/4/15	6/4/15	13/4/15
PC1150	Pile cap shell casting for P15 - 2nos.	8	0	100%	10/3/15 A	17/3/15 A	1/1/15	8/1/15
PC1220	Pile cap shell casting for P26 - 2nos.	8	8	0%	1/4/15	8/4/15	5/3/15	12/3/15
PC1500	Pile cap shell casting for P54 - 2nos.	13	0	100%	29/12/14 A	13/3/15 A	15/2/15	6/3/15
PC1510	Pile cap shell casting for P55 - 2nos.	13	13	0%	10/4/15	22/4/15	9/2/15	28/2/15
PC1520	Pile cap shell casting for P56 - 2nos.	13	13	0%	23/4/15	5/5/15	1/3/15	13/3/15
PC1530	Pile cap shell casting for P57 - 2nos.	13	13	0%	28/3/15	9/4/15	27/1/15	8/2/15
PC1690	Pile cap shell casting for P80 - 2nos.	30	0	100%	22/12/14 A	24/3/15 A	1/1/15	30/1/15
PC1700	Pile cap shell casting for P17 dolphin - 2nos.	26	26	0%	14/6/15	9/7/15	26/4/15	21/5/15
PC1710	Pile cap shell casting for P18 dolphin - 2nos.	26	26	0%	19/5/15	13/6/15	31/3/15	25/4/15
PC1720	Pile cap shell casting for P19 dolphin - 2nos.	26	26	0%	23/4/15	18/5/15	5/3/15	30/3/15
PC1730	Pile cap shell casting for P20 dolphin - 2nos.	26	26	0%	28/3/15	22/4/15	31/1/15	4/3/15
Column Casting								
PC1740	Precast Column & Columnhead P1	5	5	0%	3/5/15	8/5/15	6/3/15	11/3/15
PC1750	Precast Column & Columnhead P2	5	5	0%	22/4/15	26/4/15	8/3/15	13/3/15
PC1760	Precast Column & Columnhead P3	9	9	0%	8/5/15	17/5/15	11/3/15	20/3/15
PC1770	Precast Column & Columnhead P4	9	0	98.01%	17/3/15 A	3/5/15	25/2/15	6/3/15
PC1780	Precast Column & Columnhead P5	9	0	100%	31/1/15 A	12/3/15 A	27/2/15	8/3/15
PC1790	Precast Column & Columnhead P6	13	13	0%	27/4/15	9/5/15	13/3/15	26/3/15
PC1800	Precast Column & Columnhead P7	13	13	0%	17/5/15	30/5/15	20/3/15	2/4/15
PC1810	Precast Column & Columnhead P8	13	0	100%	2/3/15 A	25/3/15 A	26/3/15	8/4/15
PC1820	Precast Column & Columnhead P9	17	17	0%	30/5/15	16/6/15	2/4/15	19/4/15
PC1830	Precast Column & Columnhead P10	17	17	0%	15/5/15	31/5/15	6/4/15	22/4/15



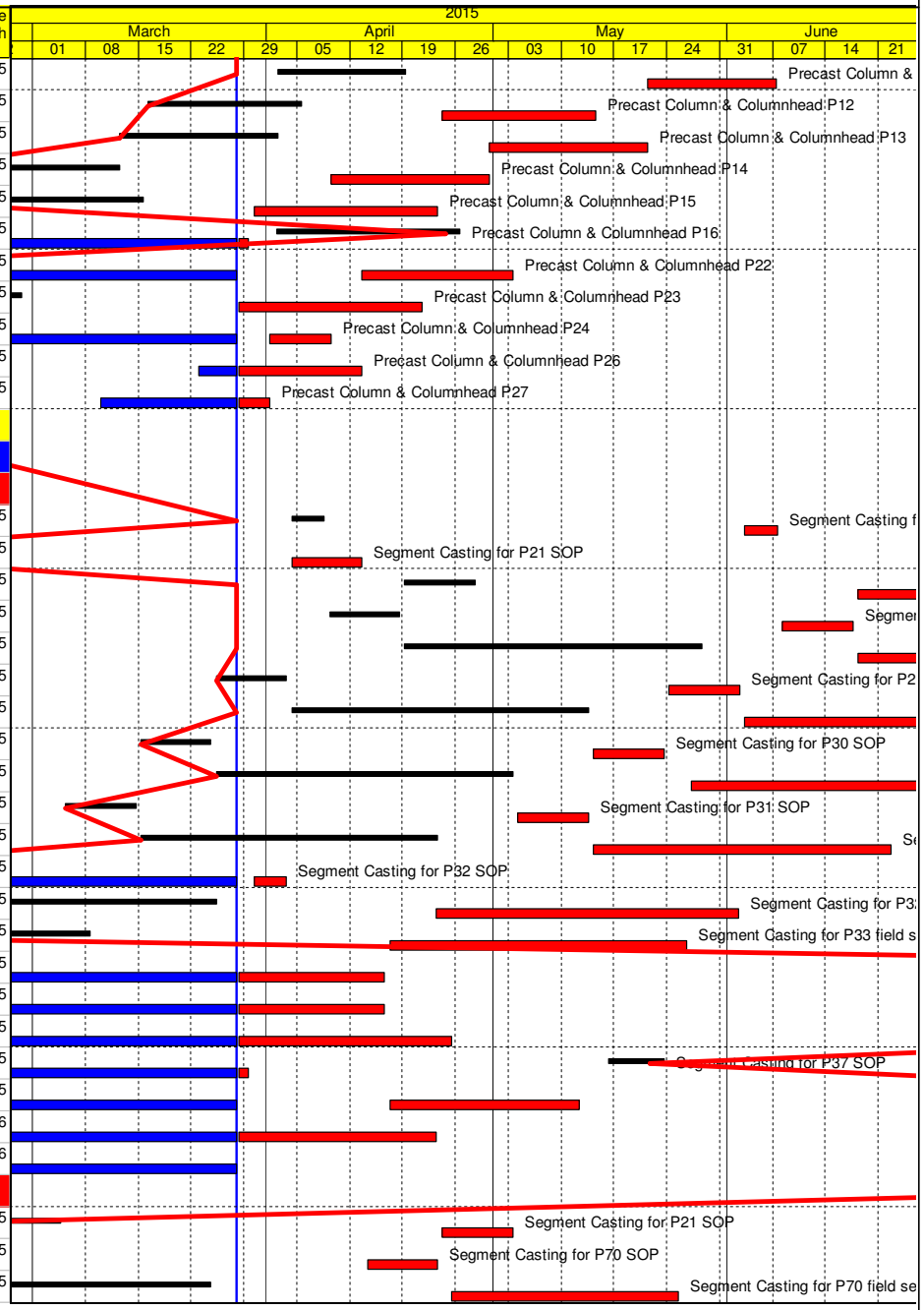
DWP_01d Programme
Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

3MRP DWP_01e 1503

Date	Revision	Checked	Approved
31/3/15	1503 rolling based on DWP01e	Tim	

Dragages - China Harbour - VSL Joint Venture 實嘉 - 中國港灣 - 威勝利聯營

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1502 Start	1502 Finish	DWP01e Start	DWP01e Finish
PC1840	Precast Column & Columnhead P11	17	17	0%	21/5/15	7/6/15	2/4/15	19/4/15
PC1850	Precast Column & Columnhead P12	21	21	0%	24/4/15	14/5/15	16/3/15	5/4/15
PC1860	Precast Column & Columnhead P13	21	21	0%	30/4/15	21/5/15	12/3/15	2/4/15
PC1870	Precast Column & Columnhead P14	21	21	0%	9/4/15	30/4/15	12/2/15	12/3/15
PC1880	Precast Column & Columnhead P15	25	25	0%	30/3/15	23/4/15	12/2/15	15/3/15
PC1890	Precast Column & Columnhead P16	25	2	92%	25/12/14 A	29/3/15	2/4/15	26/4/15
PC1910	Precast Column & Columnhead P22	25	20	20%	23/1/15 A	3/5/15	24/1/15	25/2/15
PC1920	Precast Column & Columnhead P23	25	25	0%	28/3/15	21/4/15	26/1/15	27/2/15
PC1930	Precast Column & Columnhead P24	21	8	60%	20/1/15 A	9/4/15	22/1/15	12/2/15
PC1950	Precast Column & Columnhead P26	21	17	20%	23/3/15 A	13/4/15	3/1/15	24/1/15
PC1960	Precast Column & Columnhead P27	17	4	75%	10/3/15 A	1/4/15	5/1/15	22/1/15
Segment Casting								
Type A, C, D Segment (Total 12 set Moulds)								
Type A Segment (Western Water Typical Span)								
SC_A1000	Segment Casting for P0 SOP	5	5	0%	3/6/15	7/6/15	4/4/15	8/4/15
SC_A1340	Segment Casting for P21 SOP	10	10	0%	4/4/15	13/4/15	27/1/15	5/2/15
SC_A1460	Segment Casting for P27 SOP	10	10	0%	18/6/15	27/6/15	19/4/15	28/4/15
SC_A1480	Segment Casting for P28 SOP	10	10	0%	8/6/15	17/6/15	9/4/15	18/4/15
SC_A1490	Segment Casting for P28 field segment	40	40	0%	18/6/15	27/7/15	19/4/15	28/5/15
SC_A1500	Segment Casting for P29 SOP	10	10	0%	24/5/15	2/6/15	25/3/15	3/4/15
SC_A1510	Segment Casting for P29 field segment	40	40	0%	3/6/15	12/7/15	4/4/15	13/5/15
SC_A1520	Segment Casting for P30 SOP	10	10	0%	14/5/15	23/5/15	15/3/15	24/3/15
SC_A1530	Segment Casting for P30 field segment	40	40	0%	27/5/15	5/7/15	25/3/15	3/5/15
SC_A1540	Segment Casting for P31 SOP	10	10	0%	4/5/15	13/5/15	5/3/15	14/3/15
SC_A1550	Segment Casting for P31 field segment	40	40	0%	14/5/15	22/6/15	15/3/15	23/4/15
SC_A1560	Segment Casting for P32 SOP	10	5	50%	20/1/15 A	3/4/15	17/1/15	26/1/15
SC_A1570	Segment Casting for P32 field segment	40	40	0%	23/4/15	2/6/15	6/2/15	25/3/15
SC_A1590	Segment Casting for P33 field segment	40	40	0%	17/4/15	26/5/15	21/1/15	8/3/15
SC_A1610	Segment Casting for P34 field segment	50	20	60%	16/11/14 A	16/4/15	4/9/15	23/10/15
SC_A1630	Segment Casting for P35 field segment	50	20	60%	19/11/14 A	16/4/15	21/8/15	9/10/15
SC_A1650	Segment Casting for P36 field segment	50	29	43%	24/12/14 A	25/4/15	11/8/15	29/9/15
SC_A1660	Segment Casting for P37 SOP	8	2	75%	31/8/14 A	29/3/15	16/5/15	23/5/15
SC_A1670	Segment Casting for P37 field segment	50	25	49.6%	21/10/14 A	12/5/15	28/7/15	15/9/15
SC_A1980	Segment Casting for P54 field segment	50	27	47%	15/12/14 A	23/4/15	8/1/16	4/3/16
SC_A2080	Segment Casting for P59 field segment	38	36	5%	15/1/15 A	16/4/16	4/1/16	17/2/16
Type C Segment (Long Span End Span)								
SC_C1020	Segment Casting for P21 SOP	10	10	0%	24/4/15	3/5/15	16/2/15	4/3/15
SC_C1060	Segment Casting for P70 SOP	10	10	0%	14/4/15	23/4/15	6/2/15	15/2/15
SC_C1070	Segment Casting for P70 field segment	30	30	0%	25/4/15	25/5/15	16/2/15	24/3/15



DWP_01d Programme
Actual Work
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Date	Revision	Checked	Approved
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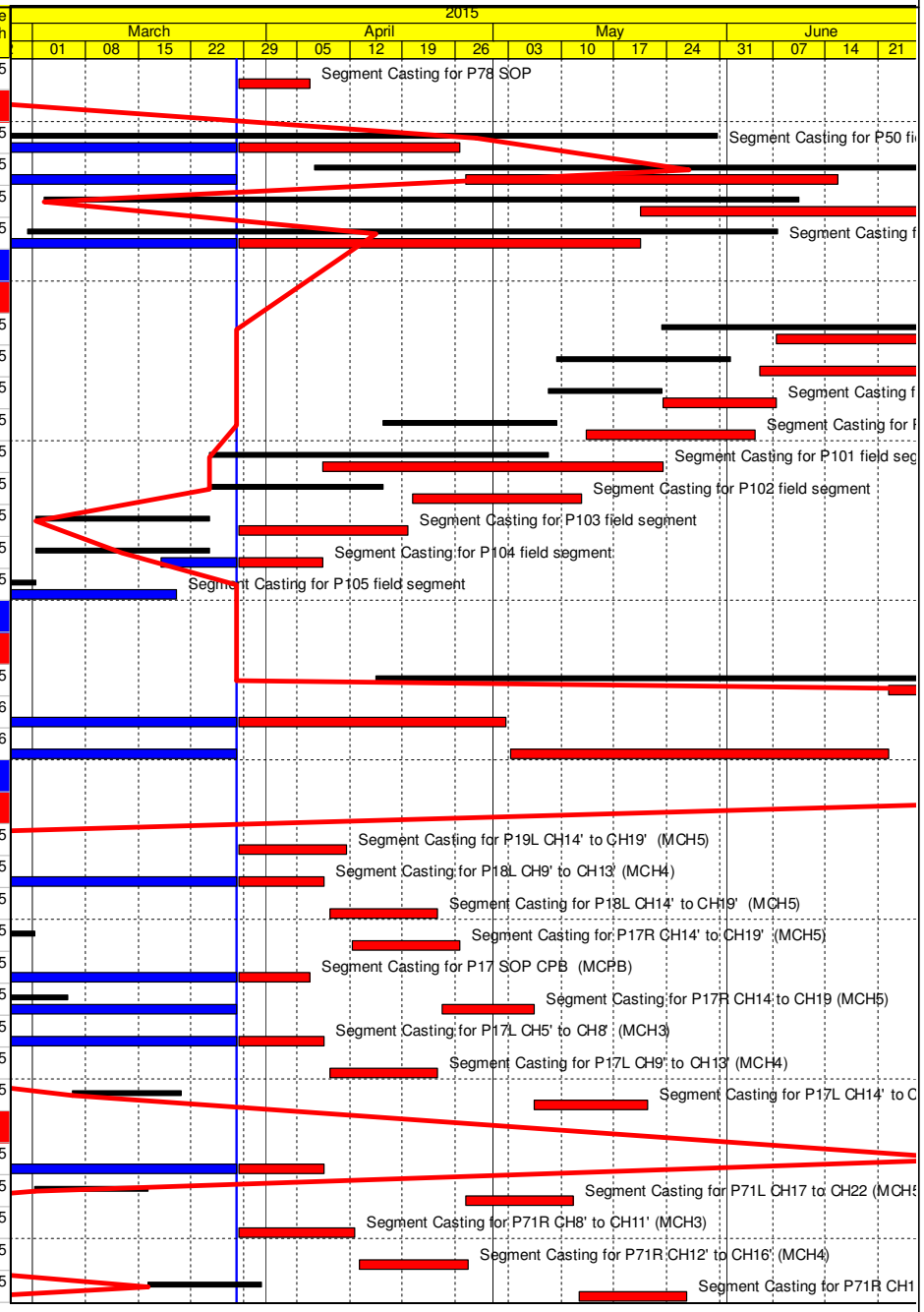
Dragages - China Harbour - VSL Joint Venture 實嘉 - 中國港灣 - 威勝利聯營

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1502 Start	1502 Finish	DWP01e Start	DWP01e Finish
SC_C1100	Segment Casting for P78 SOP	10	10	0%	28/3/15	6/4/15	1/1/15	10/1/15
Type D Segment (P49 to P63)								
SC_D1030	Segment Casting for P50 field segment	100	30	70%	14/7/14 A	26/4/15	13/2/15	30/5/15
SC_D1050	Segment Casting for P51 field segment	100	50	50%	26/9/14 A	15/6/15	7/4/15	15/7/15
SC_D1090	Segment Casting for P61 field segment	100	100	0%	20/5/15	28/8/15	2/3/15	10/6/15
SC_D1110	Segment Casting for P62 field segment	100	54	46.4%	19/10/14 A	20/5/15	28/2/15	7/6/15
Type E Segment (Total 5 set Moulds)								
Land Viaduct (P85 to Easternmost Abutment)								
SC_E1130	Segment Casting for P97 field segment	45	45	0%	7/6/15	22/7/15	23/5/15	7/7/15
SC_E1140	Segment Casting for P98 field segment	23	23	0%	5/6/15	27/6/15	9/5/15	1/6/15
SC_E1150	Segment Casting for P99 field segment	15	15	0%	23/5/15	7/6/15	8/5/15	23/5/15
SC_E1160	Segment Casting for P100 field segment	23	23	0%	13/5/15	4/6/15	16/4/15	9/5/15
SC_E1170	Segment Casting for P101 field segment	45	45	0%	8/4/15	23/5/15	24/3/15	8/5/15
SC_E1180	Segment Casting for P102 field segment	23	23	0%	20/4/15	12/5/15	24/3/15	16/4/15
SC_E1190	Segment Casting for P103 field segment	23	23	0%	28/3/15	19/4/15	1/3/15	24/3/15
SC_E1200	Segment Casting for P104 field segment	23	12	50%	18/3/15 A	8/4/15	1/3/15	24/3/15
SC_E1210	Segment Casting for P105 field segment	20	0	100%	5/2/15 A	20/3/15 A	2/2/15	1/3/15
Type B Segment (Total 1 set Mould)								
Turnaround								
SC_B1020	Segment Casting for P53 field segment	80	80	0%	22/6/15	10/9/15	15/4/15	4/7/15
SC_B1060	Segment Casting for P55 field segment	72	36	50%	7/7/14 A	2/5/15	17/2/16	28/4/16
SC_B1130	Segment Casting for P59 field segment	80	50	37%	2/12/14 A	22/6/15	7/3/16	25/5/16
Type CH Segment (Total 12 set Moulds)								
ML03 (P16 TO P21)								
SC_CH1370	Segment Casting for P19L CH14' to CH19' (MCH5)	15	15	0%	28/3/15	11/4/15	13/1/15	27/1/15
SC_CH1550	Segment Casting for P18L CH9' to CH13' (MCH4)	15	12	20%	13/1/15 A	8/4/15	13/1/15	27/1/15
SC_CH1560	Segment Casting for P18L CH14' to CH19' (MCH5)	15	15	0%	9/4/15	23/4/15	28/1/15	11/2/15
SC_CH1650	Segment Casting for P17R CH14' to CH19' (MCH5)	15	15	0%	12/4/15	26/4/15	7/2/15	1/3/15
SC_CH1670	Segment Casting for P17 SOP CPB (MCPB)	20	10	50%	23/12/14 A	6/4/15	1/1/15	20/1/15
SC_CH1710	Segment Casting for P17R CH14 to CH19 (MCH5)	15	12	17%	21/1/15 A	6/5/15	12/2/15	5/3/15
SC_CH1730	Segment Casting for P17L CH5' to CH8' (MCH3)	16	12	25%	19/1/15 A	8/4/15	13/1/15	28/1/15
SC_CH1740	Segment Casting for P17L CH9' to CH13' (MCH4)	15	15	0%	9/4/15	23/4/15	29/1/15	12/2/15
SC_CH1750	Segment Casting for P17L CH14' to CH19' (MCH5)	15	15	0%	6/5/15	21/5/15	6/3/15	20/3/15
ML11 (P70 TO P74)								
SC_CH2300	Segment Casting for P71L CH12 to CH16 (MCH4)	15	12	20%	20/12/14 A	8/4/15	30/6/15	14/7/15
SC_CH2310	Segment Casting for P71L CH17 to CH22 (MCH5)	15	15	0%	27/4/15	11/5/15	1/3/15	16/3/15
SC_CH2340	Segment Casting for P71R CH8' to CH11' (MCH3)	16	16	0%	28/3/15	12/4/15	9/1/15	24/1/15
SC_CH2350	Segment Casting for P71R CH12' to CH16' (MCH4)	15	15	0%	13/4/15	27/4/15	25/1/15	8/2/15
SC_CH2360	Segment Casting for P71R CH17' to CH22' (MCH5)	15	15	0%	12/5/15	26/5/15	16/3/15	31/3/15



DWP_01d Programme
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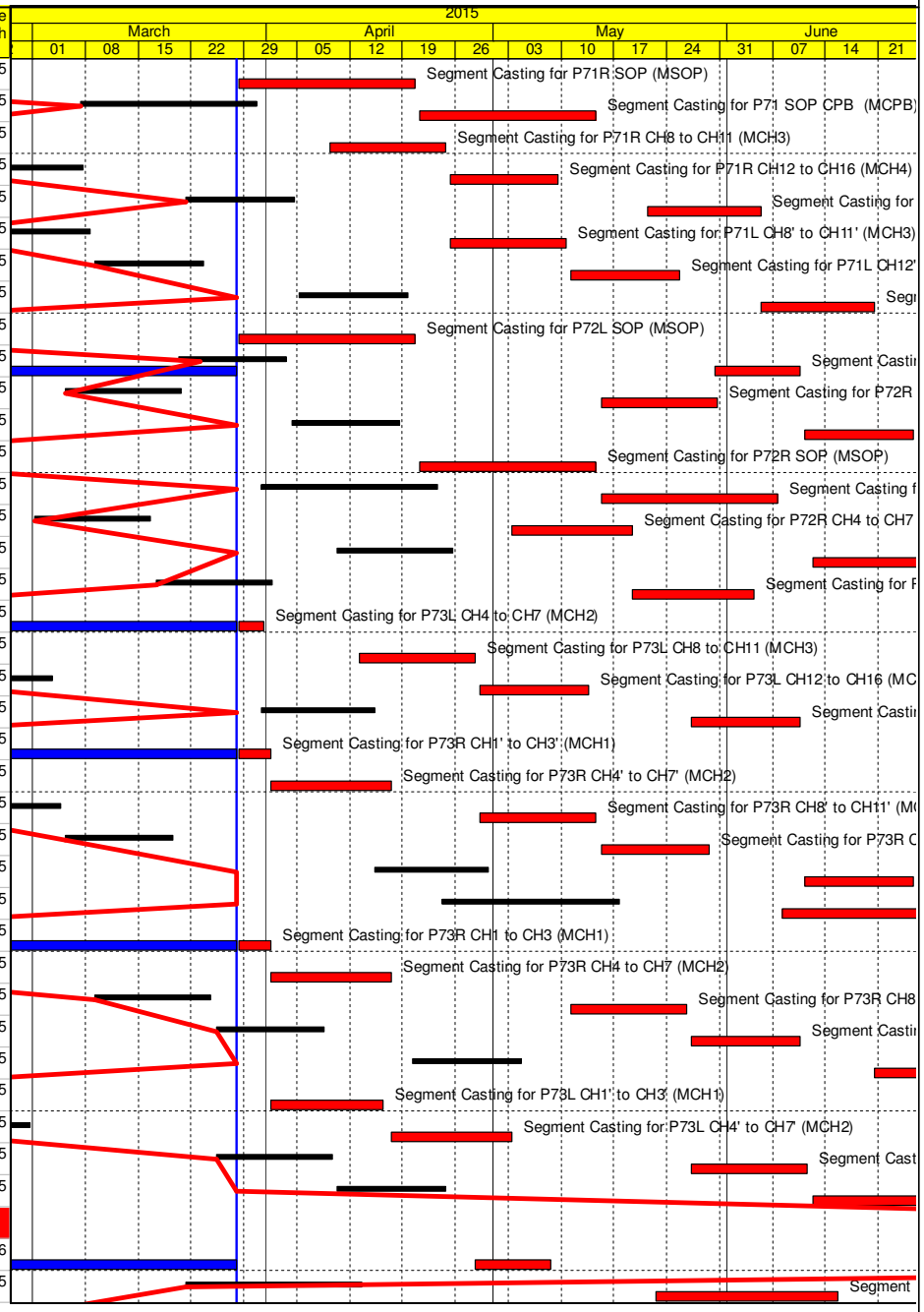
Dragages - China Harbour - VSL Joint Venture 實嘉 - 中國港灣 - 威勝利聯營

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1502 Start	1502 Finish	DWP01e Start	DWP01e Finish
SC_CH2370	Segment Casting for P71R SOP (MSOP)	24	24	0%	28/3/15	20/4/15	1/1/15	24/1/15
SC_CH2380	Segment Casting for P71 SOP CPB (MCPB)	24	24	0%	21/4/15	14/5/15	7/3/15	30/3/15
SC_CH2410	Segment Casting for P71R CH8 to CH11 (MCH3)	16	16	0%	9/4/15	24/4/15	29/1/15	13/2/15
SC_CH2420	Segment Casting for P71R CH12 to CH16 (MCH4)	15	15	0%	25/4/15	9/5/15	14/2/15	7/3/15
SC_CH2430	Segment Casting for P71R CH17 to CH22 (MCH5)	15	15	0%	21/5/15	5/6/15	21/3/15	4/4/15
SC_CH2460	Segment Casting for P71L CH8' to CH11' (MCH3)	16	16	0%	25/4/15	10/5/15	14/2/15	8/3/15
SC_CH2470	Segment Casting for P71L CH12' to CH16' (MCH4)	15	15	0%	11/5/15	25/5/15	9/3/15	23/3/15
SC_CH2480	Segment Casting for P71L CH17' to CH22' (MCH5)	15	15	0%	5/6/15	20/6/15	5/4/15	19/4/15
SC_CH2490	Segment Casting for P72L SOP (MSOP)	24	24	0%	28/3/15	20/4/15	11/1/15	3/2/15
SC_CH2530	Segment Casting for P72L CH12 to CH16 (MCH4)	15	12	20%	14/1/15 A	10/6/15	20/3/15	3/4/15
SC_CH2570	Segment Casting for P72R CH8' to CH11' (MCH3)	16	16	0%	15/5/15	30/5/15	5/3/15	20/3/15
SC_CH2580	Segment Casting for P72R CH12' to CH16' (MCH4)	15	15	0%	11/6/15	25/6/15	4/4/15	18/4/15
SC_CH2600	Segment Casting for P72R SOP (MSOP)	24	24	0%	21/4/15	14/5/15	25/1/15	17/2/15
SC_CH2610	Segment Casting for P72 SOP CPB (MCPB)	24	24	0%	15/5/15	7/6/15	31/3/15	23/4/15
SC_CH2630	Segment Casting for P72R CH4 to CH7 (MCH2)	16	16	0%	3/5/15	19/5/15	1/3/15	16/3/15
SC_CH2640	Segment Casting for P72R CH8 to CH11 (MCH3)	16	16	0%	12/6/15	27/6/15	10/4/15	25/4/15
SC_CH2680	Segment Casting for P72L CH4' to CH7' (MCH2)	16	16	0%	19/5/15	4/6/15	17/3/15	1/4/15
SC_CH2740	Segment Casting for P73L CH4 to CH7 (MCH2)	16	4	75%	6/1/15 A	31/3/15	5/1/15	20/1/15
SC_CH2750	Segment Casting for P73L CH8 to CH11 (MCH3)	16	16	0%	13/4/15	28/4/15	25/1/15	9/2/15
SC_CH2760	Segment Casting for P73L CH12 to CH16 (MCH4)	15	15	0%	29/4/15	13/5/15	10/2/15	3/3/15
SC_CH2770	Segment Casting for P73L CH17 to CH22 (MCH5)	15	15	0%	27/5/15	10/6/15	31/3/15	15/4/15
SC_CH2780	Segment Casting for P73R CH1' to CH3' (MCH1)	15	5	70%	15/1/15 A	1/4/15	1/1/15	15/1/15
SC_CH2790	Segment Casting for P73R CH4' to CH7' (MCH2)	16	16	0%	1/4/15	17/4/15	21/1/15	5/2/15
SC_CH2800	Segment Casting for P73R CH8' to CH11' (MCH3)	16	16	0%	29/4/15	14/5/15	10/2/15	4/3/15
SC_CH2810	Segment Casting for P73R CH12' to CH16' (MCH4)	15	15	0%	15/5/15	29/5/15	5/3/15	19/3/15
SC_CH2820	Segment Casting for P73R CH17' to CH22' (MCH5)	15	15	0%	11/6/15	25/6/15	15/4/15	30/4/15
SC_CH2840	Segment Casting for P73 SOP CPB (MCPB)	24	24	0%	8/6/15	1/7/15	24/4/15	17/5/15
SC_CH2850	Segment Casting for P73R CH1 to CH3 (MCH1)	15	5	70%	5/1/15 A	1/4/15	1/1/15	15/1/15
SC_CH2860	Segment Casting for P73R CH4 to CH7 (MCH2)	16	16	0%	1/4/15	17/4/15	21/1/15	5/2/15
SC_CH2870	Segment Casting for P73R CH8 to CH11 (MCH3)	16	16	0%	11/5/15	26/5/15	9/3/15	24/3/15
SC_CH2880	Segment Casting for P73R CH12 to CH16 (MCH4)	15	15	0%	27/5/15	10/6/15	25/3/15	8/4/15
SC_CH2890	Segment Casting for P73R CH17 to CH22 (MCH5)	15	15	0%	20/6/15	5/7/15	20/4/15	4/5/15
SC_CH2900	Segment Casting for P73L CH1' to CH3' (MCH1)	15	15	0%	1/4/15	16/4/15	16/1/15	30/1/15
SC_CH2910	Segment Casting for P73L CH4' to CH7' (MCH2)	16	16	0%	17/4/15	3/5/15	6/2/15	28/2/15
SC_CH2920	Segment Casting for P73L CH8' to CH11' (MCH3)	16	16	0%	27/5/15	11/6/15	25/3/15	9/4/15
SC_CH2930	Segment Casting for P73L CH12' to CH16' (MCH4)	15	15	0%	12/6/15	26/6/15	10/4/15	24/4/15
ML12 (P74 TO P78)								
SC_CH2950	Segment Casting for P75L SOP (MSOP)	20	10	50%	25/12/14 A	8/5/15	6/2/16	3/3/16
SC_CH3110	Segment Casting for P75R SOP (MSOP)	24	24	0%	22/5/15	15/6/15	21/3/15	13/4/15



DWP_01d Programme
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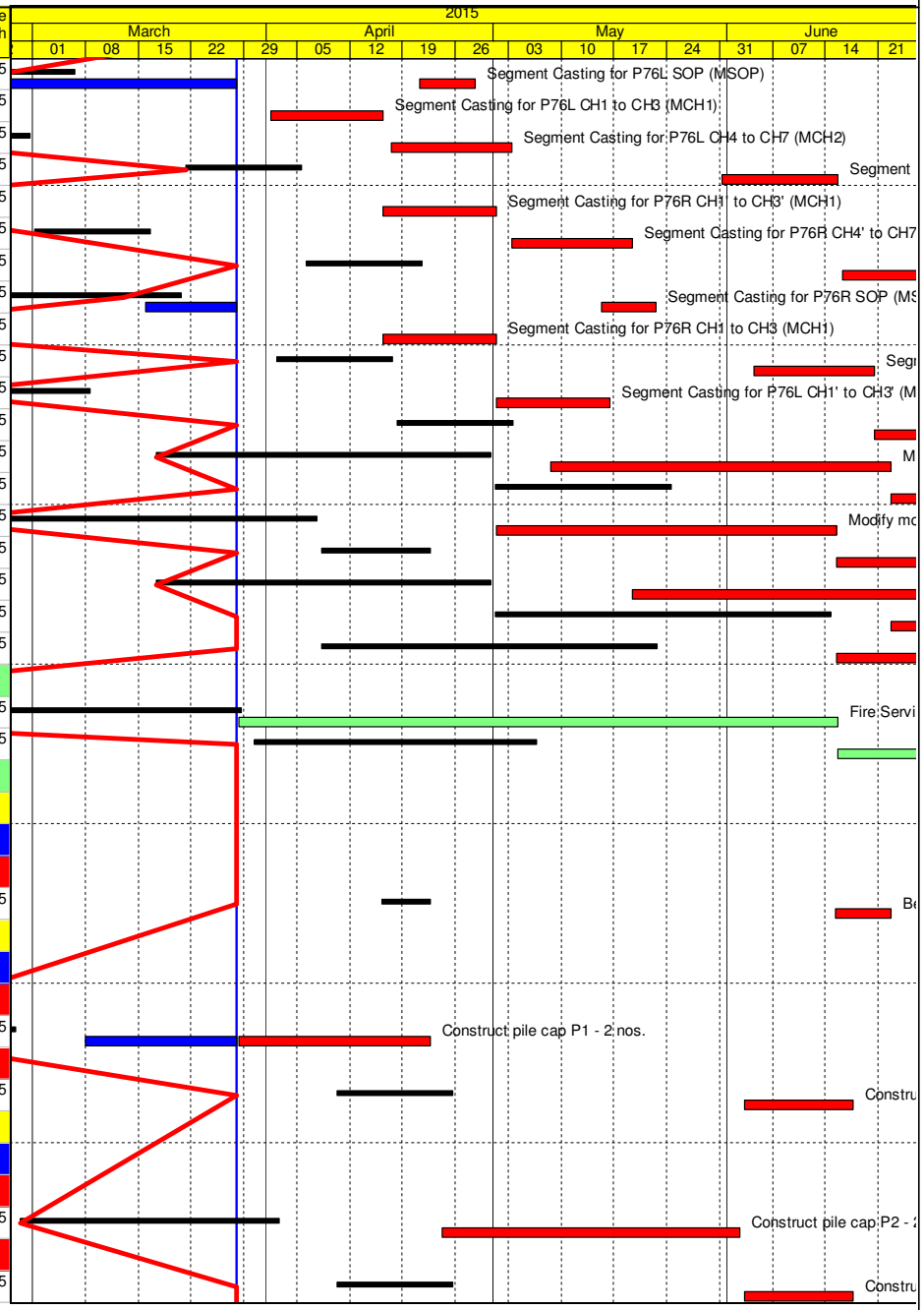
Dragages - China Harbour - VSL Joint Venture 實嘉 - 中國港灣 - 威勝利聯營

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1502 Start	1502 Finish	DWP01e Start	DWP01e Finish
SC_CH3280	Segment Casting for P76L SOP (MSOP)	24	8	67%	21/1/15 A	28/4/15	4/2/15	6/3/15
SC_CH3290	Segment Casting for P76L CH1 to CH3 (MCH1)	15	15	0%	1/4/15	16/4/15	16/1/15	30/1/15
SC_CH3300	Segment Casting for P76L CH4 to CH7 (MCH2)	16	16	0%	17/4/15	3/5/15	6/2/15	28/2/15
SC_CH3310	Segment Casting for P76L CH8 to CH11 (MCH3)	16	16	0%	31/5/15	15/6/15	21/3/15	5/4/15
SC_CH3340	Segment Casting for P76R CH1' to CH3' (MCH1)	15	15	0%	16/4/15	1/5/15	31/1/15	14/2/15
SC_CH3350	Segment Casting for P76R CH4' to CH7' (MCH2)	16	16	0%	3/5/15	19/5/15	1/3/15	16/3/15
SC_CH3360	Segment Casting for P76R CH8' to CH11' (MCH3)	16	16	0%	16/6/15	1/7/15	6/4/15	21/4/15
SC_CH3390	Segment Casting for P76R SOP (MSOP)	24	8	67%	16/3/15 A	22/5/15	25/2/15	20/3/15
SC_CH3410	Segment Casting for P76R CH1 to CH3 (MCH1)	15	15	0%	16/4/15	1/5/15	31/1/15	14/2/15
SC_CH3420	Segment Casting for P76R CH4 to CH7 (MCH2)	16	16	0%	4/6/15	20/6/15	2/4/15	17/4/15
SC_CH3460	Segment Casting for P76L CH1' to CH3' (MCH1)	15	15	0%	1/5/15	16/5/15	15/2/15	8/3/15
SC_CH3470	Segment Casting for P76L CH4' to CH7' (MCH2)	16	16	0%	20/6/15	6/7/15	18/4/15	3/5/15
SC_CH3510	Modify mould for widen deck section (MSOP)	45	45	0%	8/5/15	22/6/15	17/3/15	30/4/15
SC_CH3520	Segment Casting for P77L SOP (MSOP)	24	24	0%	22/6/15	16/7/15	1/5/15	24/5/15
SC_CH3530	Modify mould for widen deck section (MCH1)	45	45	0%	1/5/15	15/6/15	15/2/15	7/4/15
SC_CH3540	Segment Casting for P77L CH1 to CH3 (MCH1)	15	15	0%	15/6/15	30/6/15	8/4/15	22/4/15
SC_CH3550	Modify mould for widen deck section (MCH2)	45	45	0%	19/5/15	3/7/15	17/3/15	30/4/15
SC_CH3680	Modify mould for widen deck section (MSOP)	45	45	0%	22/6/15	6/8/15	1/5/15	14/6/15
SC_CH3710	Modify mould for widen deck section (MCH1)	45	45	0%	15/6/15	30/7/15	8/4/15	22/5/15
Testing and Commissioning of the Works								
TC10000	Fire Services and Emergency - Testing & Commissioning	80	80	0%	28/3/15	15/6/15	1/1/15	28/3/15
TC10100	Statutory Inspection	28	28	0%	15/6/15	20/7/15	30/3/15	6/5/15
Viaduct between HKSAR Boundary and Landing Point on Airport Island								
ML01L/R 75mx8 - Stage 1 of Works								
Pier P0L/R								
Column Construction								
WW1065	Bearing Installation - P0	5	5	0%	15/6/15	22/6/15	16/4/15	22/4/15
ML01L/R 75mx8 - Stage 2 of Works								
Pier P1L/R								
Pile Cap Construction								
WW1130	Construct pile cap P1 - 2 nos.	30	18	40%	8/3/15 A	22/4/15	20/1/15	26/2/15
Column Construction								
WW1140	Construct column P1 - 2 nos. (in-situ section)	12	12	0%	3/6/15	17/6/15	10/4/15	25/4/15
ML01L/R 75mx8 - Stage 4 of Works								
Pier P2L/R								
Pile Cap Construction								
WW1210	Construct pile cap P2 - 2 nos.	30	30	0%	24/4/15	2/6/15	27/2/15	2/4/15
Column Construction								
WW1220	Construct column P2 - 2 nos. (in-situ section)	12	12	0%	3/6/15	17/6/15	10/4/15	25/4/15



DWP_01d Programme
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Date	Revision	Checked	Approved
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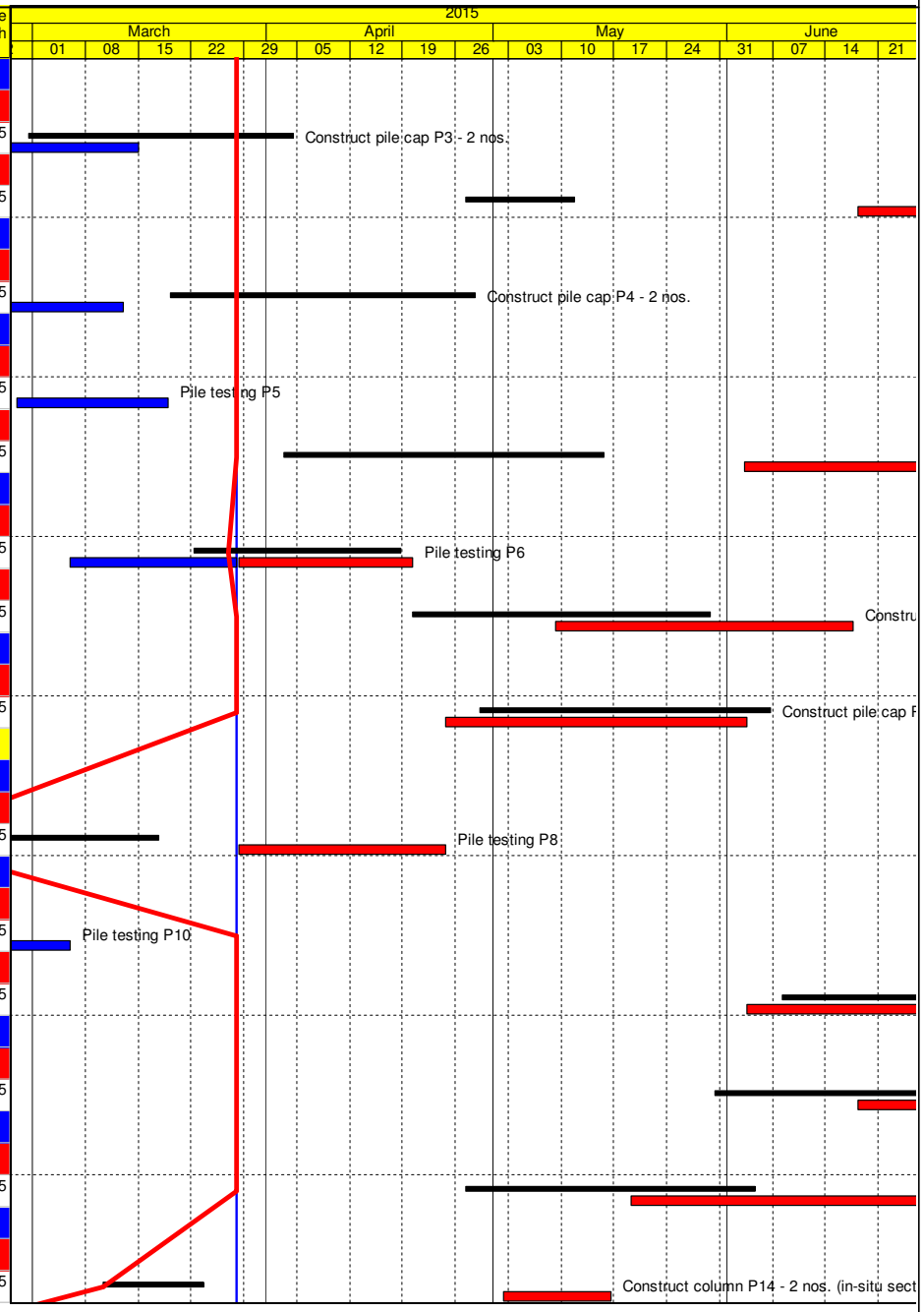
Dragages - China Harbour - VSL Joint Venture 實嘉 - 中國港灣 - 威勝利聯營

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1502 Start	1502 Finish	DWP01e Start	DWP01e Finish
Pier P3L/R								
Pile Cap Construction								
WW1290	Construct pile cap P3 - 2 nos.	30	0	100%	31/1/15 A	15/3/15 A	28/2/15	4/4/15
Column Construction								
WW1300	Construct column P3 - 2 nos. (in-situ section)	12	12	0%	18/6/15	7/7/15	27/4/15	11/5/15
Pier P4L/R								
Pile Cap Construction								
WW1370	Construct pile cap P4 - 2 nos.	30	0	100%	31/1/15 A	13/3/15 A	19/3/15	28/4/15
Pier P5L/R								
Foundation - Bored Pile								
WW1440	Pile testing P5	28	0	100%	27/2/15 A	19/3/15 A	1/1/15	28/1/15
Pile Cap Construction								
WW1450	Construct pile cap P5 - 2 nos.	30	30	0%	3/6/15	15/7/15	3/4/15	15/5/15
Pier P6L/R								
Foundation - Bored Pile								
WW1520	Pile testing P6	28	23	17%	6/3/15 A	20/4/15	22/3/15	18/4/15
Pile Cap Construction								
WW1530	Construct pile cap P6 - 2 nos.	30	30	0%	9/5/15	17/6/15	20/4/15	29/5/15
Pier P7L/R								
Pile Cap Construction								
WW1610	Construct pile cap P7 - 2 nos.	30	30	0%	24/4/15	3/6/15	29/4/15	6/6/15
ML02L/R 75mx8 - Stage 4 of Works								
Pier P8L/R (M.J.)								
Foundation - Bored Pile								
WW1680	Pile testing P8	28	28	0%	28/3/15	24/4/15	11/2/15	17/3/15
Pier P10L/R								
Foundation - Bored Pile								
WW1840	Pile testing P10	28	0	100%	10/2/15 A	6/3/15 A	6/1/15	2/2/15
Pile Cap Construction								
WW1850	Construct pile cap P10 - 2 nos.	30	30	0%	3/6/15	16/7/15	8/6/15	21/7/15
Pier P11L/R								
Pile Cap Construction								
WW1930	Construct pile cap P11 - 2 nos.	30	30	0%	18/6/15	31/7/15	30/5/15	10/7/15
Pier P13L/R								
Pile Cap Construction								
WW2090	Construct pile cap P13 - 2 nos.	30	30	0%	19/5/15	29/6/15	27/4/15	4/6/15
Pier P14L/R								
Column Construction								
WW2180	Construct column P14 - 2 nos. (in-situ section)	12	12	0%	2/5/15	16/5/15	10/3/15	23/3/15



DWP_01d Programme
Actual Work
Remaining Work
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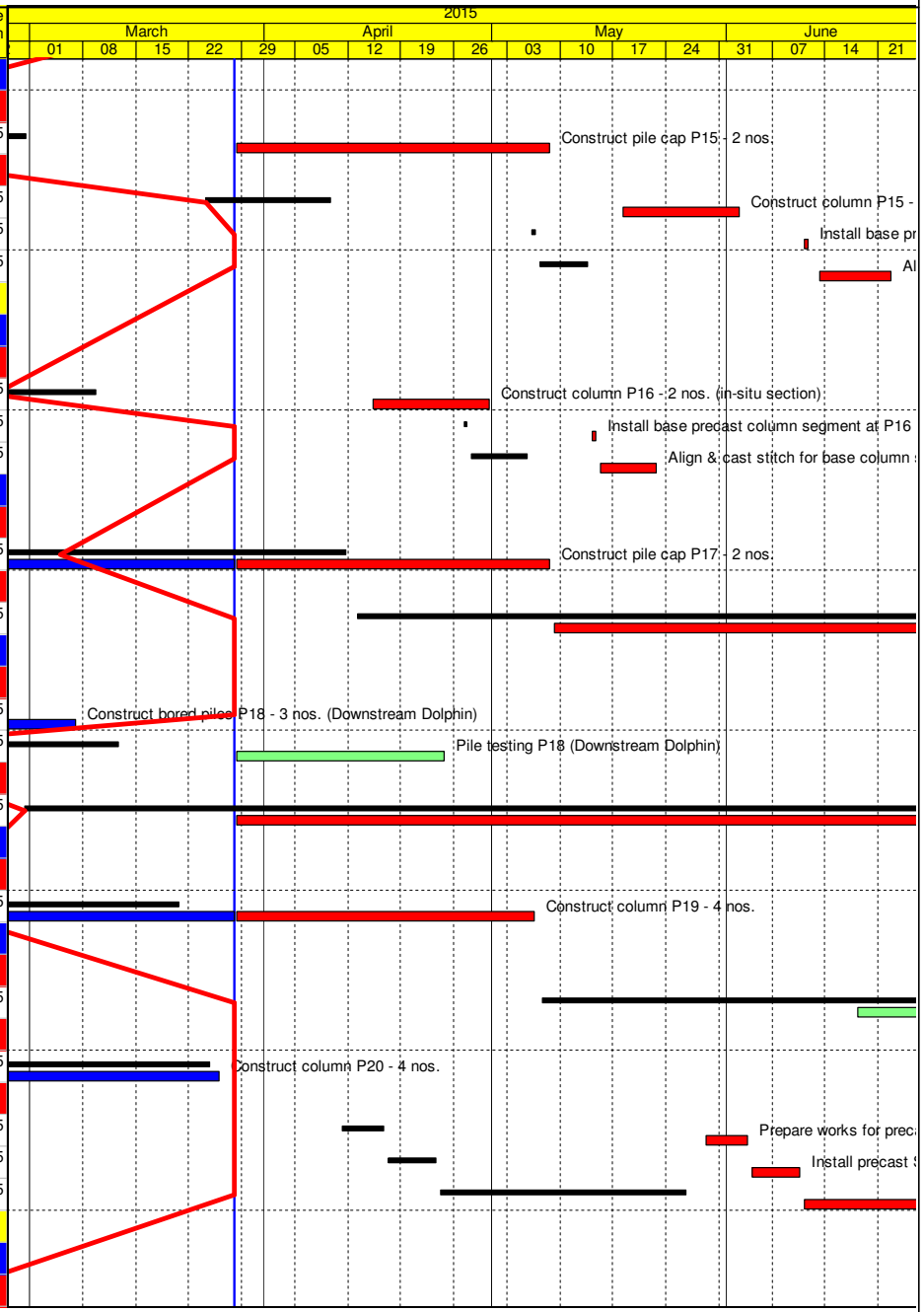
Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1502 Start	1502 Finish	DWP01e Start	DWP01e Finish
Pier P15L/R								
Pile Cap Construction								
WW2250	Construct pile cap P15 - 2 nos.	30	30	0%	28/3/15	8/5/15	21/1/15	28/2/15
Column Construction								
WW2260	Construct column P15 - 2 nos. (in-situ section)	12	12	0%	18/5/15	2/6/15	24/3/15	9/4/15
WW9200	Install base precast column segment at P15	1	1	0%	11/6/15	11/6/15	6/5/15	6/5/15
WW9202	Align & cast stitch for base column segment at P15	6	6	0%	13/6/15	22/6/15	7/5/15	13/5/15
ML03L/R 109.661m+150mx3+109.661m Navigation Channel - Stage 4 of Works								
Pier P16L/R (M.J.)								
Column Construction								
NC1100	Construct column P16 - 2 nos. (in-situ section)	12	12	0%	15/4/15	30/4/15	24/2/15	9/3/15
NC1102	Install base precast column segment at P16	1	1	0%	14/5/15	14/5/15	27/4/15	27/4/15
NC1103	Align & cast stitch for base column segment at P16	6	6	0%	15/5/15	22/5/15	28/4/15	5/5/15
Pier P17L/R								
Pile Cap Construction								
NC1200	Construct pile cap P17 - 2 nos.	60	30	50%	9/2/15 A	8/5/15	26/1/15	11/4/15
Column Construction								
NC1220	Construct column P17 - 4 nos.	92	92	0%	9/5/15	15/9/15	13/4/15	18/8/15
Pier P18L/R								
Foundation - Bored Pile								
NC1290	Construct bored piles P18 - 3 nos. (Downstream Dolphin)	20	0	100%	11/12/14 A	7/3/15 A	2/1/15	24/1/15
NC1310	Pile testing P18 (Downstream Dolphin)	28	28	0%	28/3/15	24/4/15	6/2/15	12/3/15
Column Construction								
NC1340	Construct column P18 - 4 nos.	92	92	0%	28/3/15	4/8/15	28/2/15	30/6/15
Pier P19L/R								
Column Construction								
NC1460	Construct column P19 - 4 nos.	64	28	57%	10/11/14 A	6/5/15	2/1/15	20/3/15
Pier P20L/R								
Pile Cap Construction								
NC1565	Construct dolphin P20 - 1 nos. (Upstream Dolphin)	45	45	0%	18/6/15	21/8/15	7/5/15	9/7/15
Column Construction								
NC1580	Construct column P20 - 4 nos.	92	0	100%	13/10/14 A	26/3/15 A	1/12/14	24/3/15
Pier Segment Construction								
NC1588	Prepare works for precast SOP P20 - 6 nos.	5	5	0%	29/5/15	3/6/15	11/4/15	16/4/15
NC1590	Install precast SOP P20 - 6 nos.	5	5	0%	4/6/15	10/6/15	17/4/15	23/4/15
NC1592	Insitu works for SOP P20 - 6 nos.	25	25	0%	11/6/15	17/7/15	24/4/15	26/5/15
ML04L/R 74.5mx8 - Stage 4 of Works								
Pier P21L/R (M.J.)								
Column Construction								



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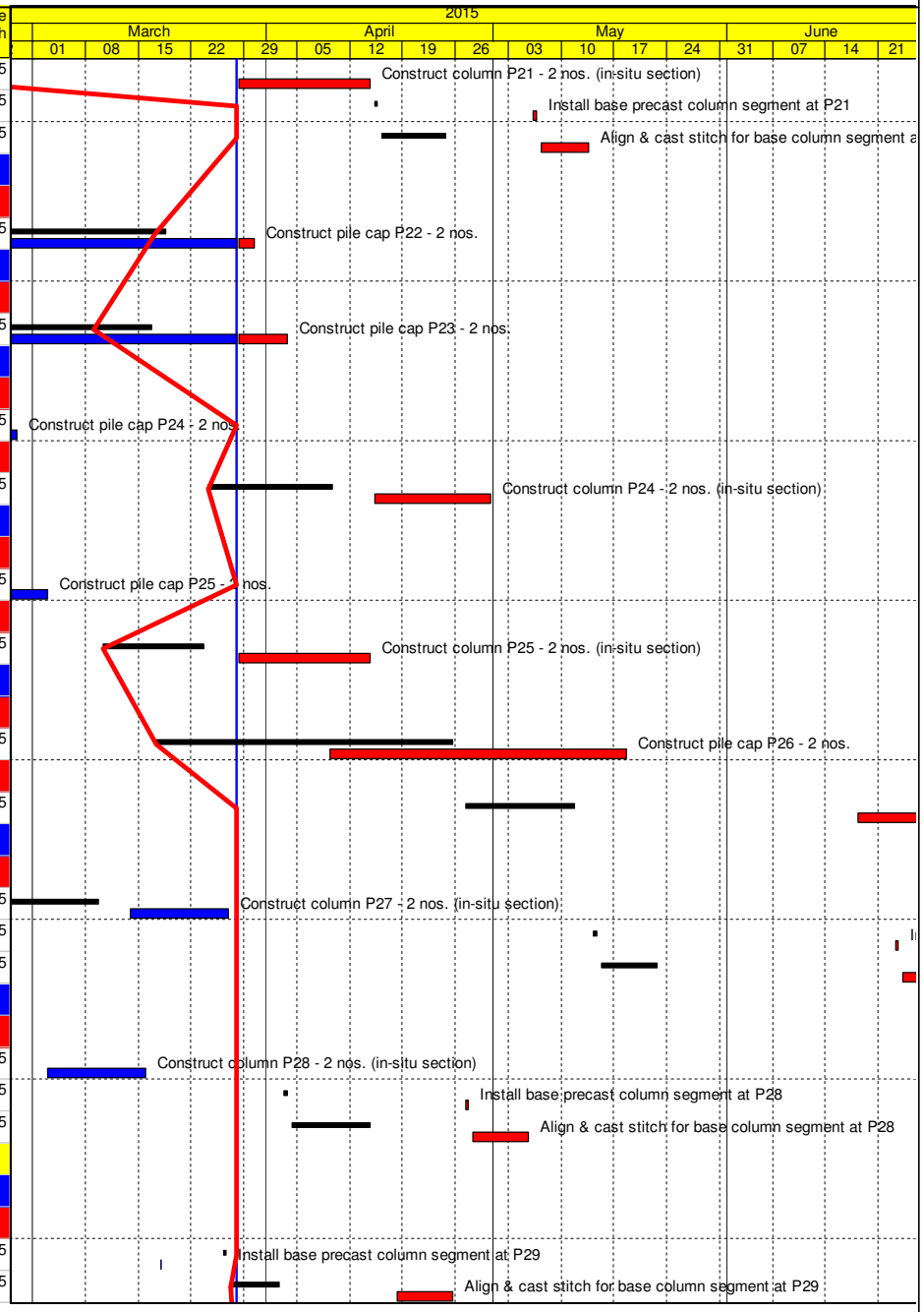
Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1502 Start	1502 Finish	DWP01e Start	DWP01e Finish
WW8670	Construct column P21 - 2 nos. (in-situ section)	12	12	0%	28/3/15	14/4/15	6/2/15	23/2/15
WW9240	Install base precast column segment at P21	1	1	0%	6/5/15	6/5/15	15/4/15	15/4/15
WW9242	Align & cast stitch for base column segment at P21	6	6	0%	7/5/15	13/5/15	16/4/15	24/4/15
Pier P22L/R								
Pile Cap Construction								
WW5050	Construct pile cap P22 - 2 nos.	30	1	96%	11/2/15 A	30/3/15	9/2/15	18/3/15
Pier P23L/R								
Pile Cap Construction								
WW5130	Construct pile cap P23 - 2 nos.	30	6	80%	11/2/15 A	3/4/15	6/2/15	16/3/15
Pier P24L/R								
Pile Cap Construction								
WW5210	Construct pile cap P24 - 2 nos.	30	0	100%	14/1/15 A	27/2/15 A	9/1/15	12/2/15
Column Construction								
WW5220	Construct column P24 - 2 nos. (in-situ section)	12	12	0%	15/4/15	30/4/15	24/3/15	9/4/15
Pier P25L/R								
Pile Cap Construction								
WW5290	Construct pile cap P25 - 2 nos.	30	0	100%	14/1/15 A	3/3/15 A	5/1/15	7/2/15
Column Construction								
WW5300	Construct column P25 - 2 nos. (in-situ section)	12	12	0%	28/3/15	14/4/15	10/3/15	23/3/15
Pier P26L/R								
Pile Cap Construction								
WW5370	Construct pile cap P26 - 2 nos.	30	30	0%	9/4/15	18/5/15	17/3/15	25/4/15
Column Construction								
WW5380	Construct column P26 - 2 nos. (in-situ section)	12	12	0%	18/6/15	7/7/15	27/4/15	11/5/15
Pier P27L/R								
Column Construction								
WW5460	Construct column P27 - 2 nos. (in-situ section)	12	0	100%	14/3/15 A	27/3/15 A	24/2/15	9/3/15
WW9360	Install base precast column segment at P27	1	1	0%	23/6/15	23/6/15	14/5/15	14/5/15
WW9362	Align & cast stitch for base column segment at P27	6	6	0%	24/6/15	2/7/15	15/5/15	22/5/15
Pier P28L/R								
Column Construction								
WW5540	Construct column P28 - 2 nos. (in-situ section)	12	0	100%	3/3/15 A	16/3/15 A	2/1/15	15/1/15
WW9380	Install base precast column segment at P28	1	1	0%	27/4/15	27/4/15	3/4/15	3/4/15
WW9382	Align & cast stitch for base column segment at P28	6	6	0%	28/4/15	5/5/15	4/4/15	14/4/15
ML05L/R 74.5mx8 - Stage 4 of Works								
Pier P29L/R (M.J.)								
Column Construction								
WW9400	Install base precast column segment at P29	1	0	100%	18/3/15 A	18/3/15 A	26/3/15	26/3/15
WW9402	Align & cast stitch for base column segment at P29	6	6	0%	18/4/15	25/4/15	27/3/15	2/4/15



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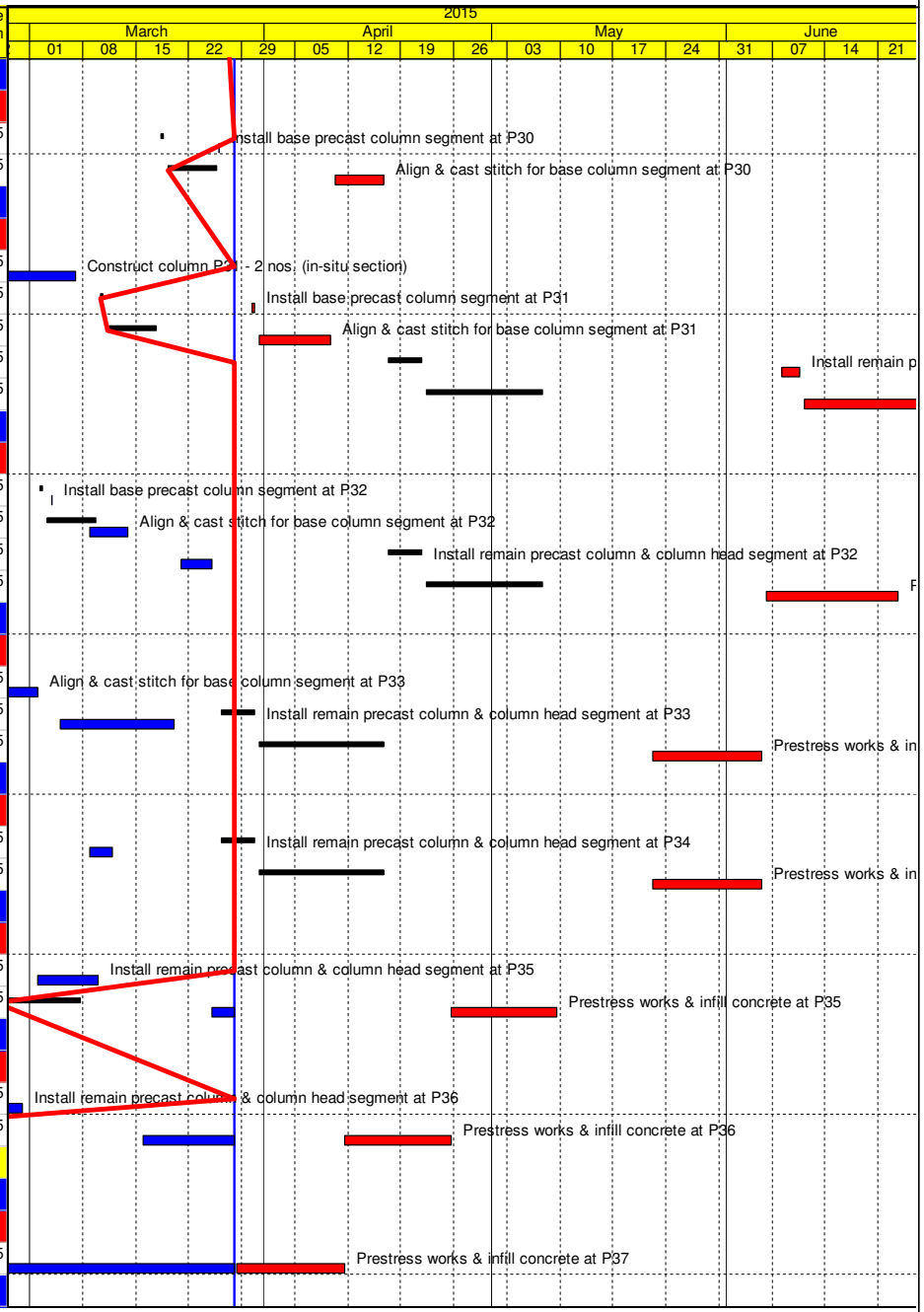
Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1502 Start	1502 Finish	DWP01e Start	DWP01e Finish
Pier P30L/R								
Column Construction								
WW9420	Install base precast column segment at P30	1	0	100%	26/3/15 A	26/3/15 A	18/3/15	18/3/15
WW9422	Align & cast stitch for base column segment at P30	6	6	0%	10/4/15	16/4/15	19/3/15	25/3/15
Pier P31L/R								
Column Construction								
WW5780	Construct column P31 - 2 nos. (in-situ section)	12	0	100%	23/2/15 A	7/3/15 A	6/2/15	23/2/15
WW9440	Install base precast column segment at P31	1	1	0%	30/3/15	30/3/15	10/3/15	10/3/15
WW9442	Align & cast stitch for base column segment at P31	6	6	0%	31/3/15	9/4/15	11/3/15	17/3/15
WW9444	Install remain precast column & column head segment at P31	3	3	0%	8/6/15	10/6/15	17/4/15	21/4/15
WW9450	Prestress works & infill concrete at P31	12	12	0%	11/6/15	29/6/15	22/4/15	7/5/15
Pier P32L/R								
Column Construction								
WW9460	Install base precast column segment at P32	1	0	100%	4/3/15 A	4/3/15 A	2/3/15	2/3/15
WW9462	Align & cast stitch for base column segment at P32	6	0	100%	9/3/15 A	14/3/15 A	3/3/15	9/3/15
WW9464	Install remain precast column & column head segment at P32	3	0	100%	21/3/15 A	25/3/15 A	17/4/15	21/4/15
WW9470	Prestress works & infill concrete at P32	12	12	0%	6/6/15	23/6/15	22/4/15	7/5/15
Pier P33L/R								
Column Construction								
WW9482	Align & cast stitch for base column segment at P33	6	0	100%	23/2/15 A	2/3/15 A	13/2/15	23/2/15
WW9484	Install remain precast column & column head segment at P33	3	0	100%	5/3/15 A	20/3/15 A	26/3/15	30/3/15
WW9490	Prestress works & infill concrete at P33	12	12	0%	22/5/15	5/6/15	31/3/15	16/4/15
Pier P34L/R								
Column Construction								
WW9504	Install remain precast column & column head segment at P34	3	0	100%	9/3/15 A	12/3/15 A	26/3/15	30/3/15
WW9510	Prestress works & infill concrete at P34	12	12	0%	22/5/15	5/6/15	31/3/15	16/4/15
Pier P35L/R								
Column Construction								
WW9524	Install remain precast column & column head segment at P35	3	0	100%	2/3/15 A	10/3/15 A	16/2/15	18/2/15
WW9530	Prestress works & infill concrete at P35	12	11	10%	25/3/15 A	9/5/15	23/2/15	7/3/15
Pier P36L/R								
Column Construction								
WW9544	Install remain precast column & column head segment at P36	3	0	100%	13/1/15 A	28/2/15 A	28/1/15	30/1/15
WW9550	Prestress works & infill concrete at P36	12	10	15%	16/3/15 A	25/4/15	31/1/15	13/2/15
ML06L/R 74.5mx8 - Stage 4 of Works								
Pier P37L/R (M.J.)								
Column Construction								
WW9570	Prestress works & infill concrete at P37	12	10	20%	9/2/15 A	11/4/15	14/1/15	27/1/15
Pier 38L/R								



DWP_01d Programme
Actual Work
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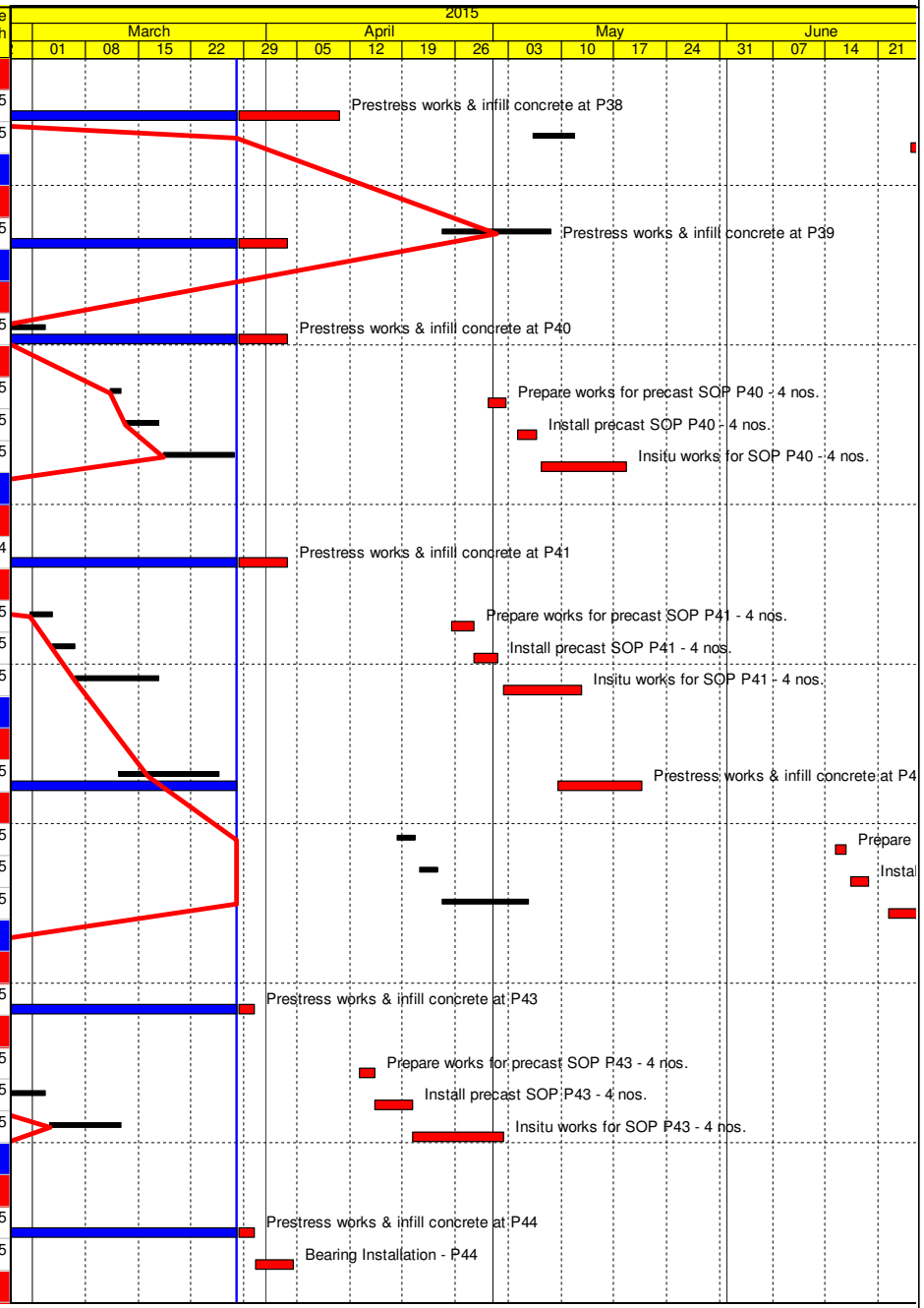
Column Construction								
WW9590	Prestress works & infill concrete at P38	12	9	25%	4/2/15 A	10/4/15	2/1/15	16/1/15
WW9592	Bearing Installation - P38	5	5	0%	25/6/15	2/7/15	6/5/15	11/5/15
Pier 39L/R								
Column Construction								
WW9610	Prestress works & infill concrete at P39	12	6	50%	21/12/14 A	3/4/15	24/4/15	8/5/15
Pier 40L/R								
Column Construction								
WW9630	Prestress works & infill concrete at P40	12	6	50%	12/12/14 A	3/4/15	13/2/15	2/3/15
Pier Segment Construction								
WW6508	Prepare works for precast SOP P40 - 4 nos.	2	2	0%	30/4/15	2/5/15	11/3/15	12/3/15
WW6510	Install precast SOP P40 - 4 nos.	3	3	0%	4/5/15	6/5/15	13/3/15	17/3/15
WW6512	Insitu works for SOP P40 - 4 nos.	9	9	0%	7/5/15	18/5/15	18/3/15	27/3/15
Pier 41L/R								
Column Construction								
WW9650	Prestress works & infill concrete at P41	12	6	50%	26/11/14 A	3/4/15	12/12/14	27/12/14
Pier Segment Construction								
WW6588	Prepare works for precast SOP P41 - 4 nos.	2	2	0%	25/4/15	28/4/15	28/2/15	3/3/15
WW6590	Install precast SOP P41 - 4 nos.	3	3	0%	28/4/15	1/5/15	3/3/15	6/3/15
WW6592	Insitu works for SOP P41 - 4 nos.	9	9	0%	2/5/15	12/5/15	6/3/15	17/3/15
Pier 42L/R								
Column Construction								
WW9670	Prestress works & infill concrete at P42	12	8	30%	5/2/15 A	20/5/15	12/3/15	25/3/15
Pier Segment Construction								
WW6668	Prepare works for precast SOP P42 - 4 nos.	2	2	0%	15/6/15	16/6/15	18/4/15	20/4/15
WW6670	Install precast SOP P42 - 4 nos.	3	3	0%	17/6/15	19/6/15	21/4/15	23/4/15
WW6672	Insitu works for SOP P42 - 4 nos.	9	9	0%	22/6/15	3/7/15	24/4/15	5/5/15
Pier 43L/R								
Column Construction								
WW9690	Prestress works & infill concrete at P43	12	1	90%	15/11/14 A	30/3/15	18/12/14	3/1/15
Pier Segment Construction								
WW6748	Prepare works for precast SOP P43 - 4 nos.	2	2	0%	13/4/15	15/4/15	14/2/15	16/2/15
WW6750	Install precast SOP P43 - 4 nos.	3	3	0%	15/4/15	20/4/15	17/2/15	2/3/15
WW6752	Insitu works for SOP P43 - 4 nos.	9	9	0%	20/4/15	2/5/15	3/3/15	12/3/15
Pier 44L/R								
Column Construction								
WW9710	Prestress works & infill concrete at P44	12	1	90%	1/11/14 A	30/3/15	13/1/15	27/1/15
WW9712	Bearing Installation - P44	5	5	0%	30/3/15	4/4/15	27/1/15	2/2/15
Pier Segment Construction								



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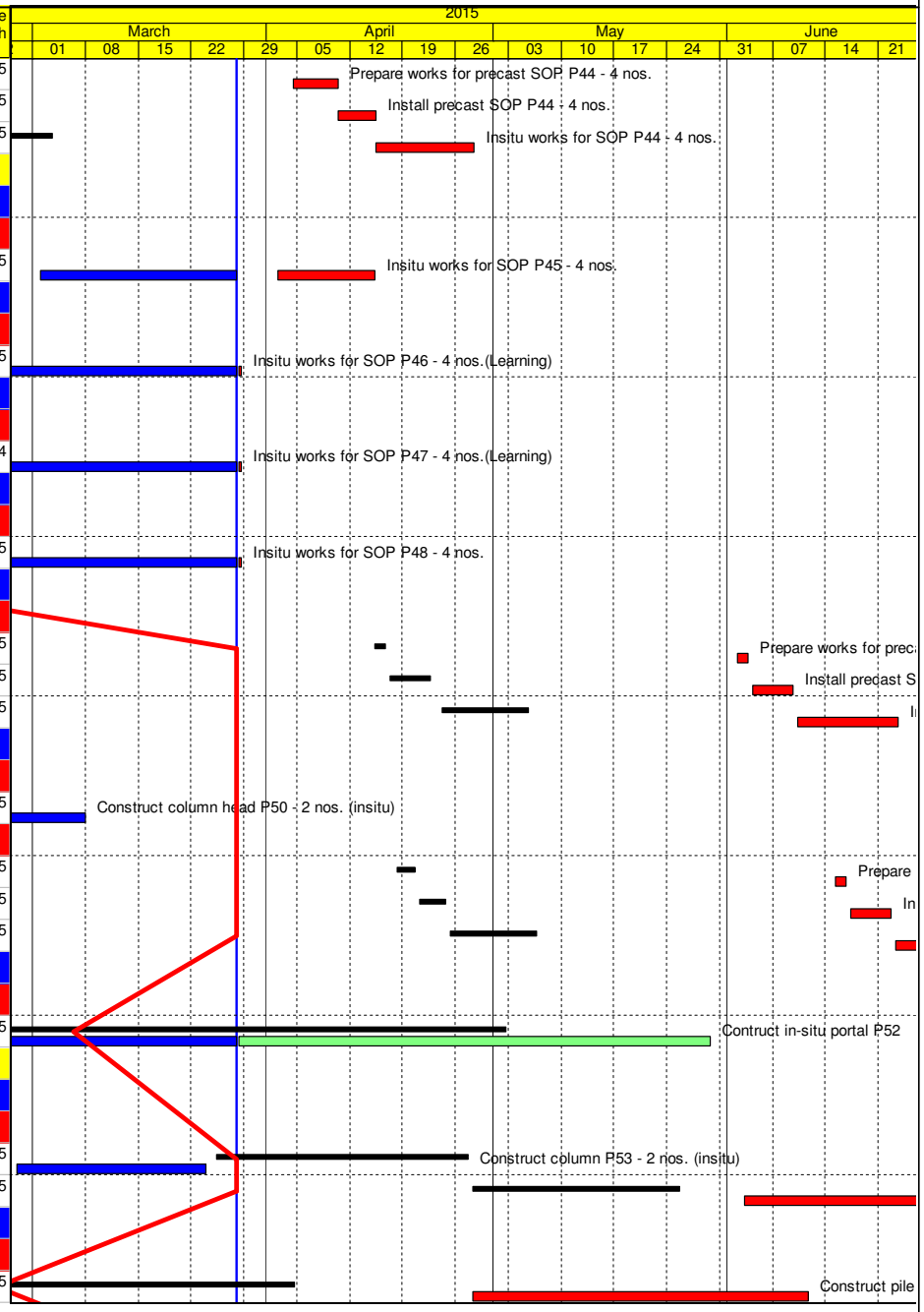
WW6828	Prepare works for precast SOP P44 - 4 nos.	2	2	0%	4/4/15	10/4/15	10/2/15	12/2/15
WW6830	Install precast SOP P44 - 4 nos.	3	3	0%	10/4/15	15/4/15	12/2/15	17/2/15
WW6832	Insitu works for SOP P44 - 4 nos.	9	9	0%	15/4/15	28/4/15	17/2/15	3/3/15
ML07L/R 73.396mx8 - Stage 4 of Works								
Pier P45L/R (M.J.)								
Pier Segment Construction								
WW6912	Insitu works for SOP P45 - 4 nos.	9	8	15%	2/3/15 A	15/4/15	6/2/15	16/2/15
Pier P46L/R								
Pier Segment Construction								
WW6992	Insitu works for SOP P46 - 4 nos.(Learning)	26	1	97%	1/11/14 A	28/3/15	1/12/14	2/1/15
Pier P47L/R								
Pier Segment Construction								
WW7072	Insitu works for SOP P47 - 4 nos.(Learning)	18	1	95%	29/9/14 A	28/3/15	13/11/14	3/12/14
Pier P48L/R								
Pier Segment Construction								
WW7152	Insitu works for SOP P48 - 4 nos.	9	1	90%	12/1/15 A	28/3/15	2/1/15	12/1/15
Pier P49L/R								
Pier Segment Construction								
WW8688	Prepare works for precast SOP P49 - 4 nos.	2	2	0%	2/6/15	3/6/15	15/4/15	16/4/15
WW8690	Install precast SOP P49 - 4 nos.	4	4	0%	4/6/15	9/6/15	17/4/15	22/4/15
WW8692	Insitu works for SOP P49 - 4 nos.	9	9	0%	10/6/15	23/6/15	24/4/15	5/5/15
Pier P50L/R								
Column Construction								
WW10097	Construct column head P50 - 2 nos. (insitu)	21	0	100%	22/1/15 A	8/3/15 A	16/1/15	9/2/15
Pier Segment Construction								
WW8698	Prepare works for precast SOP P50 - 4 nos.	2	2	0%	15/6/15	16/6/15	18/4/15	20/4/15
WW8700	Install precast SOP P50 - 4 nos..	4	4	0%	17/6/15	22/6/15	21/4/15	24/4/15
WW8702	Insitu works for SOP P50 - 4 nos.	9	9	0%	23/6/15	4/7/15	25/4/15	6/5/15
Pier P52L/R								
In-situ Portal/SOP Construction								
WW7230	Contruct in-situ portal P52	90	45	50%	20/12/14 A	29/5/15	8/1/15	2/5/15
ML08L/R 70mx6 - Stage 4 of Works								
Pier P53L/R (M.J.)								
Column Construction								
WW10147	Construct column P53 - 2 nos. (insitu)	24	0	100%	27/2/15 A	24/3/15 A	25/3/15	27/4/15
WW10157	Construct column head P53 - 2 nos. (insitu)	21	21	0%	3/6/15	2/7/15	28/4/15	25/5/15
Pier P54L/R								
Pile Cap Construction								
WW7580	Construct pile cap P54 - 2 nos.	35	35	0%	28/4/15	11/6/15	24/2/15	4/4/15



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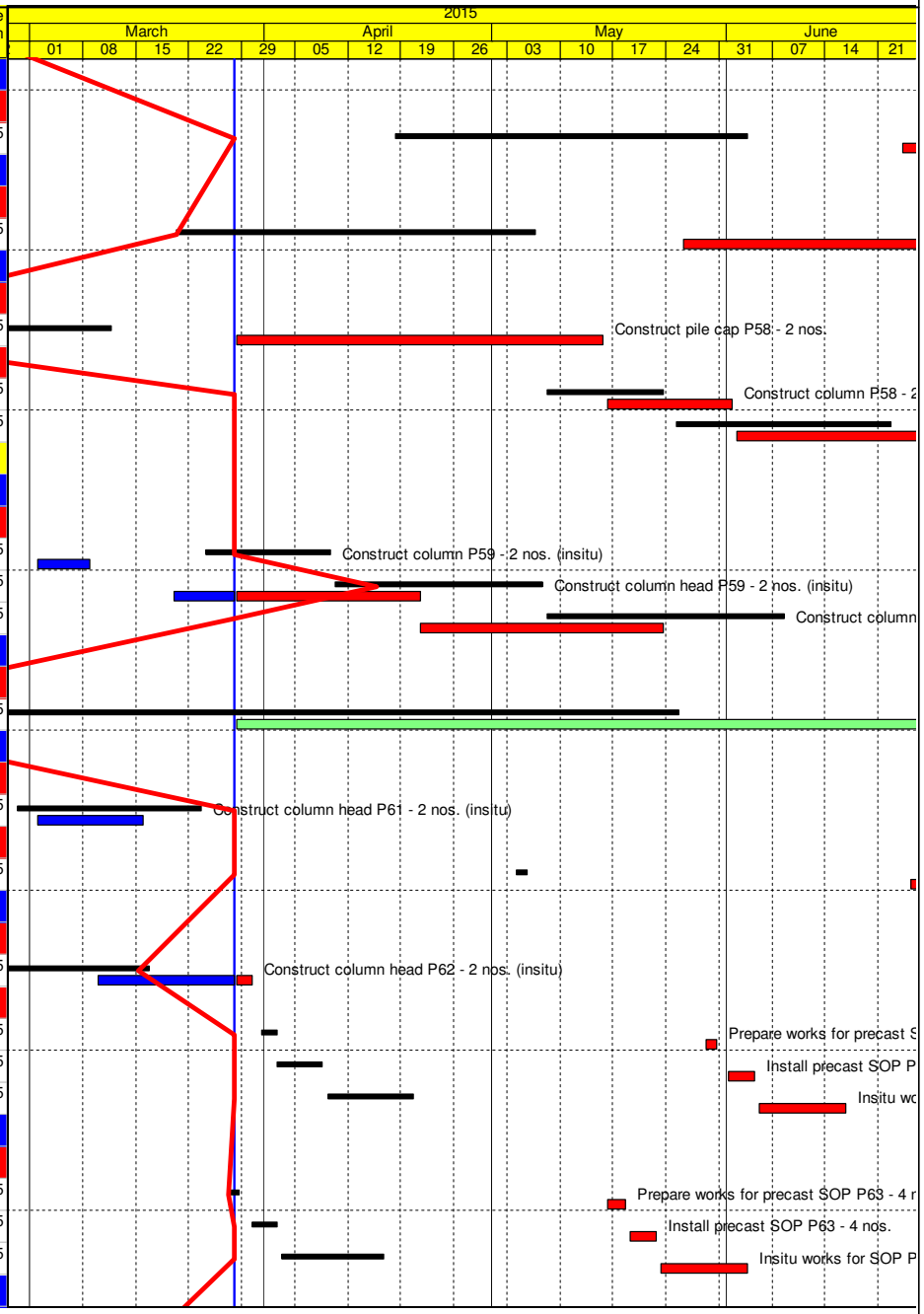
Pier P55L/R								
Pile Cap Construction								
WW7660	Construct pile cap P55 - 2 nos.	35	35	0%	24/6/15	12/8/15	18/4/15	3/6/15
Pier P57L/R								
Pile Cap Construction								
WW7820	Construct pile cap P57 - 2 nos.	35	35	0%	26/5/15	14/7/15	20/3/15	6/5/15
Pier P58L/R								
Pile Cap Construction								
WW7900	Construct pile cap P58 - 2 nos.	35	35	0%	28/3/15	15/5/15	27/1/15	11/3/15
Column Construction								
WW10247	Construct column P58 - 2 nos. (insitu)	12	12	0%	16/5/15	1/6/15	8/5/15	23/5/15
WW10257	Construct column head P58 - 2 nos. (insitu)	21	21	0%	2/6/15	30/6/15	25/5/15	22/6/15
ML09L/R 73.396Mx8 - Stage 4 of Works								
Pier P59L/R (M.J.)								
Column Construction								
WW10267	Construct column P59 - 2 nos. (insitu)	12	0	100%	2/3/15 A	9/3/15 A	24/3/15	9/4/15
WW10277	Construct column head P59 - 2 nos. (insitu)	21	17	20%	20/3/15 A	21/4/15	10/4/15	7/5/15
WW8780	Construct column P59N/S (Turnaround Facility) - 2 nos.	24	24	0%	21/4/15	23/5/15	8/5/15	8/6/15
Pier P60L/R								
In-situ Portal/SOP Construction								
WW8070	Contruct in-situ portal P60	90	90	0%	28/3/15	31/7/15	28/1/15	25/5/15
Pier P61L/R								
Column Construction								
WW10317	Construct column head P61 - 2 nos. (insitu)	21	0	100%	2/3/15 A	16/3/15 A	27/2/15	23/3/15
Pier Segment Construction								
WW8228	Prepare works for precast SOP P61 - 4 nos.	2	2	0%	25/6/15	27/6/15	4/5/15	5/5/15
Pier P62L/R								
Column Construction								
WW10337	Construct column head P62 - 2 nos. (insitu)	21	1	95%	10/3/15 A	30/3/15	17/2/15	16/3/15
Pier Segment Construction								
WW8238	Prepare works for precast SOP P62 - 4 nos.	2	2	0%	29/5/15	30/5/15	31/3/15	2/4/15
WW8240	Install precast SOP P62 - 4 nos.	4	4	0%	1/6/15	4/6/15	2/4/15	8/4/15
WW8242	Insitu works for SOP P62 - 4 nos.	9	9	0%	5/6/15	16/6/15	9/4/15	20/4/15
Pier P63L/R								
Pier Segment Construction								
WW8318	Prepare works for precast SOP P63 - 4 nos.	2	2	0%	16/5/15	18/5/15	27/3/15	28/3/15
WW8320	Install precast SOP P63 - 4 nos.	4	4	0%	19/5/15	22/5/15	30/3/15	2/4/15
WW8322	Insitu works for SOP P63 - 4 nos.	9	9	0%	23/5/15	3/6/15	3/4/15	16/4/15
Pier P64L/R								



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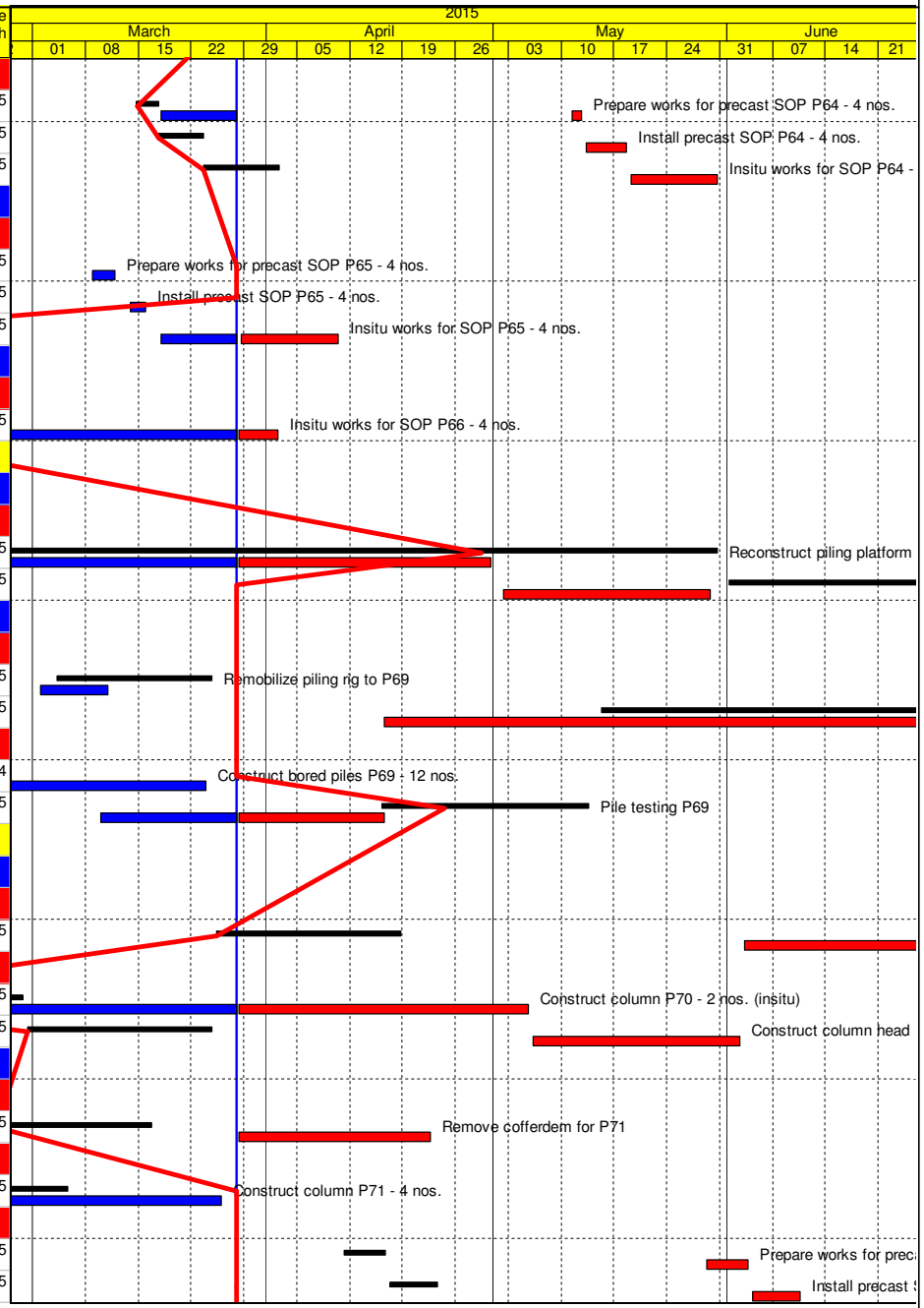
Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1502 Start	1502 Finish	DWP01e Start	DWP01e Finish
Pier Segment Construction								
WW8398	Prepare works for precast SOP P64 - 4 nos.	2	2	10%	18/3/15 A	12/5/15	14/3/15	17/3/15
WW8400	Install precast SOP P64 - 4 nos.	4	4	0%	13/5/15	18/5/15	17/3/15	23/3/15
WW8402	Insitu works for SOP P64 - 4 nos.	9	9	0%	19/5/15	30/5/15	23/3/15	2/4/15
Pier P65L/R								
Pier Segment Construction								
WW8478	Prepare works for precast SOP P65 - 4 nos.	2	0	100%	9/3/15 A	12/3/15 A	24/1/15	27/1/15
WW8480	Install precast SOP P65 - 4 nos.	4	0	100%	14/3/15 A	16/3/15 A	27/1/15	2/2/15
WW8482	Insitu works for SOP P65 - 4 nos.	9	8	15%	18/3/15 A	10/4/15	2/2/15	12/2/15
Pier P66L/R								
Pier Segment Construction								
WW8562	Insitu works for SOP P66 - 4 nos.	9	5	50%	12/2/15 A	2/4/15	23/1/15	2/2/15
ML10L/R 115m+180m+115m - Stage 4 of Works								
Pier P68L/R								
Restart P68 & P69								
CL1020	Reconstruct piling platform for P68	90	24	73.33%	12/1/15 A	30/4/15	2/2/15	30/5/15
CL1030	Remobilization & jacket installation	21	21	0%	2/5/15	29/5/15	1/6/15	29/6/15
Pier P69L/R								
Temporary Works								
AC1123	Remobilize piling rig to P69	18	0	100%	2/3/15 A	11/3/15 A	4/3/15	24/3/15
AC1135	Install cofferdem for pile cap construction - P69 - 2 nos.	90	90	0%	16/4/15	20/8/15	15/5/15	17/9/15
Foundation - Bored Pile								
AC2480	Construct bored piles P69 - 12 nos.	64	0	100%	16/4/14 A	24/3/15 A	11/7/14	13/10/14
AC2490	Pile testing P69	28	20	30%	10/3/15 A	16/4/15	16/4/15	13/5/15
ML11L/R 109m+165mx2+109m - Stage 4 of Works								
Pier P70L/R (M.J.)								
Temporary Works								
AC1180	Remove cofferdem for pier P70	18	18	0%	3/6/15	27/6/15	25/3/15	18/4/15
Column Construction								
AC1204	Construct column P70 - 2 nos. (insitu)	36	27	25%	14/1/15 A	5/5/15	14/1/15	27/2/15
AC1206	Construct column head P70 - 2 nos. (insitu)	21	21	0%	6/5/15	2/6/15	28/2/15	24/3/15
Pier P71L/R								
Temporary Works								
AC1250	Remove cofferdem for P71	18	18	0%	28/3/15	22/4/15	24/2/15	16/3/15
Column Construction								
AC1300	Construct column P71 - 4 nos.	50	0	100%	10/11/14 A	26/3/15 A	3/1/15	5/3/15
Pier Segment Construction								
AC1308	Prepare works for precast SOP P71 - 6 nos.	5	5	0%	29/5/15	3/6/15	11/4/15	16/4/15
AC1310	Install precast SOP P71 - 6 nos.	5	5	0%	4/6/15	10/6/15	17/4/15	23/4/15



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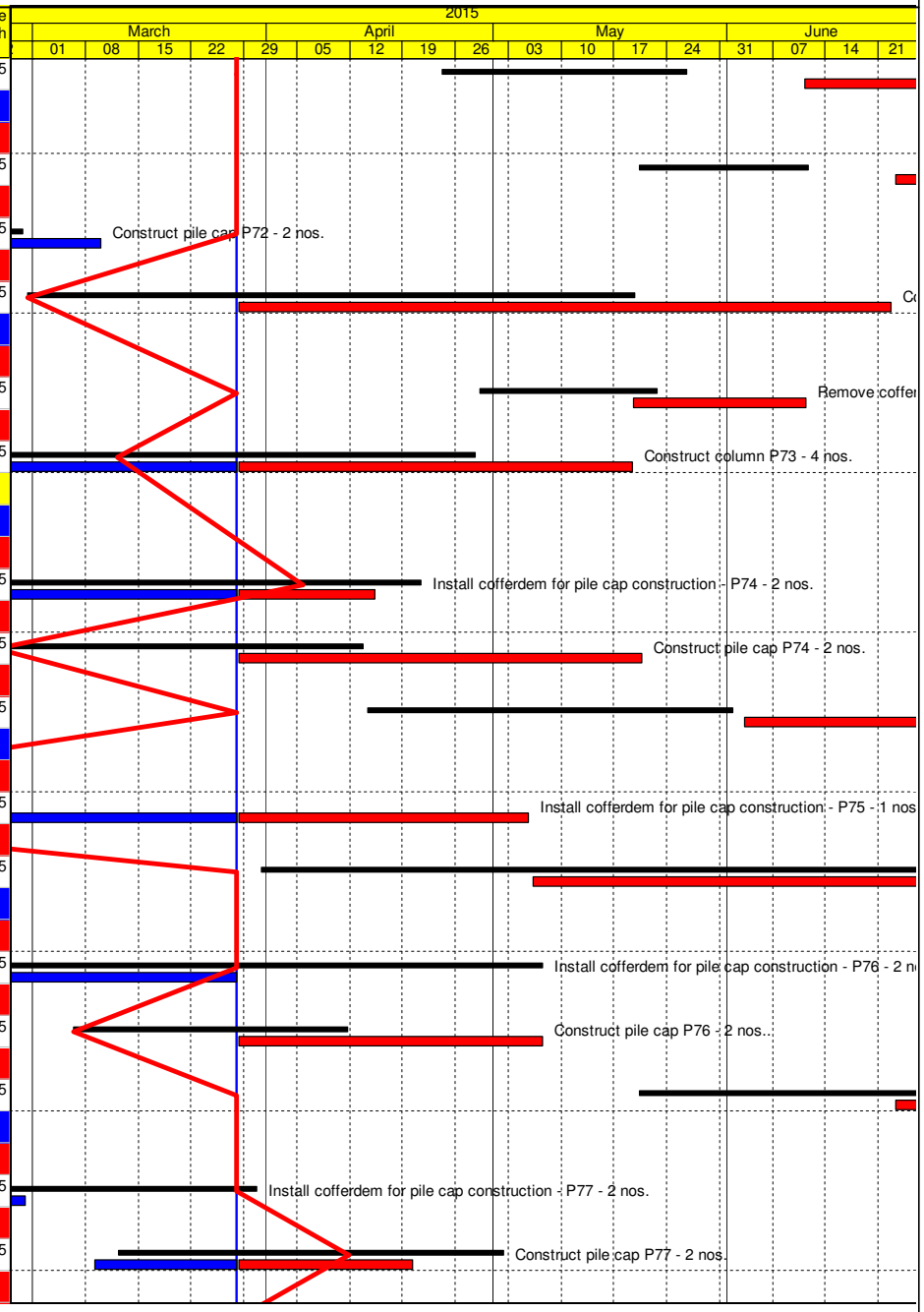
AC1312	Insitu works for SOP P71 - 6 nos.	25	25	0%	11/6/15	17/7/15	24/4/15	26/5/15
Pier P72L/R								
Temporary Works								
AC1340	Remove cofferdem for pier P72	18	18	0%	23/6/15	17/7/15	20/5/15	11/6/15
Pile Cap Construction								
AC1380	Construct pile cap P72 - 2 nos.	32	0	100%	19/1/15 A	10/3/15 A	17/1/15	27/2/15
Column Construction								
AC1390	Construct column P72 - 4 nos.	62	62	0%	28/3/15	22/6/15	28/2/15	19/5/15
Pier P73L/R								
Temporary Works								
AC1430	Remove cofferdem for pier P73	18	18	0%	19/5/15	11/6/15	29/4/15	22/5/15
Column Construction								
AC1480	Construct column P73 - 4 nos.	50	38	25%	24/2/15 A	19/5/15	24/2/15	28/4/15
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.	174	12	93%	8/8/14 A	15/4/15	9/9/14	21/4/15
Pile Cap Construction								
AC1560	Construct pile cap P74 - 2 nos.	39	39	0%	28/3/15	20/5/15	24/2/15	13/4/15
Column Construction								
AC2676	Construct column P74 - 2 nos. (insitu)	36	36	0%	3/6/15	23/7/15	14/4/15	1/6/15
Pier P75L/R								
Temporary Works								
AC1590	Install cofferdem for pile cap construction - P75 - 1 nos.	120	27	77.5%	15/7/14 A	5/5/15	9/9/14	7/2/15
Foundation - Bored Pile								
AC2736	Construct bored piles P75 - 8 nos.	90	90	0%	6/5/15	8/9/15	31/3/15	4/8/15
Pier P76L/R								
Temporary Works								
AC1680	Install cofferdem for pile cap construction - P76 - 2 nos.	170	0	100%	1/9/14 A	28/3/15 A	3/10/14	7/5/15
Pile Cap Construction								
AC1740	Construct pile cap P76 - 2 nos..	29	29	0%	28/3/15*	7/5/15	6/3/15	11/4/15
Column Construction								
AC1750	Construct column P76 - 4 nos.	50	50	0%	23/6/15	1/9/15	20/5/15	29/7/15
Pier P77L/R								
Temporary Works								
AC1770	Install cofferdem for pile cap construction - P77 - 2 nos.	160	0	100%	1/9/14 A	28/2/15 A	9/9/14	30/3/15
Pile Cap Construction								
AC1820	Construct pile cap P77 - 2 nos.	38	15	60%	9/3/15 A	20/4/15	12/3/15	2/5/15
Column Construction								



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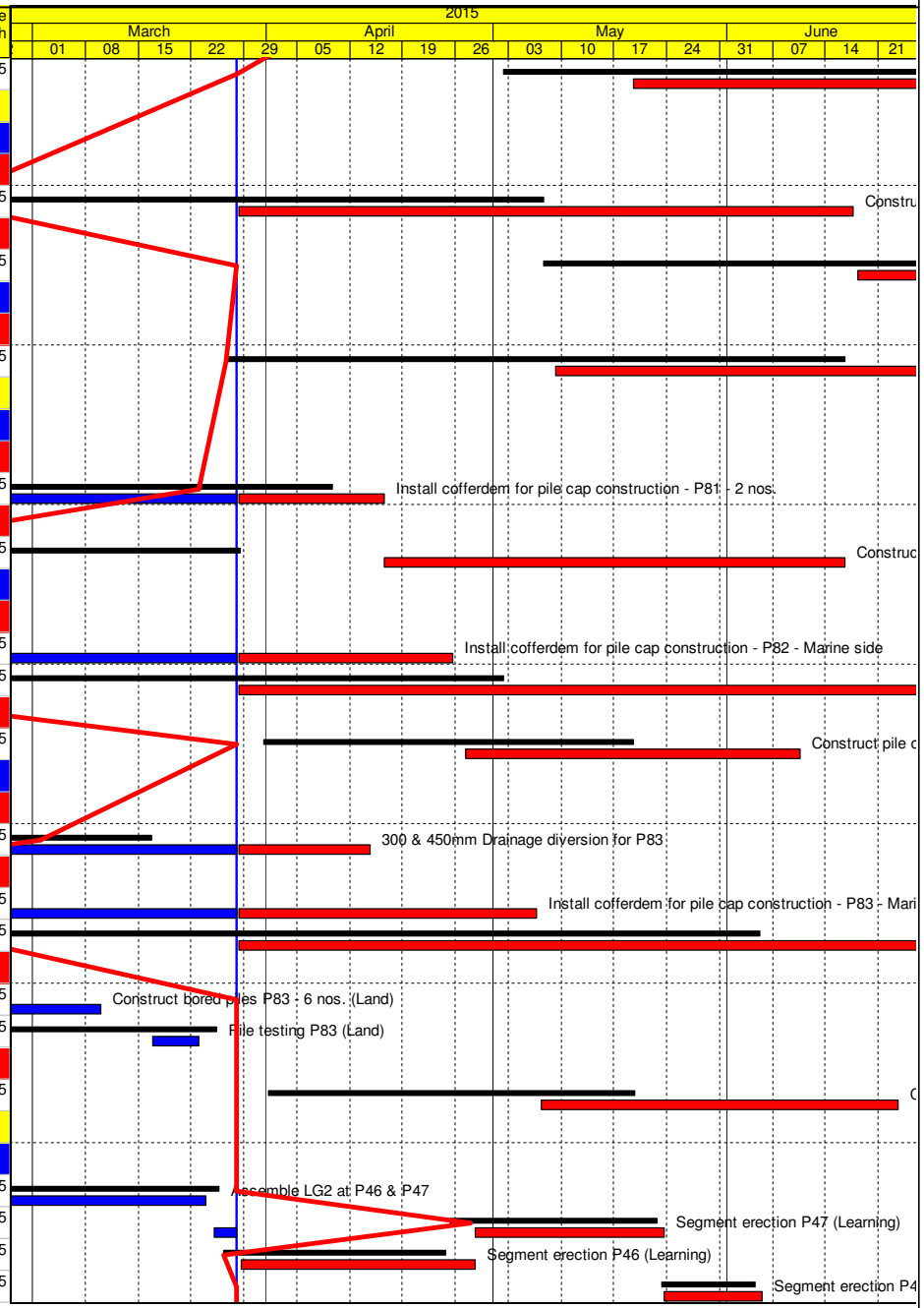
AC1830	Construct column P77 - 4 nos.	62	62	0%	19/5/15	14/8/15	2/5/15	28/7/15
ML13L/R 115m+180m+115m - Stage 4 of Works								
Pier P79L/R								
Pile Cap Construction								
AC1990	Construct pile cap P79 - 2 nos.	60	60	0%	28/3/15*	17/6/15	16/2/15	7/5/15
Column Construction								
AC2000	Construct column P79 - 4 nos.	50	50	0%	18/6/15	28/8/15	7/5/15	16/7/15
Pier P80L/R								
Pile Cap Construction								
AC2070	Construct pile cap P80 - 2 nos.	60	60	0%	9/5/15	31/7/15	26/3/15	16/6/15
ML14L/R 115m+180m+100.561m - Stage 4 of Works								
Pier P81L/R (M.J.)								
Temporary Works								
AC2100	Install cofferdem for pile cap construction - P81 - 2 nos.	55	14	75%	21/11/14 A	16/4/15	29/1/15	9/4/15
Pile Cap Construction								
AC2160	Construct pile cap P81 - 2 nos.	45	45	0%	16/4/15	16/6/15	31/1/15	28/3/15
Pier P82L/R								
Temporary Works								
AC2225	Install cofferdem for pile cap construction - P82 - Marine side	80	20	75%	24/9/14 A	25/4/15	31/10/14	4/2/15
AC2227	Install cofferdem for pile cap construction - P82 - Land side	80	80	0%	28/3/15	17/7/15	19/1/15	2/5/15
Pile Cap Construction								
AC2260	Construct pile cap P82 - Marine side	35	35	0%	27/4/15	10/6/15	31/3/15	19/5/15
Pier P83L/R								
Utilities Diversion								
AC2470	300 & 450mm Drainage diversion for P83	60	12	80%	15/12/14 A	14/4/15	2/1/15	16/3/15
Temporary Works								
AC2297	Install cofferdem for pile cap construction - P83 - Marine side	80	28	65%	1/10/14 A	6/5/15	31/10/14	4/2/15
AC2298	Install cofferdem for pile cap construction - P83 - Land side	80	80	0%	28/3/15	17/7/15	18/2/15	5/6/15
Foundation - Bored Pile								
AC2510	Construct bored piles P83 - 6 nos. (Land)	60	0	100%	22/11/14 A	10/3/15 A	1/12/14	11/2/15
AC2666	Pile testing P83 (Land)	28	0	100%	17/3/15 A	23/3/15 A	18/2/15	25/3/15
Pile Cap Construction								
AC2360	Construct pile cap P83 - Marine side	35	35	0%	7/5/15	23/6/15	1/4/15	19/5/15
Deck Construction between HKSAR Boundary and Landing Point on Airport Channel								
Segment Erection - Launching Girder								
DC1070	Assemble LG2 at P46 & P47	50	0	100%	16/1/15 A	24/3/15 A	23/1/15	25/3/15
DC1075	Segment erection P47 (Learning)	21	19	10%	25/3/15 A	23/5/15	25/4/15	22/5/15
DC1100	Segment erection P46 (Learning)	21	21	0%	28/3/15	28/4/15	26/3/15	24/4/15
DC1110	Segment erection P45 MJ	10	10	0%	23/5/15	5/6/15	23/5/15	4/6/15



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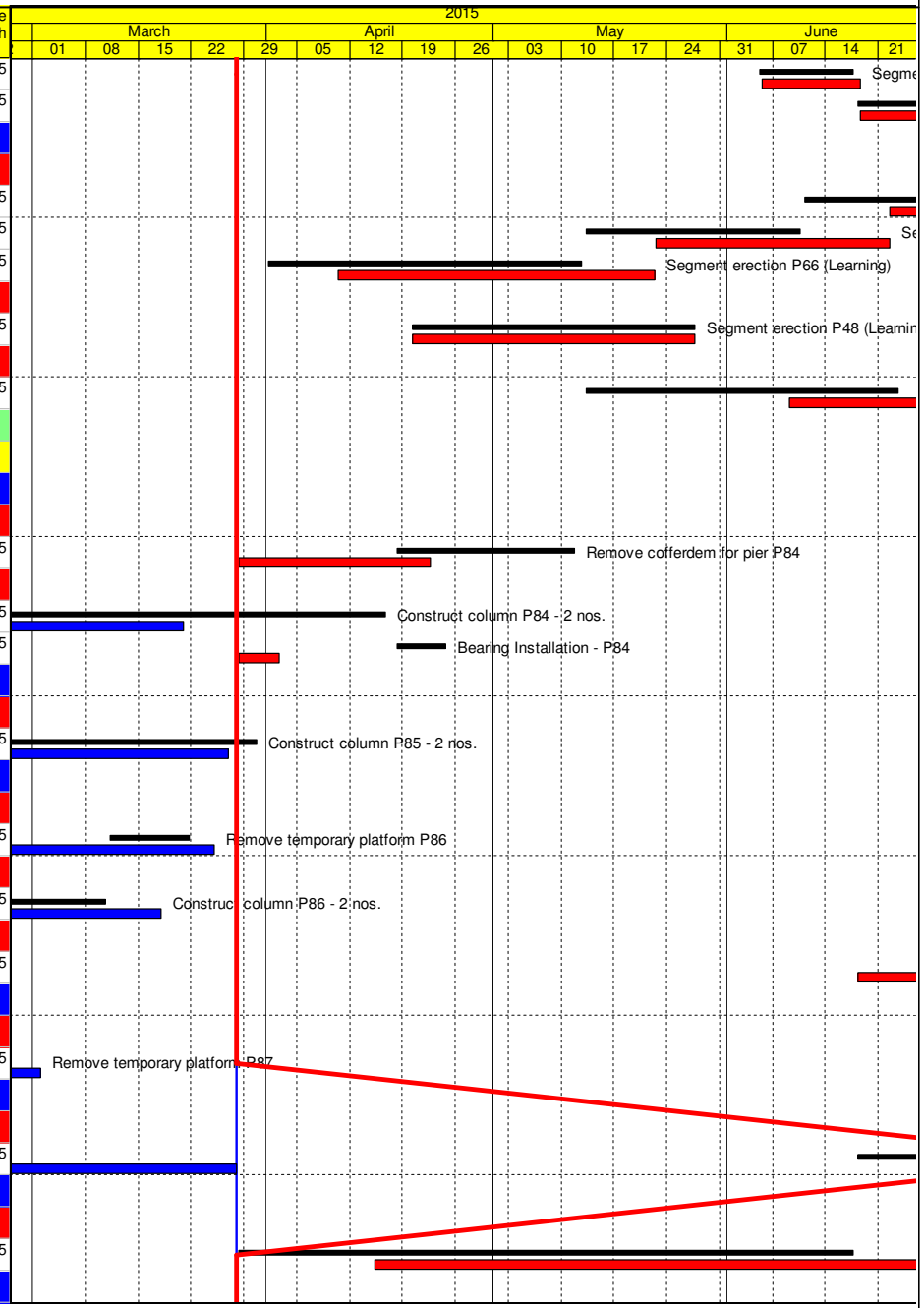
DC1120	Segment erection P44	10	10	0%	5/6/15	18/6/15	5/6/15	17/6/15
DC1130	Segment erection P43	10	10	0%	18/6/15	4/7/15	18/6/15	3/7/15
Segment Erection - Lifting Frame								
Lifting Frame 1 (LF1)								
DC1860	Segment erection P64	14	14	0%	22/6/15	15/7/15	11/6/15	3/7/15
DC1880	Segment erection P65 (Learning)	21	21	0%	22/5/15	22/6/15	13/5/15	10/6/15
DC1900	Segment erection P66 (Learning)	30	30	0%	10/4/15*	22/5/15	1/4/15	12/5/15
Lifting Frame 2 (LF2)								
DC1105	Segment erection P48 (Learning)	28	28	0%	20/4/15*	27/5/15	20/4/15	27/5/15
Lifting Frame 4 (LF4)								
DC1840	Segment erection P63 (Learning)	30	30	0%	9/6/15	23/7/15	13/5/15	23/6/15
Viaduct between Landing Point on Airport Island and Scenic Hill								
ML15L/R 43m+65mx6+37m - Stage 5 of Works								
Pier P84L/R (M.J.)								
Temporary Works								
AI1080	Remove cofferdem for pier P84	18	18	0%	28/3/15	22/4/15	18/4/15	11/5/15
Column Construction								
AI1060	Construct column P84 - 2 nos.	84	0	100%	24/12/14 A	21/3/15 A	2/1/15	16/4/15
AI1065	Bearing Installation - P84	5	5	0%	28/3/15	2/4/15	18/4/15	24/4/15
Pier P85L/R								
Column Construction								
AI1140	Construct column P85 - 2 nos.	72	0	100%	8/1/15 A	27/3/15 A	2/1/15	30/3/15
Pier P86L/R								
Temporary Works								
AI3310	Remove temporary platform P86	10	0	100%	11/2/15 A	25/3/15 A	11/3/15	21/3/15
Column Construction								
AI1210	Construct column P86 - 2 nos.	50	0	100%	2/1/15 A	18/3/15 A	8/1/15	10/3/15
In-situ Portal/T-pier Construction								
AI1220	In-situ portal P86 - 1 nos.	60	60	0%	18/6/15	11/9/15	10/7/15	3/10/15
Pier P87L/R								
Temporary Works								
AI3320	Remove temporary platform P87	10	0	100%	9/2/15 A	2/3/15 A	31/1/15	12/2/15
Pier P88L/R								
In-situ Portal/T-pier Construction								
AI1360	In-situ portal P88 - 1 nos.	60	36	40%	30/1/15 A	22/8/15	18/6/15	11/9/15
Pier P89L/R								
In-situ Portal/T-pier Construction								
AI1430	In-situ portal P89 - 1 nos.	60	60	0%	15/4/15	7/7/15	28/3/15	17/6/15
Pier P90L/R								



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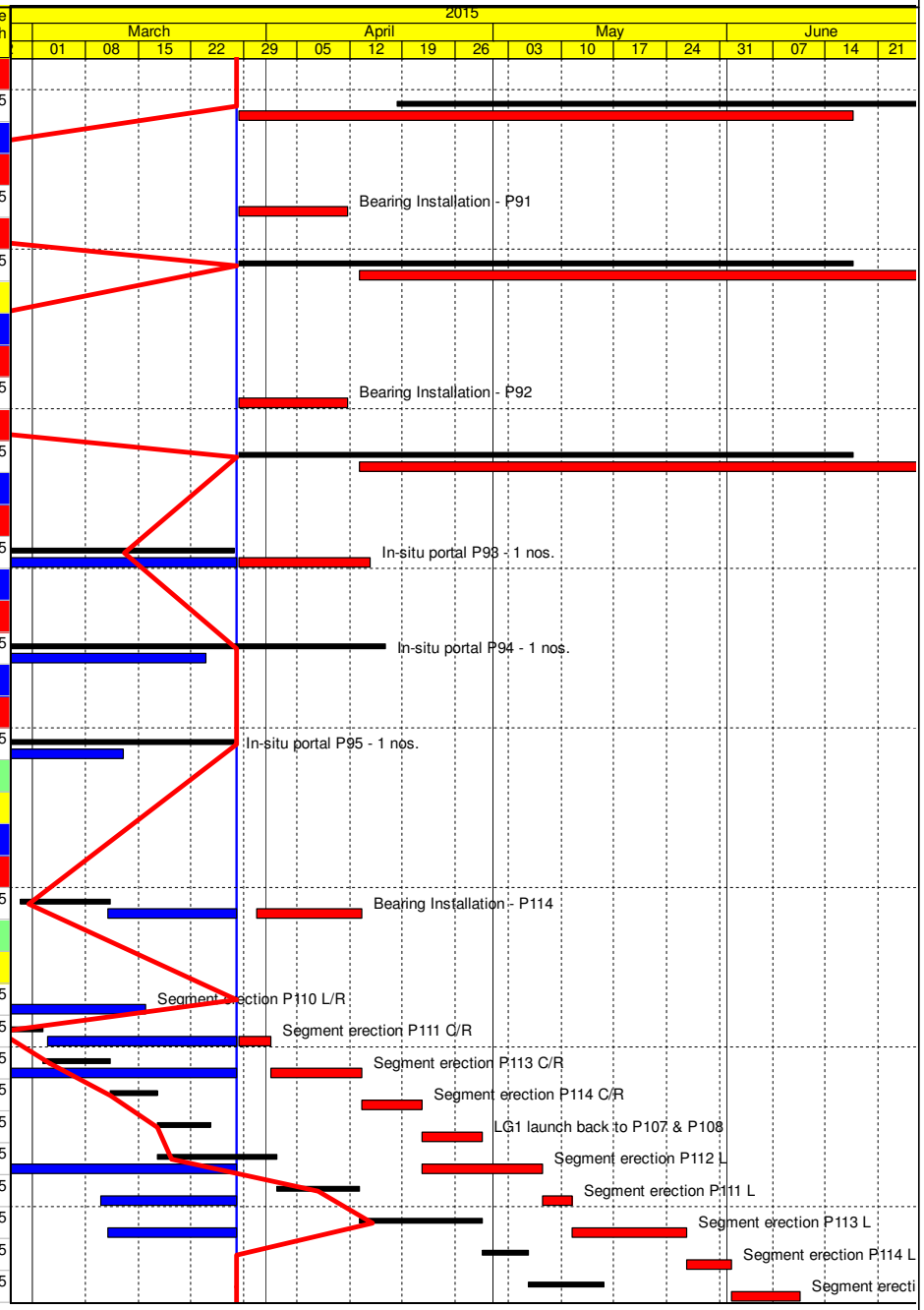
	In-situ Portal/T-pier Construction							
AI1500	In-situ portal P90 - 1 nos.	60	60	0%	28/3/15	17/6/15	18/4/15	9/7/15
	Pier P91L/R							
	Column Construction							
AI1565	Bearing Installation - P91	10	10	0%	28/3/15	11/4/15	2/1/15	13/1/15
	In-situ Portal/T-pier Construction							
AI1570	In-situ portal P91 - 1 nos.	60	60	0%	13/4/15	3/7/15	28/3/15	17/6/15
	MI16L/R 37m+65mx5+43m - Stage 5 of Works							
	Pier P92L/R (M.J.)							
	Column Construction							
AI1635	Bearing Installation - P92	10	10	0%	28/3/15	11/4/15	2/1/15	13/1/15
	In-situ Portal/T-pier Construction							
AI1640	In-situ portal P92 - 1 nos.	60	60	0%	13/4/15	3/7/15	28/3/15	17/6/15
	Pier P93L/R							
	In-situ Portal/T-pier Construction							
AI1710	In-situ portal P93 - 1 nos.	60	12	80%	24/1/15 A	14/4/15	14/1/15	27/3/15
	Pier P94L/R							
	In-situ Portal/T-pier Construction							
AI1780	In-situ portal P94 - 1 nos.	60	0	100%	17/1/15 A	24/3/15 A	30/1/15	16/4/15
	Pier P95L/R							
	In-situ Portal/T-pier Construction							
AI1850	In-situ portal P95 - 1 nos.	60	0	100%	7/1/15 A	13/3/15 A	14/1/15	27/3/15
	Land Viaduct P108 to P114							
	ML19L/C/R 40m+65mx2 Stage 5 of Works							
	Pier P114 L/C/R							
	Column Construction							
AI3085	Bearing Installation - P114	10	9	10%	11/3/15 A	13/4/15	27/2/15	11/3/15
	Deck Construction between Landing Point on Airport Island and Scenic Hill							
	Segment Erection - Launching Girder							
DC5009	Segment erection P110 L/R	6	0	100%	18/10/14 A	16/3/15 A	5/2/15	13/2/15
DC5010	Segment erection P111 C/R	11	4	66%	3/3/15 A	1/4/15	13/2/15	2/3/15
DC5030	Segment erection P113 C/R	8	7	10%	17/2/15 A	13/4/15	2/3/15	11/3/15
DC5035	Segment erection P114 C/R	6	6	0%	13/4/15	21/4/15	11/3/15	17/3/15
DC5036	LG1 launch back to P107 & P108	6	6	0%	21/4/15	29/4/15	17/3/15	24/3/15
DC5037	Segment erection P112 L	13	12	11.11%	12/1/15 A	7/5/15	17/3/15	2/4/15
DC5038	Segment erection P111 L	6	3	50%	10/3/15 A	11/5/15	2/4/15	13/4/15
DC5039	Segment erection P113 L	13	11	10%	11/3/15 A	26/5/15	13/4/15	29/4/15
DC5045	Segment erection P114 L	4	4	0%	26/5/15	1/6/15	29/4/15	5/5/15
DC5050	Segment erection P108 2 shift full closure CLKS road	8	8	0%	1/6/15	10/6/15	5/5/15	15/5/15



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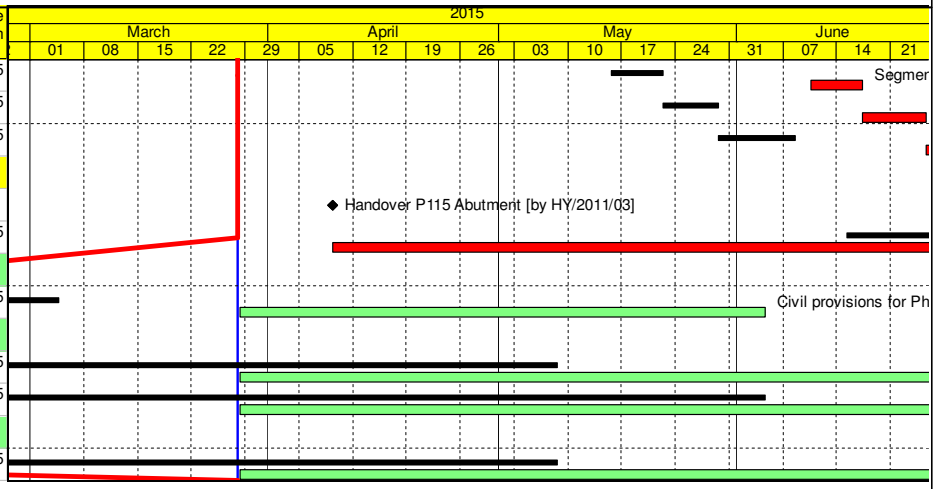
DC5060	Segment erection P107 2 shift full closure CLKS road	4	4	0%	10/6/15	17/6/15	15/5/15	22/5/15
DC5070	Segment erection P106 2 shift full closure CLKS road	6	6	0%	17/6/15	25/6/15	22/5/15	29/5/15
DC5080	Segment erection P105 2 shift full closure CLKS road	8	8	0%	25/6/15	8/7/15	29/5/15	8/6/15
In-situ Deck for interface span P114 to P115								
DC5460	Handover P115 Abutment [by HY/2011/03]	0	0	0%	9/4/15*		15/6/15	
DC5480	In-situ pier segment for eastern abutment	60	60	0%	9/4/15	29/6/15	15/6/15	8/9/15
Road Furniture & Finishing								
RD1020	Civil provisions for Photometer/Luminance	50	50	0%	28/3/15	4/6/15	2/1/15	4/3/15
Ground Level Road Works								
RD1060	Re-alignment works for Chep Lap Kok South Road (CLKSR)	100	100	0%	28/3/15	14/8/15	2/1/15	8/5/15
RD1090	Modification work for Sha Lo Wan wind profiler station (Wall extension)	120	120	0%	28/3/15	11/9/15	2/1/15	4/6/15
Landscaping and Establishment Works								
RD1080	Landscaping for deck level	100	100	0%	28/3/15	14/8/15	2/1/15	8/5/15



DWP_01d Programme
Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

3MRP DWP_01e 1503

Date	Revision	Checked	Approved
31/3/15	1503 rolling based on DWP01e	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, µg/m^3	Limit Level, µg/m^3
AMS1	381	500
AMS4	352	

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

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

Table B-3 Action and Limit Levels for Construction Noise

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

Noted: If works are to be carried during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.
(*) reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

Table B-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	***5.0***	***4.2*** except 5 for FCZ
	Bottom	***4.7***	***3.6***
Turbidity (NTU)	Depth average	***27.5*** and 120% of upstream control station's turbidity at the same tide of the same day	***47.0*** and 130% of turbidity at the upstream control station at the same tide of same day
Suspended Solids (mg/L)	Depth average	***23.5*** and 120% of upstream control station's SS at the same tide of the same day	***34.4*** and 130% of SS at the upstream control station at the same tide of same day and 10mg/L for WSD Seawater Intakes

Note:
(1) Depth-averaged is calculated by taking the arithmetic means of reading of all three depths
(2) For DO, non-compliance of the water quality limit occurs when monitoring result is lower that the limit.
(3) For SS & turbidity non-compliance of the water quality limits occur when monitoring result is higher than the limits.
(4) All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.
(5) The 1%-ile of baseline data for dissolved oxygen (surface and middle) and dissolved oxygen (bottom) are 4.2mg/L and 3.6mg/L respectively.

APPENDIX C
COPIES OF CALIBRATION CERTIFCATES

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/67/0013

Project No. AMS 1 - Sha Lo Wan Operator: WK

Date: 15-Jan-15 Next Due Date: 14-Mar-15

Equipment No.: A-01-67 Serial No. 3218

Ambient Condition			
Temperature, Ta (K)	289.3	Pressure, Pa (mmHg)	768.5

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.9	3.52	60.92	6.9	2.68
2	9.7	3.18	55.04	5.4	2.37
3	7.5	2.79	48.45	4.2	2.09
4	5.2	2.33	40.42	2.8	1.71
5	3.4	1.88	32.76	1.9	1.41

By Linear Regression of Y on X

Slope , mw = 0.0452 **Intercept, bw =** -0.0958

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.28**

Remarks:

Conducted by: WK Tang Signature: Kwan Date: 15/1/15

Checked by: [illegible] Signature: Date: 15 January 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/74/0013

Project No. AMS 4 - San Tau Operator: WK

Date: 15-Jan-15 Next Due Date: 14-Mar-15

Equipment No.: A-01-74 Serial No. 2202

Ambient Condition			
Temperature, Ta (K)	289.7	Pressure, Pa (mmHg)	768.2

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0582	Intercept, bc	-0.0249
Last Calibration Date:	27-Sep-14	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	26-Sep-15	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.3	3.43	59.32	8.1	2.90
2	9.7	3.18	54.99	6.9	2.68
3	7.5	2.79	48.41	5.3	2.35
4	4.9	2.26	39.21	3.4	1.88
5	3.3	1.85	32.26	2.1	1.48

By Linear Regression of Y on X

Slope , mw = 0.0522 **Intercept, bw :** -0.1875

Correlation coefficient* = 0.9997

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.07**

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 15/1/15

Checked by: [illegible] Signature: Date: 15 January 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/67/0014

Project No. AMS 1 - Sha Lo Wan Operator: WK

Date: 13-Mar-15 Next Due Date: 12-May-15

Equipment No.: A-01-67 Serial No. 3218

Ambient Condition			
Temperature, Ta (K)	290.8	Pressure, Pa (mmHg)	766.3

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	**mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$**			
Next Calibration Date:	3-Feb-16	**Qstd = $\{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.2	3.40	57.77	6.7	2.63
2	9.4	3.12	52.96	5.4	2.36
3	7.7	2.82	47.97	4.5	2.16
4	5.1	2.30	39.11	2.9	1.73
5	3.2	1.82	31.05	1.8	1.36

By Linear Regression of Y on X

Slope , mw = 0.0470 **Intercept, bw =** -0.1008

Correlation coefficient* = 0.9995

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **3.56**

Remarks:

Conducted by: W.K. Tang Signature: Kwai Date: 13/3/15

Checked by: [illegible] Signature: Date: 13 March 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/74/0014

Project No. AMS 4 - San Tau Operator: WK

Date: 13-Mar-15 Next Due Date: 12-May-15

Equipment No.: A-01-74 Serial No. 2202

Ambient Condition			
Temperature, Ta (K)	289.6	Pressure, Pa (mmHg)	768.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0593	Intercept, bc	-0.02195
Last Calibration Date:	4-Feb-15	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	3-Feb-16	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis**
1	11.6	3.47	58.98	8.2	2.92
2	9.8	3.19	54.24	6.9	2.68
3	7.6	2.81	47.81	5.1	2.30
4	5.0	2.28	38.85	3.2	1.82
5	3.3	1.85	31.63	2.2	1.51

By Linear Regression of Y on X

Slope , mw = 0.0523 **Intercept, bw =** -0.1728

Correlation coefficient* = 0.9989

*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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.14**

Remarks:

Conducted by: WK. Tang Signature: Date: 13/3/15

Checked by: H Signature: Date: 13 March 2015

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

Description	Calibration Orifice	**Manufacturer**	TISCH
Serial No.	0993	**Temperature,Ta (K)**	299
Model No.	TE-5025A	**Pressure, Pa (mmHg)**	761.8
Date	27 September 2014	**Equipment No.:**	A-04-04

Plate	Diff.Vol (m^3)	Diff.Time (min)	Diff.Hg (mm)	Diff.H_2O (in.)
1	1.00	1.4230	3.3	2.00
2	1.00	1.0050	6.5	4.00
3	1.00	0.8950	8.2	5.00
4	1.00	0.8570	9.0	5.50
5	1.00	0.7080	13.0	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9947	0.6990	1.4135
0.9905	0.9856	1.9990
0.9883	1.1042	2.2350
0.9872	1.1519	2.3441
0.9820	1.3870	2.8270

Y axis= SQRT[H_2O(Pa/760)(298/Ta)]

Qstd Slope (m) = 2.05398
Intercept (b) = -0.02487
Coefficient (r) = 0.99996

Va	(X axis) Qa	(Y axis)
0.9957	0.6997	0.8860
0.9915	0.9865	1.2530
0.9892	1.1053	1.4009
0.9882	1.1531	1.4693
0.9829	1.3883	1.7720

Y axis= SQRT[H_2O(Ta/Pa)]

Qa Slope (m) = 1.28617
Intercept (b) = -0.01559
Coefficient (r) = 0.99996

CALCULATIONS

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

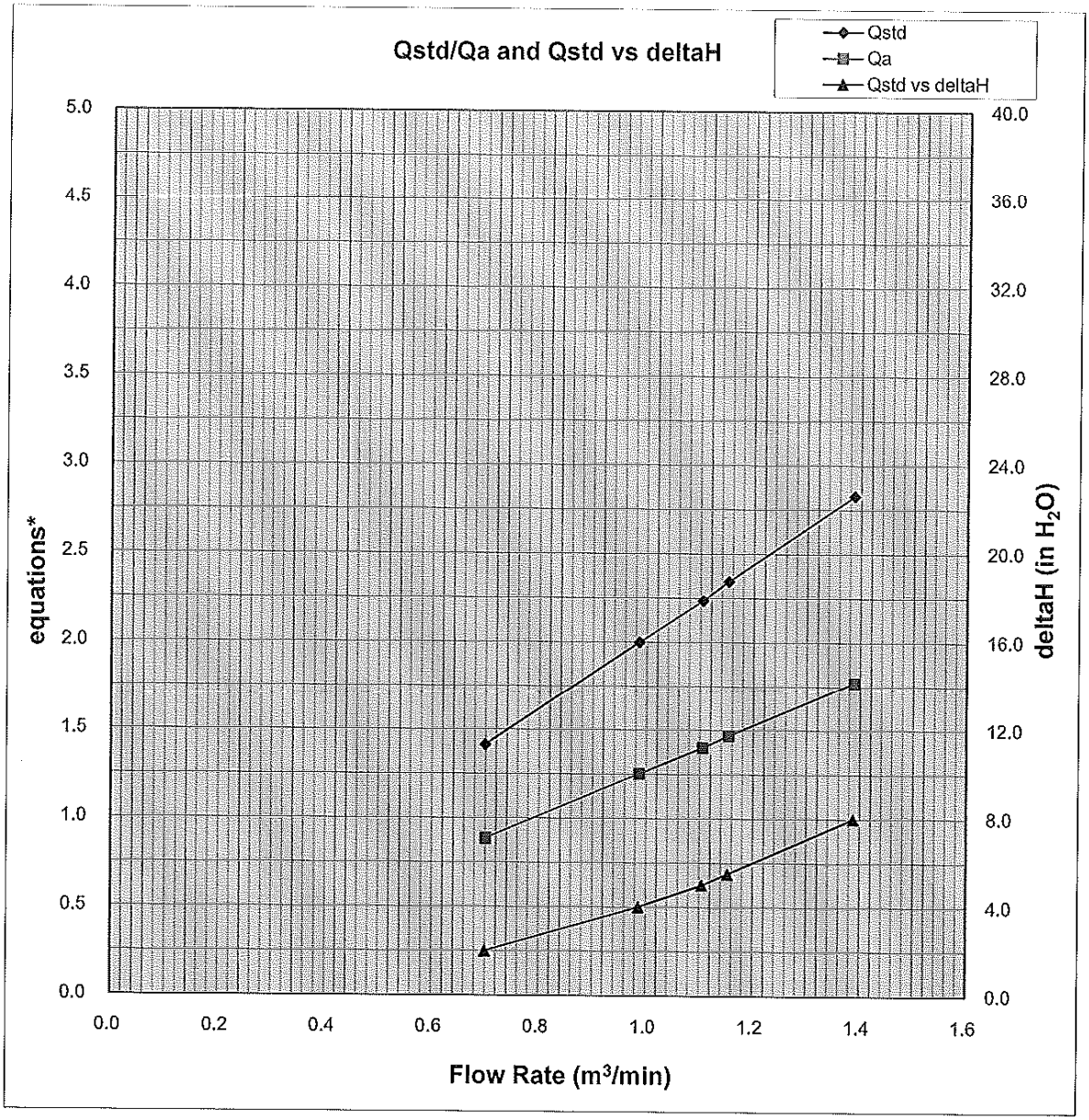
For subsequent flow rate calculations:
Qstd=I/m{[SQRT(H_2O(Pa/760)(298/Ta))]-b}
Qa=I/m{[SQRT H_2O(Ta/Pa)]-b}

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

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT



Y-axis equations:

Qstd series: SQRT[ΔH(Pa/Pstd)(Tstd/Ta)]

Qa series: SQRT[ΔH(Ta/Pa)]

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. **501222** Page 1 of 2 Pages

Customer : Dragages - China Habour - VSL Joint Venture

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

Order No. : Q50512 **Date of receipt :** 12-Feb-15

Item Tested

Description : Weather Stations,Vantage Pro2

Manufacturer : Davis

Model : 6152 CUK **Serial No. :** AK130520006

Test Conditions

Date of Test : 17-Feb-15 **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:

Equipment No.	Description	Cert. No.	Traceable to
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: 17-Feb-15

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 8601 Fax: 2425 8646

Calibration Certificate

Certificate No. 501222

Results :

1. Wind Speed

Applied Value (m/s)	UUT Reading (m/s)
2.5	2.7
5.0	4.9
10.1	10.3
15.1	15.2
19.0	19.2

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. Uncertainty : ± (2 % + 0.2 m/s), for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 006 hPa
4. 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 ----------

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. : C150005
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-3254) Date of Receipt / 收件日期 : 29 December 2014

Description / 儀器名稱	:	Sound & Vibration Analyser
Manufacturer / 製造商	:	Svantek
Model No. / 型號	:	SVAN957
Serial No. / 編號	:	23853
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 : 2 January 2015

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
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, 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 : 6 January 2015

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 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣換樓四樓
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. : C150005
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the Svantek acoustic calibrator SV30A, S/N : 24803 was performed before the test from 6.1.1 to 6.3.2

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	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	113.8	± 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	113.8 (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	113.8	Ref.
			Slow			113.8	± 0.3

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 – 校正及檢測實驗所
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. : C150005
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	87.6	-26.2 ± 1.5
					125 Hz	97.6	-16.1 ± 1.5
					250 Hz	105.1	-8.6 ± 1.4
					500 Hz	110.5	-3.2 ± 1.4
					1 kHz	113.8	Ref.
					2 kHz	115.0	+1.2 ± 1.6
					4 kHz	114.8	+1.0 ± 1.6
					8 kHz	112.8	-1.1 (+2.1 ; -3.1)
					12.5 kHz	109.5	-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	113.0	-0.8 ± 1.5
					125 Hz	113.6	-0.2 ± 1.5
					250 Hz	113.8	0.0 ± 1.4
					500 Hz	113.8	0.0 ± 1.4
					1 kHz	113.8	Ref.
					2 kHz	113.6	-0.2 ± 1.6
					4 kHz	113.0	-0.8 ± 1.6
					8 kHz	110.9	-3.0 (+2.1 ; -3.1)
					12.5 kHz	107.6	-6.2 (+6.0 ; -∞)

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. : C150005
證書編號

Remarks : - UUT Microphone Model No. : ACO 7052S & S/N : 35989

- 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
:	1 kHz	: ± 0.10 dB (Ref. 94 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.

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 – 校正及檢測實驗所
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. : C150004
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-3254) Date of Receipt / 收件日期 : 29 December 2014

Description / 儀器名稱 : Acoustic Calibrator
Manufacturer / 製造商 : Svantek
Model No. / 型號 : SV30A
Serial No. / 編號 : 24803
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 : 2 January 2015

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
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By : K C Lee
測試 Project Engineer

Certified By : K M Wu
核證 Engineer

Date of Issue : 6 January 2015
簽發日期

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 – 校正及檢測實驗所
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. : C150004
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C143868
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C141558

4. Test procedure : MA100N.

5. 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 98	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.

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 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
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CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LTD.

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

Date of issue: 06-03-2015
Page 1 of 1 pages Castco LRN: EN0150212-7

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 : 12-02-2015
Serial No. : 12B100804 Date of Next Calibration : 12-05-2015

pH Value Check (pH Probe : Model: 6589, L/N: 11M)

Expected Reading (pH Unit)	Sonde Reading (pH Unit)	Tolerance (pH Unit)	Tolerance Limit (pH Unit)	Method Refrence
4.00	3.94	-0.06	± 0.2	APHA 21e, 4500-H^+B
7.02	7.08	0.06		
10.06	9.99	-0.07		

Turbidity Check (Turbidity Sensor : Model: 6136, S/N: 11J100476)

Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
4.00	4.1	+2.5	± 10	APHA 21e, 2130B
10.00	9.6	-4		
20.00	19.9	-0.5		
50.00	49.5	-1		
100.00	96.5	-3.5		

Conductivity Performance Check (Conductivity Sensor : Model: 6560, L/N: 14M100013)

Expected Reading (µS/cm)	Sonde Reading (µS/cm)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
1412 at 25 °C	1385 at 25 °C	-1.9	± 10	APHA 21e, 2510B

Salinity Performance Check (Salinity Sensor : Model: 6560, L/N: 14M100013)

Expected Reading (ppt)	Sonde Reading (ppt)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
33	34.57	+4.8	± 10	APHA 19e, 2520B

Dissolved Oxygen Check (Dissolved Oxygen Sensor : Model: 6562, L/N: 07E100029)

DO from Winkler Titration (mg/L)	Sonde Reading (mg/L)	Tolerance (mg/L)	Tolerance Limit (mg/L)	Method Refrence
8.80	8.95	+0.15	± 0.20	APHA 21e, 4500-O C&G
4.99	4.98	-0.01		

Water Level Meter Check

Expected Reading (m)	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Refrence
1.00	1.02	0.02	± 0.05	YSI Sondes Procedure Manual

Temperature Check

Expected Reading (℃)	Sonde Reading (℃)	Tolerance (℃)	Tolerance Limit (℃)	Method Refrence
25.0	24.22	-0.78	± 2.0	Telarc Technical Guide No.3 1986

Checked by: _____
AU KWOK KIN
Senior Chemist

End of Report

Certified by: _____
CHENG CHI FAI
Senior Manager

Form No. ENV SONDE_T1 dd 22/02/2013

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CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LTD.

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

Date of issue: 06-03-2015
Page 1 of 1 pages Castco LRN: EN0150212-8

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.03.03
Model No. : YSI 6920 Date of Calibration : 12-02-2015
Serial No. : 03H1764AA Date of Next Calibration : 12-05-2015

pH Value Check (pH Probe : Model: 6589, L/N: 11M)

Expected Reading (pH Unit)	Sonde Reading (pH Unit)	Tolerance (pH Unit)	Tolerance Limit (pH Unit)	Method Refrence
4.00	4.02	+0.02	± 0.2	APHA 21e, 4500-H^+B
7.02	7.07	+0.05		
10.06	9.98	-0.08		

Turbidity Check (Turbidity Sensor : Model: 6136, S/N: 12B100900)

Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
4.00	4.0	0.0	± 10	APHA 21e, 2130B
10.00	9.5	-5		
20.00	19.5	-2.5		
50.00	49.3	-1.4		
100.00	99.6	-0.4		

Conductivity Performance Check (Conductivity Sensor : Model: 6560, L/N: 11J100025)

Expected Reading (µS/cm)	Sonde Reading (µS/cm)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
1412 at 25 °C	1415 at 25 °C	+0.21	± 10	APHA 21e, 2510B

Salinity Performance Check (Salinity Sensor : Model: 6560, L/N: 11J100025)

Expected Reading (ppt)	Sonde Reading (ppt)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
33	30.96	-6.2	± 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 Refrence
8.72	8.83	+0.11	± 0.20	APHA 21e, 4500-O C&G
5.00	4.82	-0.18		

Water Level Meter Check

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

Temperature Check

Expected Reading (℃)	Sonde Reading (℃)	Tolerance (℃)	Tolerance Limit (℃)	Method Refrence
25.0	23.90	-1.10	± 2.0	Telarc Technical Guide No.3 1986

Checked by: _____ Certified by: _____

AU KWOK KIN
Senior Chemist

End of Report

CHENG CHI FAI
Senior Manager

Form No. ENV SONDE_T1 dd 22/02/2013

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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 March 2015

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

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 April 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Apr	2-Apr	**3-Apr**	**4-Apr**
	Noise			24 hr TSP 1 hr TSP X 3		
5-Apr	**6-Apr**	**7-Apr**	8-Apr	9-Apr	10-Apr	11-Apr
			24 hr TSP 1 hr TSP X 3	Noise		
12-Apr	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr
		24 hr TSP 1 hr TSP X 3	Noise			
19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr
	24 hr TSP 1 hr TSP X 3	Noise			24 hr TSP 1 hr TSP X 3	
26-Apr	27-Apr	28-Apr	29-Apr	30-Apr		
	Noise			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 March 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar
	Water Quality Monitoring Mid-Ebb 11:35 Mid-Flood 16:52		Water Quality Monitoring Mid-Ebb 12:28 Mid-Flood 18:15		Water Quality Monitoring Mid-Ebb 13:23 Mid-Flood 19:24	
8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar
	Water Quality Monitoring Mid-Flood 8:46 Mid-Ebb 14:52		Water Quality Monitoring Mid-Flood 9:40 Mid-Ebb 16:04		Water Quality Monitoring Mid-Flood 10:50 Mid-Ebb 17:52	
15-Mar	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar
		Water Quality Monitoring Mid-Ebb 10:53 Mid-Flood 16:10		Water Quality Monitoring Mid-Ebb 12:19 Mid-Flood 18:07		Water Quality Monitoring Mid-Ebb 13:41 Mid-Flood 19:49
22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar
	Water Quality Monitoring Mid-Flood 8:41 Mid-Ebb 15:00		Water Quality Monitoring Mid-Flood 9:46 Mid-Ebb 16:24		Water Quality Monitoring Mid-Flood 11:00 Mid-Ebb 18:24	
29-Mar	30-Mar	31-Mar				
		Water Quality Monitoring Mid-Ebb 11:09 Mid-Flood 16:38				

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 April 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Apr	2-Apr	**3-Apr**	**4-Apr**
				Water Quality Monitoring Mid-Ebb 12:02 Mid-Flood 18:02		Water Quality Monitoring Mid-Ebb 12:57 Mid-Flood 18:13
5-Apr	**6-Apr**	**7-Apr**	8-Apr	9-Apr	10-Apr	11-Apr
	Water Quality Monitoring Mid-Flood 7:43 Mid-Ebb 13:57		Water Quality Monitoring Mid-Flood 8:35 Mid-Ebb 15:01		Water Quality Monitoring Mid-Flood 9:37 Mid-Ebb 16:25	
12-Apr	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr
	Water Quality Monitoring Mid-Flood 13:07 Mid-Ebb 19:59		Water Quality Monitoring Mid-Ebb 10:32 Mid-Flood 15:59		Water Quality Monitoring Mid-Ebb 11:57 Mid-Flood 17:59	
19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr
	Water Quality Monitoring Mid-Flood 7:32 Mid-Ebb 13:56		Water Quality Monitoring Mid-Flood 8:37 Mid-Ebb 15:14		Water Quality Monitoring Mid-Flood 9:43 Mid-Ebb 16:42	
26-Apr	27-Apr	28-Apr	29-Apr	30-Apr		
	Water Quality Monitoring Mid-Flood 13:23 Mid-Ebb 20:09		Water Quality Monitoring Mid-Ebb 10:32 Mid-Flood 16:11			

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 March 2015

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

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 April 2015

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

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 March 2015

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

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 April 2015

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

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

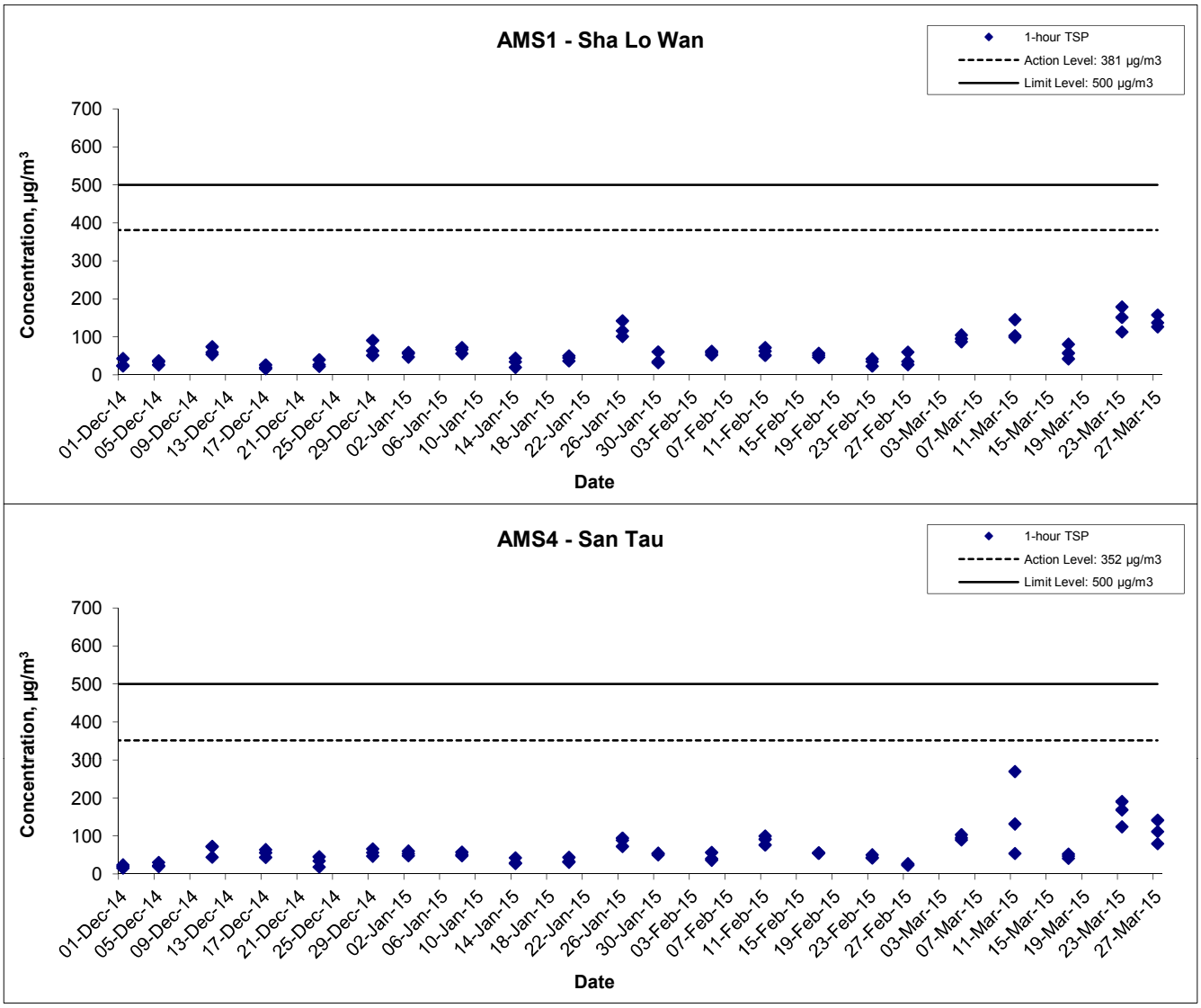
Location AMS1 - Sha Lo Wan

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. ($\mu g/m^3$)
					Initial	Final		Initial	Final		Initial	Final			
5-Mar-15	13:00	Cloudy	289.1	764.7	2.8080	2.8150	0.0070	5009.9	5010.9	1.0	1.22	1.22	1.22	73.1	96
5-Mar-15	14:02	Cloudy	289.2	764.5	2.8019	2.8096	0.0077	5010.9	5011.9	1.0	1.22	1.22	1.22	73.1	105
5-Mar-15	15:06	Cloudy	289.4	764.3	2.8156	2.8220	0.0064	5011.9	5012.9	1.0	1.22	1.22	1.22	73.0	88
11-Mar-15	10:00	Cloudy	289.3	770.0	2.7949	2.8056	0.0107	5036.9	5037.9	1.0	1.22	1.22	1.22	73.3	146
11-Mar-15	11:00	Cloudy	289.5	769.8	2.8113	2.8189	0.0076	5037.9	5038.9	1.0	1.22	1.22	1.22	73.3	104
11-Mar-15	13:00	Cloudy	290.0	769.4	2.8058	2.8131	0.0073	5038.9	5039.9	1.0	1.22	1.22	1.22	73.2	100
17-Mar-15	09:00	Cloudy	294.2	763.6	2.7973	2.8004	0.0031	5063.9	5064.9	1.0	1.21	1.21	1.21	72.8	43
17-Mar-15	13:00	Cloudy	294.9	763.7	2.7991	2.8033	0.0042	5064.9	5065.9	1.0	1.21	1.21	1.21	72.7	58
17-Mar-15	14:00	Cloudy	295.0	763.4	2.8020	2.8079	0.0059	5065.9	5066.9	1.0	1.21	1.21	1.21	72.7	81
23-Mar-15	08:15	Sunny	293.1	767.7	2.8022	2.8133	0.0111	5090.9	5091.9	1.0	1.22	1.22	1.22	73.1	152
23-Mar-15	09:20	Sunny	293.3	767.5	2.7971	2.8102	0.0131	5091.9	5092.9	1.0	1.22	1.22	1.22	73.1	179
23-Mar-15	11:00	Cloudy	293.5	767.3	2.8680	2.8763	0.0083	5092.9	5093.9	1.0	1.22	1.22	1.22	73.0	114
27-Mar-15	11:00	Cloudy	292.3	769.7	2.8480	2.8581	0.0101	5117.9	5118.9	1.0	1.22	1.22	1.22	73.3	138
27-Mar-15	13:00	Cloudy	292.6	768.5	2.8303	2.8396	0.0093	5118.9	5119.9	1.0	1.22	1.22	1.22	73.2	127
27-Mar-15	14:02	Cloudy	296.7	768.3	2.8228	2.8343	0.0115	5119.9	5120.9	1.0	1.21	1.21	1.21	72.7	158
														Min	43
														Max	179
														Average	112

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. ($\mu g/m^3$)
					Initial	Final		Initial	Final		Initial	Final			
5-Mar-15	08:56	Cloudy	289.0	766.5	2.8122	2.8192	0.0070	4776.3	4777.3	1.0	1.22	1.22	1.22	73.3	96
5-Mar-15	09:58	Cloudy	289.2	766.3	2.8040	2.8106	0.0066	4777.3	4778.3	1.0	1.22	1.22	1.22	73.2	90
5-Mar-15	11:00	Cloudy	289.4	766.1	2.8160	2.8236	0.0076	4778.3	4779.3	1.0	1.22	1.22	1.22	73.2	104
11-Mar-15	11:00	Cloudy	289.6	769.7	2.8012	2.8109	0.0097	4803.3	4804.3	1.0	1.22	1.22	1.22	73.3	132
11-Mar-15	13:00	Cloudy	289.2	768.5	2.8232	2.8272	0.0040	4804.3	4805.3	1.0	1.22	1.22	1.22	73.3	55
11-Mar-15	14:00	Cloudy	289.6	768.3	2.8109	2.8307	0.0198	4805.3	4806.3	1.0	1.22	1.22	1.22	73.3	270
17-Mar-15	09:00	Cloudy	294.3	763.4	2.7915	2.7945	0.0030	4830.3	4831.3	1.0	1.20	1.20	1.20	71.9	42
17-Mar-15	13:00	Cloudy	294.7	761.8	2.7895	2.7933	0.0038	4831.3	4832.3	1.0	1.20	1.20	1.20	71.8	53
17-Mar-15	14:00	Cloudy	294.9	761.7	2.7796	2.7830	0.0034	4832.3	4833.3	1.0	1.20	1.20	1.20	71.8	47
23-Mar-15	08:00	Sunny	293.7	767.9	2.8134	2.8272	0.0138	4857.3	4858.3	1.0	1.20	1.20	1.20	72.2	191
23-Mar-15	09:15	Sunny	293.9	767.7	2.8001	2.8091	0.0090	4858.3	4859.3	1.0	1.20	1.20	1.20	72.1	125
23-Mar-15	13:00	Sunny	294.1	767.5	2.7801	2.7923	0.0122	4859.3	4860.3	1.0	1.20	1.20	1.20	72.1	169
27-Mar-15	11:00	Cloudy	291.5	770.5	2.8467	2.8570	0.0103	4884.3	4885.3	1.0	1.21	1.21	1.21	72.5	142
27-Mar-15	13:00	Cloudy	292.5	769.9	2.8390	2.8448	0.0058	4885.3	4886.3	1.0	1.21	1.21	1.21	72.4	80
27-Mar-15	14:02	Cloudy	292.7	769.7	2.8306	2.8387	0.0081	4886.3	4887.3	1.0	1.21	1.21	1.21	72.4	112
														Min	42
														Max	270
														Average	114

1-hour TSP Concentration Levels



Title: Graphical Presentation of 1-hour TSP Monitoring Results	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 Date: Mar 15	Project No.: MA12014 Appendix: E

CINOTECH

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - 24-hour TSP Monitoring Results

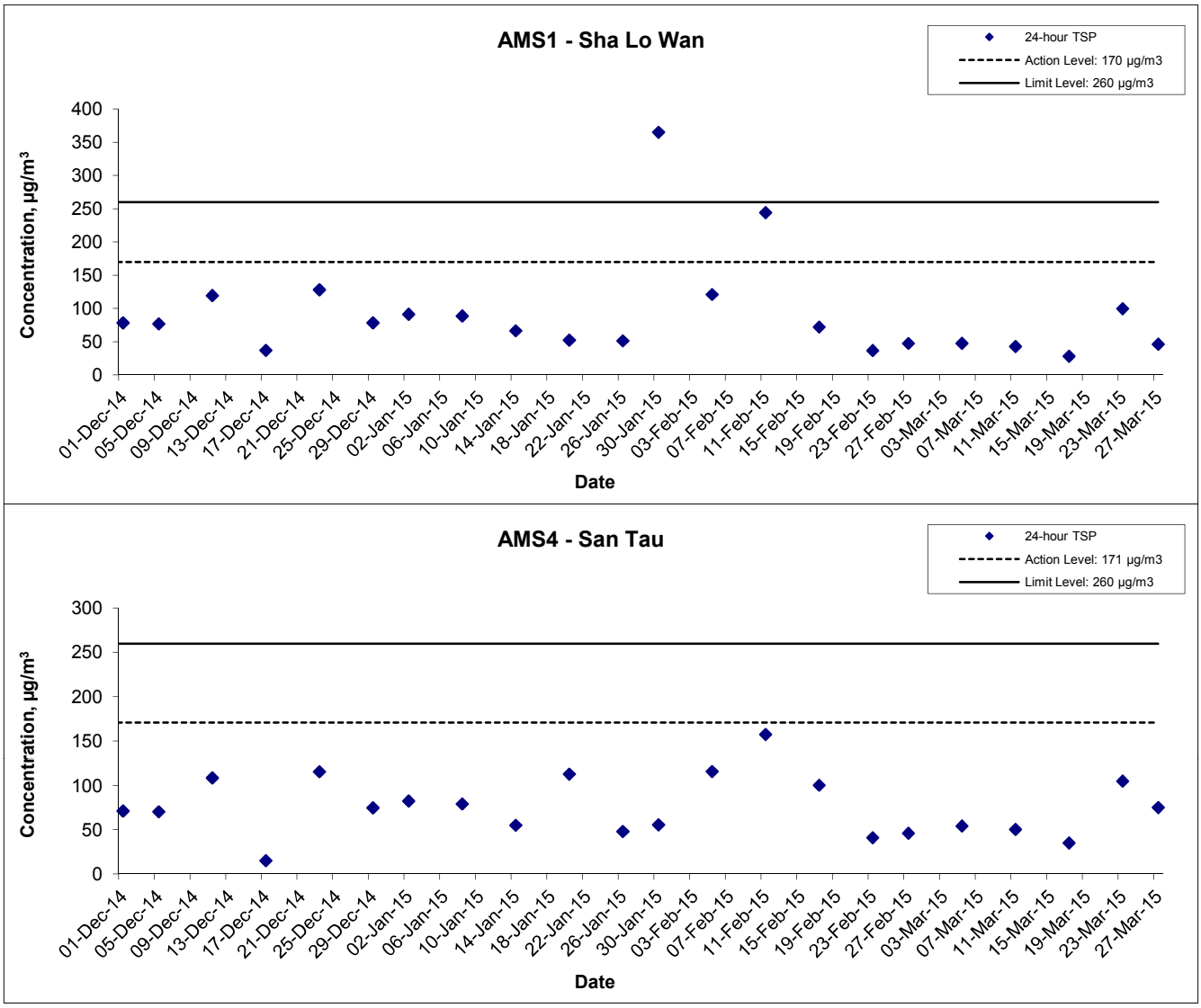
Location AMS1 - Sha Lo Wan

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. ($\mu g/m^3$)
					Initial	Final		Initial	Final		Initial	Final			
5-Mar-15	16:08	Cloudy	289.6	764.1	2.8177	2.9014	0.0837	5012.9	5036.9	24.0	1.22	1.22	1.22	1752.4	48
11-Mar-15	14:10	Cloudy	290.2	769.2	2.8012	2.8767	0.0755	5039.9	5063.9	24.0	1.22	1.22	1.22	1756.1	43
17-Mar-15	16:00	Cloudy	295.5	762.9	2.7981	2.8475	0.0494	5066.9	5090.9	24.0	1.21	1.21	1.21	1742.8	28
23-Mar-15	17:00	Cloudy	294.5	765.8	2.8053	2.9799	0.1746	5093.9	5117.9	24.0	1.21	1.21	1.21	1748.6	100
27-Mar-15	15:05	Sunny	296.9	768.1	2.8317	2.9126	0.0809	5120.9	5144.9	24.0	1.21	1.21	1.21	1744.3	46
														Min	28
														Max	100
														Average	53

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. ($\mu g/m^3$)
					Initial	Final		Initial	Final		Initial	Final			
5-Mar-15	12:05	Cloudy	289.6	765.9	2.8148	2.9101	0.0953	4779.3	4803.3	24.0	1.22	1.22	1.22	1756.1	54
11-Mar-15	15:30	Cloudy	289.8	768.1	2.8115	2.9002	0.0887	4806.3	4830.3	24.0	1.22	1.22	1.22	1757.9	50
17-Mar-15	16:00	Cloudy	295.4	761.3	2.7886	2.8492	0.0606	4833.3	4857.3	24.0	1.20	1.19	1.20	1720.8	35
23-Mar-15	17:00	Cloudy	294.7	765.6	2.8055	2.9867	0.1812	4860.3	4884.3	24.0	1.20	1.20	1.20	1727.0	105
27-Mar-15	15:05	Cloudy	292.7	769.7	2.8370	2.9676	0.1306	4887.3	4911.3	24.0	1.21	1.21	1.21	1736.7	75
														Min	35
														Max	105
														Average	64

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	CINOTECH
	Date: Mar 15	Appendix: F	

APPENDIX G
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix G - Noise Monitoring Results

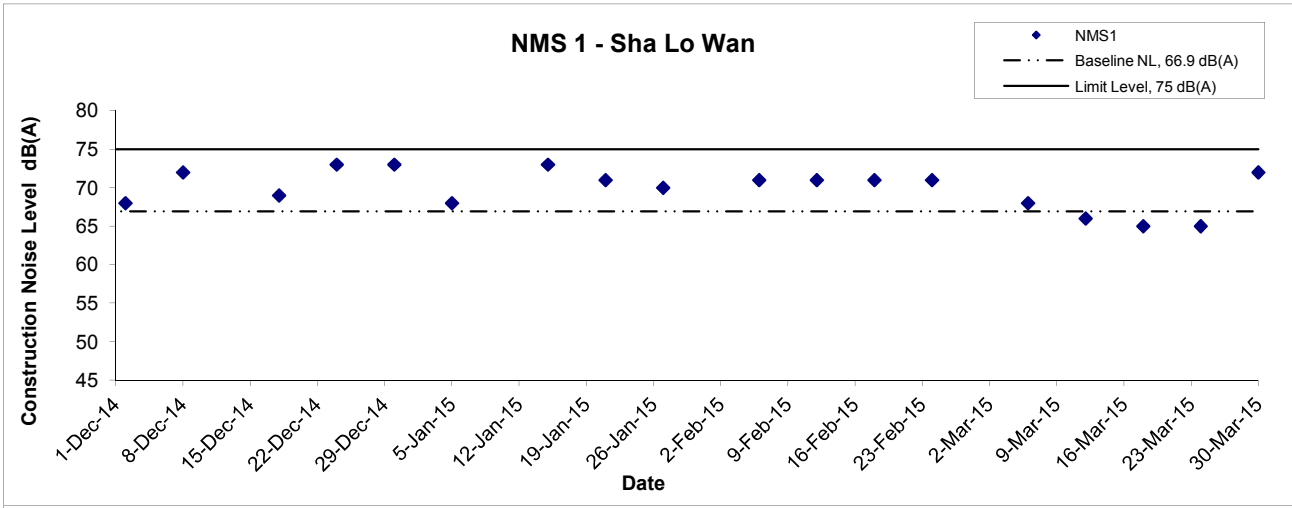
Location NMS 1 - Sha Lo Wan								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}	L_{eq}
6-Mar-15	Sunny	15:03	66.2	70.3	52.3	68	66.9	68 Measured ≦ Limit Level
		15:08	69.5	74.0	57.9			
		15:13	67.4	71.7	51.8			
		15:18	67.6	71.9	52.1			
		15:23	68.7	72.3	57.6			
		15:28	68.1	73.6	57.1			
12-Mar-15	Sunny	13:10	65.7	70.4	52.0	66		66 Measured ≦ Limit Level
		13:15	62.7	67.4	51.0			
		13:20	66.7	72.1	51.5			
		13:25	68.6	74.1	57.0			
		13:30	66.9	70.4	51.8			
		13:35	66.2	71.4	57.1			
18-Mar-15	Sunny	11:00	65.2	70.7	53.0	65		65 Measured ≦ Limit Level
		11:05	65.4	68.2	55.9			
		11:10	68.6	73.0	58.0			
		11:15	63.5	68.4	53.5			
		11:20	58.8	61.9	51.3			
		11:25	59.4	63.7	51.7			
24-Mar-15	Cloudy	11:10	68.5	72.7	555.4	65		65 Measured ≦ Limit Level
		11:15	65.2	69.4	54.3			
		11:20	58.6	62.1	52.2			
		11:25	62.9	68.3	53.7			
		11:30	66.4	71.8	52.9			
		11:35	65.3	67.4	53.4			
30-Mar-15	Sunny	15:30	70.2	75.1	55.4	72		72 Measured ≦ Limit Level
		15:35	73.4	79.0	56.0			
		15:40	68.4	72.1	55.5			
		15:45	72.2	78.0	56.6			
		15:50	72.2	76.5	58.5			
		15:55	72.1	77.0	57.5			

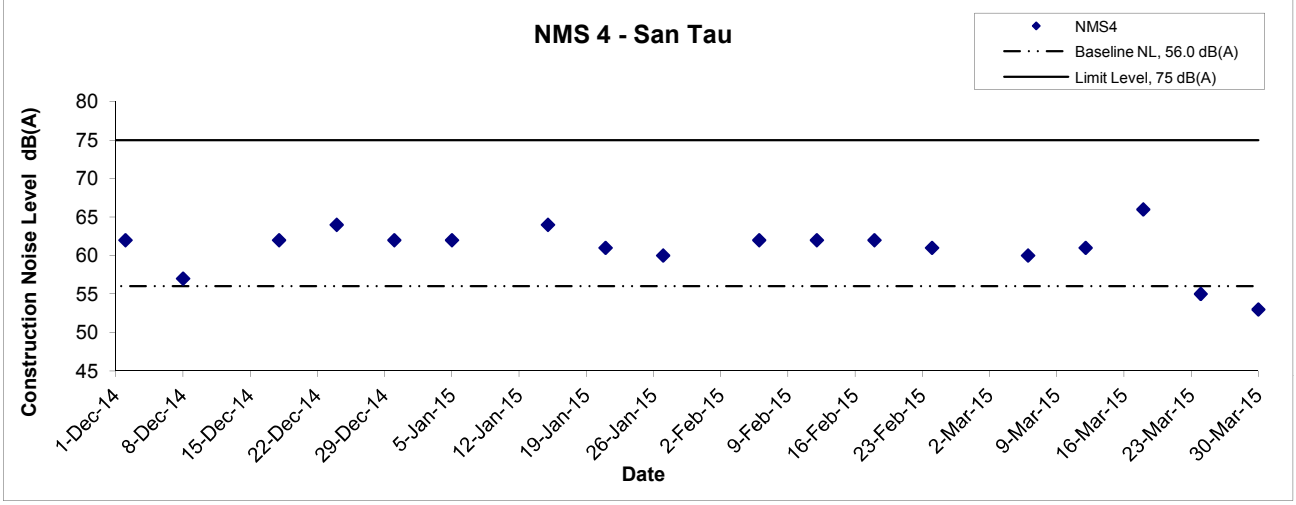
Remark: * +3dB(A) Façade correction included

Location NMS 4 - San Tau								
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L_{eq}	L_{10}	L_{90}	L_{eq}	L_{eq}	L_{eq}
6-Mar-15	Sunny	16:15	61.2	57.3	51.4	60	56.0	60 Measured ≦ Limit Level
		16:20	59.3	60.1	51.2			
		16:25	59.4	60.3	50.9			
		16:30	59.0	59.9	51.1			
		16:35	58.9	60.0	52.0			
		16:40	59.1	60.8	52.3			
12-Mar-15	Cloudy	15:05	59.6	64.1	60.1	61		61 Measured ≦ Limit Level
		15:10	62.0	66.2	60.4			
		15:15	61.4	65.8	59.8			
		15:20	60.8	64.0	59.6			
		15:25	61.5	65.1	59.9			
		15:30	60.1	63.7	59.3			
18-Mar-15	Cloudy	15:00	65.5	66.5	64.2	66		66 Measured ≦ Limit Level
		15:05	66.6	67.9	64.5			
		15:10	65.9	67.9	64.4			
		15:15	65.4	66.5	64.1			
		15:20	65.5	67.4	64.1			
		15:25	65.8	66.8	64.0			
24-Mar-15	Cloudy	13:00	60.5	51.0	44.2	55		55 Measured ≦ Limit Level
		13:05	53.3	57.0	44.2			
		13:10	52.2	52.3	43.1			
		13:15	48.1	51.2	42.5			
		13:20	50.5	54.6	43.1			
		13:25	50.1	52.6	44.9			
30-Mar-15	Sunny	13:05	51.3	52.8	43.5	53		53 Measured ≦ Limit Level
		13:10	51.5	53.6	44.1			
		13:15	52.4	55.5	44.2			
		13:20	53.0	56.0	41.1			
		13:25	53.3	56.8	43.3			
		13:30	53.7	57.0	45.2			

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: Mar 15	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*
2-Mar-15	Fine	Moderate	11:11	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	29.8 29.7	29.8	94.0 94.0	94.0	7.4 7.4	7.4	7.3	1.6 1.4	1.5	2.8	3.3 5.3	4.3	3.9
				Middle	6	18.2 18.2	18.2	8.2 8.2	8.2	33.1 33.0	33.1	91.4 91.5	91.5	7.1 7.1	7.1		2.9 2.9	2.9		3.0 4.4	3.7	
				Bottom	11	18.2 18.2	18.2	8.2 8.2	8.2	33.5 33.5	33.5	89.7 89.5	89.6	6.9 6.9	6.9	6.9	3.9 3.8	3.9		3.3 4.0	3.7	
4-Mar-15	Fine	Moderate	12:38	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	31.6 31.6	31.6	81.4 81.1	81.3	6.3 6.3	6.3	6.3	5.1 5.1	5.1	5.9	4.8 5.2	5.0	6.6
				Middle	6	18.7 18.7	18.7	8.2 8.2	8.2	31.7 31.7	31.7	81.3 81.3	81.3	6.3 6.3	6.3		5.5 5.5	5.5		8.0 6.5	7.3	
				Bottom	11	18.7 18.7	18.7	8.1 8.1	8.1	31.9 31.9	31.9	75.9 76.6	76.3	5.9 5.9	5.9	5.9	7.0 6.9	7.0		8.0 6.7	7.4	
6-Mar-15	Cloudy	Moderate	13:08	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	32.3 32.3	32.3	83.7 83.7	83.7	6.4 6.4	6.4	6.5	6.1 5.2	5.7	5.1	4.3 5.3	4.8	4.4
				Middle	6	18.8 18.8	18.8	8.1 8.1	8.1	32.3 32.3	32.3	84.0 83.6	83.8	6.5 6.4	6.5		4.7 4.8	4.8		3.1 2.7	2.9	
				Bottom	11	18.8 18.8	18.8	8.1 8.1	8.1	32.4 32.4	32.4	84.5 83.4	84.0	6.5 6.4	6.5	6.5	4.8 5.0	4.9		4.5 6.6	5.6	
9-Mar-15	Cloudy	Moderate	14:16	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	30.8 30.7	30.8	84.1 84.2	84.2	6.6 6.6	6.6	6.6	4.0 4.0	4.0	4.7	9.6 8.5	9.1	9.5
				Middle	6	18.5 18.5	18.5	8.2 8.2	8.2	32.6 32.7	32.7	84.1 84.1	84.1	6.5 6.5	6.5		4.5 4.9	4.7		11.7 18.9	15.3	
				Bottom	11	18.4 18.4	18.4	8.2 8.2	8.2	33.4 33.4	33.4	82.5 82.5	82.5	6.4 6.4	6.4	6.4	5.5 5.5	5.5		5.0 2.9	4.0	
11-Mar-15	Cloudy	Moderate	16:04	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	33.1 33.1	33.1	95.3 95.0	95.2	7.3 7.3	7.3	7.3	4.1 4.1	4.1	5.8	7.1 6.7	6.9	8.1
				Middle	6	18.8 18.8	18.8	8.2 8.2	8.2	33.3 33.2	33.3	95.2 95.4	95.3	7.3 7.3	7.3		5.1 4.5	4.8		6.6 8.4	7.5	
				Bottom	11	18.8 18.8	18.8	8.2 8.2	8.2	33.3 33.3	33.3	95.3 95.5	95.4	7.3 7.3	7.3	7.3	8.1 8.6	8.4		10.0 9.6	9.8	
13-Mar-15	Cloudy	Moderate	16:53	Surface	1	18.5 18.5	18.5	8.2 8.2	8.2	31.2 31.2	31.2	102.0 102.0	102.0	7.9 7.9	7.9	7.9	2.3 2.3	2.3	2.9	2.9 3.8	3.4	3.3
				Middle	6	18.5 18.5	18.5	8.2 8.2	8.2	31.8 31.9	31.9	101.3 100.9	101.1	7.9 7.8	7.9		2.8 2.8	2.8		2.0 2.2	2.1	
				Bottom	11	18.4 18.4	18.4	8.1 8.1	8.1	32.9 32.9	32.9	95.8 95.4	95.6	7.4 7.4	7.4	7.4	3.5 3.6	3.6		5.6 3.4	4.5	
17-Mar-15	Fine	Moderate	10:49	Surface	1	19.9 20.0	20.0	8.2 8.1	8.2	30.8 30.7	30.8	78.6 78.2	78.4	6.0 5.9	6.0	6.0	3.8 4.0	3.9	3.8	5.7 5.1	5.4	6.5
				Middle	6	19.7 19.7	19.7	8.2 8.1	8.2	30.8 30.8	30.8	78.4 79.2	78.8	6.0 6.0	6.0		3.4 3.7	3.6		8.2 6.2	7.2	
				Bottom	11	18.8 18.8	18.8	8.2 8.2	8.2	32.0 31.9	32.0	78.1 79.3	78.7	6.0 6.1	6.1	6.1	4.0 3.5	3.8		6.9 7.1	7.0	
19-Mar-15	Fine	Moderate	12:44	Surface	1	20.6 20.6	20.6	8.2 8.2	8.2	23.8 24.2	24.0	86.1 86.2	86.2	6.7 6.7	6.7	6.9	4.3 4.3	4.3	4.4	8.8 4.8	6.8	5.5
				Middle	6	20.6 20.5	20.6	8.2 8.2	8.2	21.5 25.5	23.5	89.1 89.7	89.4	7.1 7.0	7.1		4.5 4.5	4.5		5.2 4.9	5.1	
				Bottom	11	20.3 20.3	20.3	8.2 8.2	8.2	26.6 26.6	26.6	80.8 92.5	86.7	6.2 7.2	6.7	6.7	4.5 4.5	4.5		4.6 4.8	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 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-Mar-15	Fine	Moderate	13:39	Surface	1	20.3 20.3	20.3	8.2 8.2	8.2	33.6 33.8	33.7	84.6 84.5	84.6	6.7 6.7	6.7	6.7	3.6 3.6	3.6	3.9	6.1 9.9	8.0	7.2
				Middle	6	20.3 20.3	20.3	8.2 8.2	8.2	33.7 33.0	33.4	85.3 85.2	85.3	6.7 6.7	6.7		3.7 3.9	3.8		10.9 5.9	8.4	
				Bottom	11	20.2 20.2	20.2	8.2 8.2	8.2	33.8 32.9	33.4	83.7 85.6	84.7	6.6 6.8	6.7	6.7	4.2 4.3	4.3		5.8 4.6	5.2	
23-Mar-15	Cloudy	Moderate	14:51	Surface	1	20.5 20.5	20.5	8.1 8.1	8.1	32.2 32.2	32.2	96.6 95.0	95.8	7.2 7.1	7.2	7.2	3.1 3.3	3.2	6.1	4.5 5.7	5.1	5.5
				Middle	6	20.4 20.5	20.5	8.1 8.1	8.1	32.5 32.4	32.5	95.7 95.0	95.4	7.1 7.1	7.1		4.8 4.4	4.6		5.0 5.3	5.2	
				Bottom	11	20.4 20.3	20.4	8.1 8.1	8.1	32.6 32.8	32.7	95.0 94.7	94.9	7.1 7.1	7.1	7.1	10.5 10.5	10.5		7.6 4.5	6.1	
25-Mar-15	Cloudy	Moderate	15:42	Surface	1	20.1 20.1	20.1	8.2 8.2	8.2	29.4 30.4	29.9	86.7 89.4	88.1	6.6 6.8	6.7	6.7	5.7 6.0	5.9	6.3	4.1 2.7	3.4	6.1
				Middle	5.5	20.1 20.1	20.1	8.2 8.2	8.2	31.3 30.6	31.0	87.6 89.8	88.7	6.6 6.8	6.7		6.3 6.1	6.2		5.6 13.2	9.4	
				Bottom	10	20.1 20.1	20.1	8.2 8.2	8.2	31.8 32.5	32.2	87.8 91.2	89.5	6.6 6.8	6.7	6.7	6.8 6.7	6.8		8.7 2.4	5.6	
27-Mar-15	Cloudy	Moderate	17:53	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	33.1 32.6	32.9	95.9 97.8	96.9	7.1 7.3	7.2	7.2	9.9 9.8	9.9	10.1	0.7 0.5	0.6	1.8
				Middle	6	20.0 20.1	20.1	8.1 8.1	8.1	33.6 32.7	33.2	95.4 97.6	96.5	7.1 7.3	7.2		9.7 9.7	9.7		1.2 4.0	2.6	
				Bottom	11	20.0 20.0	20.0	8.1 8.1	8.1	32.4 32.9	32.7	94.7 98.1	96.4	7.1 7.3	7.2	7.2	11.1 10.2	10.7		2.2 2.2	2.2	
31-Mar-15	Cloudy	Moderate	11:28	Surface	1	22.7 22.8	22.8	8.2 8.3	8.3	31.3 31.3	31.3	104.9 105.4	105.2	7.6 7.6	7.6	7.5	2.5 2.4	2.5	2.7	4.6 5.4	5.0	7.3
				Middle	6	22.6 22.6	22.6	8.2 8.2	8.2	30.1 30.0	30.1	100.7 101.1	100.9	7.3 7.3	7.3		2.6 3.0	2.8		6.2 6.2	6.2	
				Bottom	11	22.5 22.5	22.5	8.2 8.2	8.2	30.4 30.3	30.4	99.0 98.7	98.9	7.2 7.2	7.2	7.2	3.1 2.6	2.9		13.4 7.8	10.6	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at 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*
2-Mar-15	Fine	Moderate	16:06	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	30.8 31.0	30.9	98.2 97.2	97.7	7.6 7.5	7.6	7.5	3.4 3.0	3.2	4.0	1.3 1.9	1.6	2.8
				Middle	6	18.2 18.2	18.2	8.1 8.1	8.1	32.6 32.5	32.6	92.8 94.2	93.5	7.2 7.3	7.3		3.4 4.1	3.8		4.4 2.9	3.7	
				Bottom	11	18.2 18.2	18.2	8.1 8.1	8.1	32.8 32.7	32.8	91.0 90.5	90.8	7.1 7.0	7.1	7.1	5.1 4.7	4.9		4.2 2.0	3.1	
4-Mar-15	Fine	Moderate	17:33	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	31.8 31.8	31.8	111.8 111.6	111.7	8.6 8.6	8.6	8.5	3.9 4.2	4.1	3.8	14.9 9.5	12.2	11.8
				Middle	6	18.5 18.5	18.5	8.1 8.1	8.1	32.7 32.7	32.7	107.2 107.2	107.2	8.3 8.3	8.3		3.5 3.5	3.5		15.6 22.2	18.9	
				Bottom	11	18.5 18.5	18.5	8.1 8.1	8.1	33.0 33.0	33.0	105.1 106.5	105.8	8.1 8.2	8.2	8.2	3.5 3.8	3.7		5.3 3.5	4.4	
6-Mar-15	Cloudy	Moderate	18:44	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	82.8 82.6	82.7	6.4 6.3	6.4	6.4	4.3 4.4	4.4	4.4	3.7 3.4	3.6	4.6
				Middle	6	18.7 18.7	18.7	8.2 8.2	8.2	33.0 33.0	33.0	82.7 82.3	82.5	6.3 6.3	6.3		4.5 4.4	4.5		5.2 5.8	5.5	
				Bottom	11	18.7 18.7	18.7	8.2 8.2	8.2	32.8 32.8	32.8	81.2 81.6	81.4	6.2 6.3	6.3	6.3	4.3 4.2	4.3		6.6 2.9	4.8	
9-Mar-15	Cloudy	Moderate	08:40	Surface	1	18.4 18.4	18.4	8.1 8.1	8.1	30.6 30.6	30.6	73.0 73.1	73.1	5.7 5.7	5.7	5.7	5.3 5.2	5.3	6.7	3.3 3.2	3.3	4.5
				Middle	6	18.4 18.4	18.4	8.2 8.2	8.2	31.1 31.2	31.2	73.3 73.2	73.3	5.7 5.7	5.7		5.9 6.2	6.1		4.7 5.1	4.9	
				Bottom	11	18.4 18.4	18.4	8.2 8.2	8.2	32.0 32.3	32.2	73.4 73.3	73.4	5.7 5.7	5.7	5.7	8.2 9.3	8.8		7.2 3.1	5.2	
11-Mar-15	Cloudy	Moderate	10:47	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	33.3 33.3	33.3	93.6 92.7	93.2	7.2 7.1	7.2	7.2	8.7 8.9	8.8	10.9	8.8 11.9	10.4	9.8
				Middle	6.5	18.8 18.8	18.8	8.2 8.2	8.2	33.3 33.3	33.3	93.0 92.6	92.8	7.1 7.1	7.1		11.0 11.1	11.1		10.6 10.9	10.8	
				Bottom	12	18.8 18.8	18.8	8.2 8.2	8.2	33.3 33.3	33.3	92.6 92.5	92.6	7.1 7.1	7.1	7.1	12.1 13.2	12.7		7.6 9.0	8.3	
13-Mar-15	Cloudy	Moderate	10:16	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	33.0 33.1	33.1	75.2 75.0	75.1	5.8 5.8	5.8	5.9	2.7 2.6	2.7	2.9	1.2 1.4	1.3	1.6
				Middle	6	18.6 18.6	18.6	8.2 8.2	8.2	31.4 31.6	31.5	75.7 75.5	75.6	5.9 5.9	5.9		2.2 2.0	2.1		0.7 1.1	0.9	
				Bottom	11	18.6 18.6	18.6	8.2 8.2	8.2	33.4 33.5	33.5	75.9 73.5	74.7	5.8 5.6	5.7	5.7	3.6 4.1	3.9		4.2 1.2	2.7	
17-Mar-15	Fine	Moderate	17:03	Surface	1	19.4 19.4	19.4	8.2 8.2	8.2	31.9 31.9	31.9	76.3 76.4	76.4	5.8 5.8	5.8	5.9	4.1 4.1	4.1	6.2	6.8 6.4	6.6	5.5
				Middle	6	18.9 18.8	18.9	8.2 8.2	8.2	32.0 32.0	32.0	77.4 76.2	76.8	6.0 5.9	6.0		4.3 4.2	4.3		4.6 5.6	5.1	
				Bottom	11	18.7 18.7	18.7	8.2 8.2	8.2	32.4 32.4	32.4	77.0 75.3	76.2	5.9 5.8	5.9	5.9	9.2 10.9	10.1		4.4 5.0	4.7	
19-Mar-15	Fine	Moderate	18:05	Surface	1	20.7 20.7	20.7	8.1 8.2	8.2	25.0 28.8	26.9	90.7 91.6	91.2	7.0 6.9	7.0	7.2	4.2 4.2	4.2	4.5	5.4 3.6	4.5	4.9
				Middle	6	20.6 20.5	20.6	8.2 8.2	8.2	28.9 28.9	28.9	98.4 94.2	96.3	7.5 7.2	7.4		4.2 4.3	4.3		3.9 3.6	3.8	
				Bottom	11	20.2 20.1	20.2	8.2 8.2	8.2	29.5 29.8	29.7	101.2 101.3	101.3	7.7 7.7	7.7	7.7	4.9 5.3	5.1		8.8 4.1	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 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-Mar-15	Fine	Moderate	19:25	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	33.0 32.8	32.9	79.8 79.5	79.7	6.3 6.3	6.3	6.4	4.4 5.3	4.9	6.0	11.8 8.0	9.9	10.3
				Middle	6	20.3 20.3	20.3	8.1 8.1	8.1	32.5 32.7	32.6	79.2 82.0	80.6	6.2 6.5	6.4		5.5 6.5	6.0		9.3 10.2	9.8	
				Bottom	11	20.2 20.2	20.2	8.1 8.1	8.1	32.8 32.8	32.8	78.6 79.4	79.0	6.2 6.3	6.3	6.3	7.3 7.0	7.2		10.2 12.2	11.2	
23-Mar-15	Cloudy	Moderate	09:23	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	31.7 31.8	31.8	90.1 89.7	89.9	6.8 6.7	6.8	6.8	9.7 9.9	9.8	13.6	8.6 8.8	8.7	7.8
				Middle	6	20.2 20.2	20.2	8.1 8.1	8.1	31.8 31.8	31.8	90.1 89.1	89.6	6.8 6.7	6.8		14.5 12.6	13.6		7.6 6.6	7.1	
				Bottom	11	20.2 20.2	20.2	8.1 8.1	8.1	31.8 31.8	31.8	90.1 88.6	89.4	6.8 6.7	6.8	6.8	16.9 17.9	17.4		7.4 7.6	7.5	
25-Mar-15	Cloudy	Moderate	10:08	Surface	1	20.2 20.2	20.2	8.2 8.2	8.2	31.5 33.4	32.5	100.0 97.9	99.0	7.5 7.3	7.4	7.4	10.3 10.6	10.5	11.4	1.9 6.5	4.2	4.4
				Middle	5.5	20.2 20.2	20.2	8.2 8.2	8.2	32.4 34.2	33.3	97.3 100.9	99.1	7.3 7.5	7.4		10.5 10.5	10.5		5.0 3.2	4.1	
				Bottom	10	20.2 20.2	20.2	8.2 8.2	8.2	31.3 34.4	32.9	97.4 101.1	99.3	7.3 7.5	7.4	7.4	13.6 12.8	13.2		5.7 3.9	4.8	
27-Mar-15	Cloudy	Moderate	10:32	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	33.9 34.1	34.0	100.1 106.4	103.3	7.4 7.9	7.7	7.8	9.8 9.8	9.8	13.4	3.0 2.4	2.7	3.1
				Middle	6	20.1 20.1	20.1	8.2 8.1	8.2	34.1 34.0	34.1	106.5 102.9	104.7	7.9 7.7	7.8		14.6 12.6	13.6		3.6 3.1	3.4	
				Bottom	11	20.1 20.1	20.1	8.2 8.2	8.2	34.1 34.1	34.1	107.5 105.7	106.6	8.0 7.9	8.0	8.0	16.4 17.3	16.9		4.4 1.8	3.1	
31-Mar-15	Cloudy	Moderate	15:56	Surface	1	22.3 22.3	22.3	8.3 8.3	8.3	28.8 30.2	29.5	106.0 106.6	106.3	7.8 7.8	7.8	7.6	2.0 1.9	2.0	2.2	9.0 9.4	9.2	10.0
				Middle	6	20.7 20.6	20.7	8.2 8.2	8.2	32.0 32.3	32.2	100.9 98.5	99.7	7.5 7.3	7.4		2.3 2.0	2.2		9.0 12.0	10.5	
				Bottom	11	20.5 20.5	20.5	8.2 8.2	8.2	33.1 33.8	33.5	100.8 95.0	97.9	7.5 7.0	7.3	7.3	2.5 2.4	2.5		10.2 10.4	10.3	

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

Water Quality Monitoring Results at 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*
2-Mar-15	Fine	Moderate	10:58	Surface	1	18.8 18.8	18.8	8.0 8.0	8.0	29.9 30.3	30.1	90.0 88.9	89.5	7.0 6.9	7.0	6.9	2.3 2.4	2.4	3.5	2.7 4.3	3.5	3.9
				Middle	4	18.4 18.4	18.4	8.1 8.1	8.1	32.9 32.9	32.9	87.1 87.2	87.2	6.7 6.7	6.7		3.8 3.7	3.8		4.2 6.1	5.2	
				Bottom	7	18.3 18.3	18.3	8.1 8.1	8.1	33.5 33.6	33.6	86.5 85.8	86.2	6.7 6.6	6.7	6.7	4.0 4.5	4.3		3.1 2.8	3.0	
4-Mar-15	Fine	Moderate	11:39	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	31.9 32.0	32.0	115.3 115.2	115.3	8.9 8.9	8.9	8.9	4.9 4.9	4.9	5.4	3.6 4.4	4.0	3.9
				Middle	3.5	18.8 18.8	18.8	8.1 8.1	8.1	32.6 32.6	32.6	114.7 114.9	114.8	8.8 8.8	8.8		5.5 5.7	5.6		3.5 3.7	3.6	
				Bottom	6	18.6 18.6	18.6	8.2 8.2	8.2	33.9 33.9	33.9	114.4 114.4	114.4	8.8 8.8	8.8	8.8	5.6 5.5	5.6		4.1 3.9	4.0	
6-Mar-15	Cloudy	Moderate	12:26	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	29.5 29.6	29.6	88.7 88.5	88.6	7.0 6.9	7.0	6.9	7.3 7.4	7.4	6.3	5.4 4.6	5.0	5.5
				Middle	4	18.6 18.6	18.6	8.1 8.1	8.1	30.5 30.6	30.6	86.9 86.6	86.8	6.8 6.8	6.8		5.3 5.2	5.3		5.8 5.8	5.8	
				Bottom	7	18.6 18.6	18.6	8.1 8.1	8.1	31.5 31.5	31.5	85.1 84.8	85.0	6.6 6.6	6.6	6.6	6.2 6.4	6.3		5.1 6.0	5.6	
9-Mar-15	Cloudy	Moderate	13:34	Surface	1	19.1 19.2	19.2	8.2 8.2	8.2	33.4 33.3	33.4	79.6 78.7	79.2	6.1 6.0	6.1	6.1	5.9 5.8	5.9	7.2	6.8 15.5	11.2	8.8
				Middle	4	18.8 18.8	18.8	8.2 8.2	8.2	34.4 34.5	34.5	79.1 78.3	78.7	6.0 6.0	6.0		7.6 7.7	7.7		10.1 5.7	7.9	
				Bottom	7	18.7 18.7	18.7	8.2 8.2	8.2	34.5 34.5	34.5	77.1 76.7	76.9	5.9 5.8	5.9	5.9	7.9 8.0	8.0		6.0 8.4	7.2	
11-Mar-15	Cloudy	Moderate	14:45	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	33.2 33.2	33.2	97.9 97.8	97.9	7.5 7.5	7.5	7.5	4.6 4.6	4.6	4.6	6.0 6.7	6.4	8.5
				Middle	4	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	97.4 97.5	97.5	7.5 7.5	7.5		4.6 4.6	4.6		15.0 9.0	12.0	
				Bottom	7	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	96.9 96.9	96.9	7.4 7.4	7.4	7.4	4.5 4.5	4.5		6.6 7.6	7.1	
13-Mar-15	Cloudy	Moderate	16:44	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	32.7 32.7	32.7	91.7 91.3	91.5	7.1 7.0	7.1	7.0	2.8 2.9	2.9	3.6	2.7 2.9	2.8	2.1
				Middle	3	18.6 18.6	18.6	8.1 8.1	8.1	32.9 32.9	32.9	91.5 88.6	90.1	7.0 6.8	6.9		3.8 3.7	3.8		2.1 0.9	1.5	
				Bottom	5	18.5 18.5	18.5	8.1 8.1	8.1	33.0 33.0	33.0	90.2 87.6	88.9	6.9 6.7	6.8	6.8	3.9 4.0	4.0		2.3 1.6	2.0	
17-Mar-15	Fine	Moderate	10:06	Surface	1	19.9 19.8	19.9	8.1 8.1	8.1	30.0 30.1	30.1	79.2 79.1	79.2	6.1 6.0	6.1	6.0	2.8 3.2	3.0	3.7	6.1 3.7	4.9	5.8
				Middle	4	19.6 19.6	19.6	8.1 8.1	8.1	31.2 31.2	31.2	76.6 75.9	76.3	5.8 5.8	5.8		4.0 3.9	4.0		5.3 10.5	7.9	
				Bottom	7	19.6 19.6	19.6	8.1 8.1	8.1	31.4 31.5	31.5	74.4 73.9	74.2	5.7 5.6	5.7	5.7	4.2 4.1	4.2		5.9 3.4	4.7	
19-Mar-15	Fine	Moderate	11:24	Surface	1	21.2 21.2	21.2	8.0 8.0	8.0	30.5 30.4	30.5	96.5 96.2	96.4	7.2 7.2	7.2	7.2	6.2 5.7	6.0	7.6	4.6 10.7	7.7	9.5
				Middle	3	20.4 20.4	20.4	8.1 8.1	8.1	31.6 31.6	31.6	96.5 96.5	96.5	7.2 7.2	7.2		7.6 8.1	7.9		9.1 9.9	9.5	
				Bottom	5	20.2 20.2	20.2	8.1 8.1	8.1	32.2 32.2	32.2	96.0 97.1	96.6	7.2 7.3	7.3	7.3	8.3 9.7	9.0		12.5 10.3	11.4	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at 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-Mar-15	Fine	Moderate	12:11	Surface	1	20.9 20.9	20.9	8.1 8.1	8.1	29.4 30.7	30.1	103.6 100.8	102.2	7.8 7.5	7.7	7.7	4.2 5.1	4.7	6.1	5.5 5.1	5.3	9.1
				Middle	3.5	20.4 20.3	20.4	8.1 8.2	8.2	28.5 31.2	29.9	102.0 100.7	101.4	7.8 7.6	7.7		5.3 5.8	5.6		21.4 10.2	15.8	
				Bottom	6	20.0 20.1	20.1	8.1 8.2	8.2	32.2 31.9	32.1	99.3 99.6	99.5	7.5 7.5	7.5	7.5	8.1 8.0	8.1		5.7 6.4	6.1	
23-Mar-15	Cloudy	Moderate	14:38	Surface	1	20.2 20.1	20.2	8.2 8.2	8.2	32.2 32.2	32.2	96.3 91.8	94.1	7.2 6.9	7.1	7.1	4.4 4.7	4.6	4.3	7.1 11.1	9.1	8.6
				Middle	4	20.1 20.1	20.1	8.2 8.2	8.2	33.1 33.0	33.1	95.8 90.7	93.3	7.2 6.8	7.0		3.7 3.9	3.8		9.4 7.1	8.3	
				Bottom	7	20.1 20.1	20.1	8.2 8.2	8.2	33.4 33.4	33.4	97.5 94.1	95.8	7.3 7.0	7.2	7.2	4.7 4.2	4.5		8.0 8.6	8.3	
25-Mar-15	Cloudy	Moderate	15:10	Surface	1	20.4 20.4	20.4	8.0 8.1	8.1	32.9 32.7	32.8	91.8 91.6	91.7	6.8 6.8	6.8	6.8	3.8 4.2	4.0	4.1	3.6 4.8	4.2	4.4
				Middle	3	20.4 20.4	20.4	8.0 8.1	8.1	33.0 33.0	33.0	91.9 91.7	91.8	6.8 6.8	6.8		3.5 3.6	3.6		6.4 3.2	4.8	
				Bottom	5	20.3 20.3	20.3	8.1 8.1	8.1	33.6 33.6	33.6	92.5 92.1	92.3	6.9 6.8	6.9	6.9	5.0 4.2	4.6		5.0 3.2	4.1	
27-Mar-15	Cloudy	Moderate	17:00	Surface	1	20.7 20.7	20.7	8.0 8.1	8.1	31.7 31.7	31.7	97.4 105.3	101.4	7.3 7.9	7.6	7.4	7.7 7.7	7.7	8.6	5.8 8.3	7.1	4.5
				Middle	3	20.4 20.4	20.4	8.1 8.1	8.1	33.0 32.9	33.0	96.0 97.5	96.8	7.1 7.3	7.2		8.5 8.6	8.6		4.0 2.6	3.3	
				Bottom	5	20.3 20.2	20.3	8.1 8.1	8.1	33.6 33.6	33.6	100.4 95.6	98.0	7.5 7.1	7.3	7.3	9.3 9.5	9.4		3.5 2.5	3.0	
31-Mar-15	Cloudy	Moderate	10:20	Surface	1	22.6 22.6	22.6	8.2 8.2	8.2	29.3 29.2	29.3	104.2 105.5	104.9	7.6 7.7	7.7	7.4	2.3 2.2	2.3	4.1	4.0 8.6	6.3	4.2
				Middle	4	21.0 21.0	21.0	8.1 8.1	8.1	32.4 32.2	32.3	99.2 89.6	94.4	7.3 6.6	7.0		4.4 5.1	4.8		2.7 2.6	2.7	
				Bottom	7	20.8 20.8	20.8	8.1 8.1	8.1	33.5 33.5	33.5	76.4 76.4	76.4	5.6 5.6	5.6	5.6	5.0 5.3	5.2		3.4 4.0	3.7	

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*
2-Mar-15	Fine	Moderate	15:28	Surface	1	19.0 19.0	19.0	8.2 8.2	8.2	31.6 31.6	31.6	87.4 87.2	87.3	6.7 6.7	6.7	6.6	4.2 4.2	4.2	5.6	3.5 2.3	2.9	3.5
				Middle	3.5	18.7 18.7	18.7	8.2 8.2	8.2	32.1 32.1	32.1	82.3 83.2	82.8	6.3 6.4	6.4		6.1 6.1	6.1		4.6 3.4	4.0	
				Bottom	6	18.7 18.7	18.7	8.2 8.2	8.2	32.3 32.3	32.3	81.3 80.9	81.1	6.3 6.2	6.3	6.3	6.3 6.5	6.4		3.7 3.5	3.6	
4-Mar-15	Fine	Moderate	17:03	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	32.7 32.7	32.7	113.4 113.1	113.3	8.7 8.7	8.7	8.7	3.6 3.6	3.6	3.8	4.6 3.5	4.1	4.2
				Middle	3.5	18.8 18.8	18.8	8.2 8.2	8.2	32.8 32.8	32.8	112.0 112.2	112.1	8.6 8.6	8.6		3.7 3.7	3.7		3.4 4.0	3.7	
				Bottom	6	18.7 18.7	18.7	8.2 8.2	8.2	33.1 33.1	33.1	111.8 111.9	111.9	8.6 8.6	8.6	8.6	3.9 4.0	4.0		7.4 2.1	4.8	
6-Mar-15	Cloudy	Moderate	18:07	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	29.8 29.8	29.8	81.1 81.4	81.3	6.3 6.4	6.4	6.4	7.3 7.0	7.2	6.0	4.3 4.2	4.3	4.5
				Middle	4	18.7 18.7	18.7	8.1 8.1	8.1	30.4 30.4	30.4	81.5 81.5	81.5	6.3 6.3	6.3		5.5 5.5	5.5		3.0 6.8	4.9	
				Bottom	7	18.7 18.7	18.7	8.1 8.1	8.1	31.1 31.1	31.1	80.6 80.1	80.4	6.3 6.2	6.3	6.3	5.4 5.3	5.4		3.2 5.6	4.4	
9-Mar-15	Cloudy	Moderate	08:04	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	31.7 31.7	31.7	86.0 85.7	85.9	6.6 6.6	6.6	6.6	6.4 6.1	6.3	11.9	10.7 10.9	10.8	14.3
				Middle	4	18.8 18.8	18.8	8.1 8.1	8.1	31.8 31.6	31.7	85.0 84.2	84.6	6.6 6.5	6.6		12.1 14.5	13.3		20.5 19.3	19.9	
				Bottom	7	18.8 18.8	18.8	8.1 8.1	8.1	31.2 31.2	31.2	82.8 82.4	82.6	6.4 6.4	6.4	6.4	17.1 14.9	16.0		9.6 14.6	12.1	
11-Mar-15	Cloudy	Moderate	09:49	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	32.1 32.3	32.2	103.9 103.4	103.7	8.0 8.0	8.0	7.9	4.5 4.5	4.5	8.6	4.9 6.9	5.9	5.8
				Middle	4	18.6 18.6	18.6	8.1 8.1	8.1	32.8 32.8	32.8	101.6 101.6	101.6	7.8 7.8	7.8		4.6 4.5	4.6		6.0 4.5	5.3	
				Bottom	7	18.6 18.6	18.6	8.1 8.1	8.1	33.6 33.6	33.6	99.6 99.3	99.5	7.6 7.6	7.6	7.6	16.6 16.9	16.8		7.0 5.1	6.1	
13-Mar-15	Cloudy	Moderate	10:07	Surface	1	18.6 18.6	18.6	8.0 8.1	8.1	31.5 31.5	31.5	95.1 93.8	94.5	7.4 7.3	7.4	7.4	2.7 3.1	2.9	4.2	1.1 2.8	2.0	1.9
				Middle	3	18.5 18.5	18.5	8.1 8.1	8.1	31.7 31.7	31.7	94.9 93.5	94.2	7.4 7.3	7.4		2.8 2.9	2.9		1.1 3.7	2.4	
				Bottom	5	18.6 18.6	18.6	8.1 8.1	8.1	32.3 32.3	32.3	94.2 94.0	94.1	7.3 7.3	7.3	7.3	6.8 6.5	6.7		1.9 0.6	1.3	
17-Mar-15	Fine	Moderate	14:52	Surface	1	20.4 20.1	20.3	8.0 8.1	8.1	31.3 30.5	30.9	79.7 80.5	80.1	6.0 6.1	6.1	5.9	3.5 3.7	3.6	3.8	5.1 4.8	5.0	10.1
				Middle	4	20.1 20.1	20.1	8.1 8.1	8.1	31.1 31.1	31.1	74.9 74.6	74.8	5.7 5.6	5.7		3.5 3.2	3.4		4.1 5.7	4.9	
				Bottom	7	20.0 19.9	20.0	8.1 8.1	8.1	31.6 31.6	31.6	84.6 84.0	84.3	6.4 6.4	6.4	6.4	4.8 4.0	4.4		10.6 29.9	20.3	
19-Mar-15	Fine	Moderate	17:35	Surface	1	21.3 21.3	21.3	7.9 7.9	7.9	28.1 28.2	28.2	112.6 112.8	112.7	8.5 8.5	8.5	8.5	7.5 9.2	8.4	11.1	14.9 16.8	15.9	16.8
				Middle	3	21.0 21.1	21.1	7.9 7.9	7.9	28.5 28.4	28.5	113.5 111.8	112.7	8.6 8.4	8.5		8.0 9.1	8.6		22.4 22.6	22.5	
				Bottom	5	21.0 21.0	21.0	7.9 8.0	8.0	28.6 28.6	28.6	112.3 112.7	112.5	8.5 8.5	8.5	8.5	16.1 16.5	16.3		11.3 12.6	12.0	

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-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-Mar-15	Fine	Moderate	18:36	Surface	1	21.2 21.2	21.2	8.0 8.0	8.0	30.3 30.5	30.4	86.8 83.1	85.0	6.5 6.2	6.4	6.4	11.8 11.3	11.6	15.8	29.7 35.0	32.4	34.0
				Middle	3.5	21.2 21.2	21.2	8.0 8.0	8.0	30.4 27.6	29.0	84.4 82.8	83.6	6.3 6.3	6.3		18.5 18.1	18.3		31.3 36.0	33.7	
				Bottom	6	21.2 21.2	21.2	8.0 8.0	8.0	30.5 30.5	30.5	81.9 82.1	82.0	6.1 6.1	6.1	6.1	17.7 17.2	17.5		36.0 35.7	35.9	
23-Mar-15	Cloudy	Moderate	08:38	Surface	1	20.1 20.1	20.1	8.1 8.1	8.1	30.5 29.0	29.8	92.3 87.6	90.0	7.0 6.7	6.9	6.8	4.5 5.0	4.8	4.4	13.8 18.8	16.3	13.7
				Middle	3	20.1 20.1	20.1	8.1 8.1	8.1	30.7 30.9	30.8	89.0 86.7	87.9	6.7 6.6	6.7		3.9 4.2	4.1		12.8 11.2	12.0	
				Bottom	5	20.1 20.1	20.1	8.1 8.1	8.1	30.9 31.0	31.0	88.1 90.3	89.2	6.7 6.8	6.8	6.8	4.8 4.0	4.4		9.4 16.0	12.7	
25-Mar-15	Cloudy	Moderate	09:06	Surface	1	20.7 20.7	20.7	7.9 7.9	7.9	29.5 29.4	29.5	94.6 94.0	94.3	7.1 7.1	7.1	7.2	4.4 4.8	4.6	4.4	2.2 4.0	3.1	4.1
				Middle	3	20.6 20.6	20.6	8.0 8.0	8.0	30.8 30.7	30.8	95.4 95.1	95.3	7.2 7.1	7.2		4.1 4.4	4.3		2.0 6.5	4.3	
				Bottom	5	20.6 20.6	20.6	8.0 8.0	8.0	31.3 31.2	31.3	95.5 94.8	95.2	7.1 7.1	7.1	7.1	4.2 4.1	4.2		3.4 6.2	4.8	
27-Mar-15	Cloudy	Moderate	10:01	Surface	1	20.6 20.5	20.6	8.0 8.0	8.0	28.2 29.1	28.7	96.5 105.0	100.8	7.3 8.0	7.7	7.7	9.1 9.0	9.1	9.5	3.7 2.5	3.1	3.5
				Middle	3	20.4 20.4	20.4	8.0 8.0	8.0	30.7 30.5	30.6	95.6 104.7	100.2	7.2 7.9	7.6		9.4 8.9	9.2		3.6 2.5	3.1	
				Bottom	5	20.3 20.3	20.3	8.1 8.1	8.1	32.5 32.4	32.5	96.9 98.3	97.6	7.2 7.3	7.3	7.3	10.5 9.8	10.2		4.2 4.6	4.4	
31-Mar-15	Cloudy	Moderate	15:09	Surface	1	22.4 22.4	22.4	8.1 8.1	8.1	26.4 26.4	26.4	107.2 107.4	107.3	8.0 8.0	8.0	7.7	2.0 2.3	2.2	3.1	7.2 5.2	6.2	6.4
				Middle	4	21.5 21.5	21.5	8.0 8.0	8.0	29.5 29.5	29.5	101.5 95.1	98.3	7.5 7.1	7.3		2.7 2.9	2.8		5.2 7.6	6.4	
				Bottom	7	21.0 21.0	21.0	8.0 8.0	8.0	32.3 32.3	32.3	86.2 84.0	85.1	6.4 6.2	6.3	6.3	4.2 4.2	4.2		7.8 5.2	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 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*
2-Mar-15	Fine	Moderate	11:31	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	30.2 30.2	30.2	88.8 91.3	90.1	6.9 7.1	7.0	7.0	2.9 2.8	2.9	3.3	1.9 3.4	2.7	3.4
				Middle	3.5	18.3 18.3	18.3	8.1 8.1	8.1	33.5 33.4	33.5	91.4 91.2	91.3	7.0 7.0	7.0		3.0 3.1	3.1		5.0 3.7	4.4	
				Bottom	6	18.3 18.3	18.3	8.1 8.1	8.1	33.6 33.6	33.6	90.5 89.5	90.0	7.0 6.9	7.0	7.0	3.7 3.9	3.8		3.5 2.6	3.1	
4-Mar-15	Fine	Moderate	12:08	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	31.7 31.7	31.7	92.0 92.2	92.1	7.1 7.1	7.1	7.2	2.5 2.6	2.6	3.4	6.6 7.5	7.1	5.7
				Middle	5.5	18.8 18.8	18.8	8.2 8.2	8.2	31.5 31.6	31.6	93.9 94.0	94.0	7.3 7.3	7.3		3.2 3.0	3.1		4.2 6.2	5.2	
				Bottom	10	18.6 18.6	18.6	8.2 8.2	8.2	32.7 32.8	32.8	93.1 92.7	92.9	7.2 7.1	7.2	7.2	4.2 4.5	4.4		3.6 6.0	4.8	
6-Mar-15	Cloudy	Moderate	13:48	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	32.3 32.2	32.3	79.5 80.0	79.8	6.1 6.2	6.2	6.2	4.5 4.4	4.5	8.5	8.2 10.2	9.2	6.7
				Middle	5	18.6 18.6	18.6	8.2 8.2	8.2	32.7 32.8	32.8	79.6 79.3	79.5	6.1 6.1	6.1		4.5 4.5	4.5		4.1 4.2	4.2	
				Bottom	9	18.5 18.5	18.5	8.2 8.2	8.2	33.1 32.5	32.8	80.6 81.2	80.9	6.2 6.3	6.3	6.3	16.3 16.5	16.4		6.1 7.1	6.6	
9-Mar-15	Cloudy	Moderate	14:37	Surface	1	19.3 19.3	19.3	8.2 8.2	8.2	30.0 30.1	30.1	74.1 74.7	74.4	5.7 5.8	5.8	5.9	4.6 4.7	4.7	6.8	9.3 5.9	7.6	7.3
				Middle	5	18.8 18.8	18.8	8.2 8.2	8.2	32.6 32.6	32.6	78.0 78.0	78.0	6.0 6.0	6.0		7.0 6.9	7.0		8.4 5.7	7.1	
				Bottom	9	18.7 18.7	18.7	8.2 8.2	8.2	33.2 33.3	33.3	78.2 79.0	78.6	6.0 6.1	6.1	6.1	8.8 8.8	8.8		8.5 5.7	7.1	
11-Mar-15	Cloudy	Moderate	15:29	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	33.2 33.1	33.2	97.4 97.3	97.4	7.5 7.5	7.5	7.4	4.3 4.1	4.2	6.9	8.1 5.2	6.7	6.0
				Middle	5	18.7 18.7	18.7	8.2 8.2	8.2	34.0 34.0	34.0	94.0 94.0	94.0	7.2 7.2	7.2		5.7 5.4	5.6		4.7 7.9	6.3	
				Bottom	9	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	93.6 93.6	93.6	7.2 7.2	7.2	7.2	11.0 11.0	11.0		5.9 3.9	4.9	
13-Mar-15	Cloudy	Moderate	17:35	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	32.3 32.2	32.3	68.6 68.7	68.7	5.3 5.3	5.3	5.3	2.6 2.6	2.6	3.0	1.5 2.5	2.0	1.6
				Middle	4	18.5 18.5	18.5	8.2 8.2	8.2	32.6 32.5	32.6	68.5 68.8	68.7	5.3 5.3	5.3		3.3 3.1	3.2		1.5 2.1	1.8	
				Bottom	7	18.5 18.5	18.5	8.2 8.2	8.2	32.8 32.9	32.9	67.9 68.7	68.3	5.2 5.3	5.3	5.3	3.1 3.1	3.1		1.1 1.0	1.1	
17-Mar-15	Fine	Moderate	11:02	Surface	1	20.2 20.1	20.2	8.2 8.2	8.2	31.5 31.5	31.5	82.6 82.5	82.6	6.2 6.2	6.2	6.2	3.8 4.0	3.9	5.3	5.1 4.5	4.8	6.4
				Middle	5	19.6 19.7	19.7	8.2 8.2	8.2	31.8 31.9	31.9	82.1 81.3	81.7	6.2 6.2	6.2		5.5 5.7	5.6		6.1 7.0	6.6	
				Bottom	9	19.2 19.2	19.2	8.2 8.2	8.2	32.3 32.3	32.3	80.5 80.0	80.3	6.1 6.1	6.1	6.1	6.3 6.4	6.4		7.3 8.1	7.7	
19-Mar-15	Fine	Moderate	12:03	Surface	1	20.6 20.7	20.7	8.1 8.1	8.1	31.8 31.6	31.7	99.7 99.2	99.5	7.4 7.4	7.4	7.5	6.7 6.7	6.7	9.0	6.2 4.4	5.3	5.7
				Middle	5	20.3 20.1	20.2	8.1 8.1	8.1	32.2 32.4	32.3	99.4 99.7	99.6	7.4 7.5	7.5		5.3 4.9	5.1		6.5 7.0	6.8	
				Bottom	9	19.7 19.7	19.7	8.1 8.1	8.1	33.1 33.1	33.1	100.3 99.0	99.7	7.6 7.5	7.6	7.6	15.1 15.3	15.2		5.5 4.6	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*
21-Mar-15	Fine	Moderate	12:53	Surface	1	20.6 20.8	20.7	8.2 8.2	8.2	31.2 31.4	31.3	83.0 84.3	83.7	6.2 6.3	6.3	6.1	3.1 3.3	3.2	3.6	20.1 8.6	14.4	9.3
				Middle	4.5	20.1 20.1	20.1	8.2 8.2	8.2	32.2 32.5	32.4	77.7 78.6	78.2	5.8 5.9	5.9		3.4 3.5	3.5		5.8 7.1	6.5	
				Bottom	8	19.8 19.9	19.9	8.2 8.2	8.2	33.3 33.3	33.3	80.4 80.1	80.3	6.0 6.0	6.0	6.0	4.1 4.2	4.2		6.5 7.7	7.1	
23-Mar-15	Cloudy	Moderate	15:17	Surface	1	20.6 20.5	20.6	8.2 8.2	8.2	28.8 30.8	29.8	85.1 88.8	87.0	6.5 6.7	6.6	6.8	5.4 5.4	5.4	8.2	10.2 9.6	9.9	5.5
				Middle	4	20.4 20.4	20.4	8.2 8.2	8.2	26.5 31.7	29.1	90.5 89.8	90.2	7.0 6.7	6.9		7.7 7.7	7.7		4.1 2.7	3.4	
				Bottom	7	20.2 20.3	20.3	8.2 8.2	8.2	31.9 32.0	32.0	88.4 91.7	90.1	6.6 6.9	6.8	6.8	12.6 10.1	11.4		3.0 3.5	3.3	
25-Mar-15	Cloudy	Moderate	15:41	Surface	1	20.2 20.2	20.2	8.2 8.2	8.2	34.1 34.1	34.1	86.0 85.5	85.8	6.4 6.3	6.4	6.4	4.4 4.3	4.4	4.9	6.1 4.3	5.2	5.1
				Middle	5	20.2 20.2	20.2	8.2 8.2	8.2	34.4 34.3	34.4	86.8 86.1	86.5	6.4 6.4	6.4		3.6 3.3	3.5		4.9 5.6	5.3	
				Bottom	9	20.2 20.2	20.2	8.2 8.2	8.2	34.9 34.8	34.9	85.9 86.0	86.0	6.3 6.4	6.4	6.4	6.9 6.4	6.7		6.6 3.0	4.8	
27-Mar-15	Cloudy	Moderate	17:35	Surface	1	20.5 20.4	20.5	8.2 8.2	8.2	33.0 33.0	33.0	98.6 104.4	101.5	7.3 7.8	7.6	7.5	7.4 8.1	7.8	8.8	2.1 1.2	1.7	2.1
				Middle	4.5	20.3 20.2	20.3	8.2 8.2	8.2	33.7 33.9	33.8	101.7 99.0	100.4	7.5 7.3	7.4		9.5 8.6	9.1		2.1 1.2	1.7	
				Bottom	8	20.2 20.2	20.2	8.2 8.2	8.2	34.2 34.2	34.2	100.8 98.7	99.8	7.5 7.3	7.4	7.4	9.6 9.3	9.5		1.0 4.9	3.0	
31-Mar-15	Cloudy	Moderate	11:04	Surface	1	22.2 22.3	22.3	8.3 8.3	8.3	26.6 26.4	26.5	98.9 100.2	99.6	7.4 7.5	7.5	7.4	2.5 2.6	2.6	2.5	9.8 6.6	8.2	7.3
				Middle	5	21.4 21.3	21.4	8.2 8.2	8.2	31.5 31.5	31.5	100.7 96.4	98.6	7.4 7.1	7.3		1.8 1.9	1.9		6.0 7.2	6.6	
				Bottom	9	20.9 20.8	20.9	8.2 8.2	8.2	33.6 33.7	33.7	91.4 87.5	89.5	6.7 6.4	6.6	6.6	2.7 3.2	3.0		7.8 6.6	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 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*
2-Mar-15	Fine	Moderate	16:04	Surface	1	19.0 19.1	19.1	8.2 8.2	8.2	33.2 33.2	33.2	81.1 82.3	81.7	6.2 6.3	6.3	6.3	5.0 4.7	4.9	5.6	3.1 3.2	3.2	3.1
				Middle	5	18.7 18.7	18.7	8.2 8.2	8.2	33.2 33.2	33.2	81.0 82.3	81.7	6.2 6.3	6.3		5.9 4.9	5.4		3.1 3.5	3.3	
				Bottom	9	18.7 18.7	18.7	8.2 8.2	8.2	33.2 33.2	33.2	80.5 79.7	80.1	6.2 6.1	6.2	6.2	5.8 7.0	6.4		3.3 2.3	2.8	
4-Mar-15	Fine	Moderate	17:34	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	31.3 31.3	31.3	86.8 87.8	87.3	6.7 6.8	6.8	7.0	5.5 5.7	5.6	7.1	3.9 2.0	3.0	3.7
				Middle	5	18.6 18.5	18.6	8.1 8.1	8.1	32.4 32.5	32.5	91.6 91.0	91.3	7.1 7.0	7.1		6.6 6.7	6.7		5.2 3.1	4.2	
				Bottom	9	18.5 18.5	18.5	8.1 8.1	8.1	32.4 32.4	32.4	91.5 92.0	91.8	7.1 7.1	7.1	7.1	8.1 9.6	8.9		3.0 5.0	4.0	
6-Mar-15	Cloudy	Moderate	19:09	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	31.6 31.6	31.6	78.1 77.2	77.7	6.0 6.0	6.0	6.0	6.2 5.9	6.1	9.4	7.1 5.2	6.2	5.0
				Middle	5	18.7 18.7	18.7	8.2 8.2	8.2	32.1 32.2	32.2	77.5 77.2	77.4	6.0 6.0	6.0		5.0 5.3	5.2		5.0 2.6	3.8	
				Bottom	9	18.6 18.6	18.6	8.2 8.2	8.2	32.5 32.5	32.5	77.2 77.3	77.3	6.0 6.0	6.0	6.0	16.0 17.6	16.8		5.4 4.3	4.9	
9-Mar-15	Cloudy	Moderate	09:15	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	30.3 30.2	30.3	79.8 80.5	80.2	6.2 6.3	6.3	6.3	6.0 6.4	6.2	13.4	18.5 6.4	12.5	14.7
				Middle	5	18.8 18.8	18.8	8.2 8.2	8.2	32.5 32.6	32.6	80.7 80.6	80.7	6.2 6.2	6.2		15.6 15.5	15.6		8.3 21.0	14.7	
				Bottom	9	18.8 18.8	18.8	8.2 8.2	8.2	32.2 32.3	32.3	80.7 80.5	80.6	6.2 6.2	6.2	6.2	18.4 18.5	18.5		21.0 12.8	16.9	
11-Mar-15	Cloudy	Moderate	10:34	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	32.2 32.2	32.2	94.7 94.7	94.7	7.3 7.3	7.3	7.3	4.2 4.2	4.2	6.6	6.2 3.3	4.8	5.5
				Middle	5	18.6 18.6	18.6	8.2 8.2	8.2	32.4 32.4	32.4	94.2 94.1	94.2	7.3 7.3	7.3		4.4 4.5	4.5		5.5 6.8	6.2	
				Bottom	9	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	93.6 93.6	93.6	7.2 7.2	7.2	7.2	11.0 11.0	11.0		5.8 5.0	5.4	
13-Mar-15	Cloudy	Moderate	11:08	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	32.9 32.9	32.9	74.2 74.4	74.3	5.7 5.7	5.7	5.7	3.7 3.8	3.8	6.0	1.2 1.9	1.6	3.0
				Middle	4	18.6 18.6	18.6	8.2 8.2	8.2	33.1 33.0	33.1	73.6 74.1	73.9	5.7 5.7	5.7		5.7 5.6	5.7		2.9 2.2	2.6	
				Bottom	7	18.5 18.5	18.5	8.2 8.2	8.2	33.1 33.1	33.1	73.6 72.8	73.2	5.7 5.6	5.7	5.7	8.5 8.6	8.6		6.2 3.4	4.8	
17-Mar-15	Fine	Moderate	15:53	Surface	1	19.0 18.9	19.0	8.2 8.2	8.2	32.5 33.0	32.8	73.4 76.7	75.1	5.6 5.9	5.8	5.8	6.7 6.5	6.6	8.9	10.1 10.4	10.3	17.0
				Middle	5.5	18.7 18.7	18.7	8.2 8.2	8.2	33.0 33.1	33.1	75.1 75.1	75.1	5.8 5.8	5.8		7.5 7.4	7.5		18.0 19.4	18.7	
				Bottom	10	18.7 18.7	18.7	8.2 8.2	8.2	33.1 33.2	33.2	74.9 75.2	75.1	5.7 5.8	5.8	5.8	13.0 12.4	12.7		22.2 21.8	22.0	
19-Mar-15	Fine	Moderate	18:15	Surface	1	20.5 20.8	20.7	8.1 8.1	8.1	31.5 30.9	31.2	95.7 94.8	95.3	7.2 7.1	7.2	7.2	5.7 5.8	5.8	9.9	6.4 7.0	6.7	10.5
				Middle	5	20.4 20.4	20.4	8.1 8.1	8.1	32.1 32.1	32.1	96.2 95.5	95.9	7.2 7.1	7.2		7.4 7.4	7.4		9.9 8.6	9.3	
				Bottom	9	20.2 20.1	20.2	8.1 8.1	8.1	32.4 32.4	32.4	96.0 94.5	95.3	7.2 7.1	7.2	7.2	16.6 16.1	16.4		14.8 16.3	15.6	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at 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-Mar-15	Fine	Moderate	19:42	Surface	1	21.0 21.0	21.0	8.1 8.1	8.1	29.3 30.5	29.9	80.6 78.3	79.5	6.1 5.8	6.0	6.2	11.0 11.8	11.4	12.0	12.8 14.5	13.7	14.5
				Middle	3.5	21.0 21.0	21.0	8.1 8.1	8.1	32.5 28.9	30.7	83.6 84.5	84.1	6.2 6.4	6.3		12.2 11.4	11.8		19.2 16.8	18.0	
				Bottom	6	20.9 20.9	20.9	8.1 8.1	8.1	29.6 30.9	30.3	77.2 75.6	76.4	5.8 5.6	5.7	5.7	13.2 12.4	12.8		14.5 9.0	11.8	
23-Mar-15	Cloudy	Moderate	09:19	Surface	1	20.2 20.1	20.2	8.2 8.2	8.2	29.2 29.0	29.1	92.9 89.9	91.4	7.1 6.9	7.0	6.9	4.3 4.3	4.3	6.6	28.7 27.7	28.2	32.9
				Middle	5	20.1 20.2	20.2	8.2 8.2	8.2	33.1 29.5	31.3	90.3 89.9	90.1	6.7 6.9	6.8		6.5 6.4	6.5		49.3 28.7	39.0	
				Bottom	9	20.1 20.1	20.1	8.2 8.2	8.2	28.9 29.1	29.0	88.8 85.7	87.3	6.8 6.6	6.7	6.7	8.9 9.1	9.0		24.0 39.0	31.5	
25-Mar-15	Cloudy	Moderate	09:41	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	33.4 33.4	33.4	88.5 88.4	88.5	6.6 6.6	6.6	6.6	3.5 3.7	3.6	9.1	2.6 3.7	3.2	5.8
				Middle	5	20.2 20.3	20.3	8.1 8.1	8.1	33.7 33.8	33.8	88.3 88.2	88.3	6.6 6.5	6.6		8.2 8.3	8.3		5.5 2.3	3.9	
				Bottom	9	20.3 20.3	20.3	8.1 8.1	8.1	33.9 33.9	33.9	88.3 88.1	88.2	6.5 6.5	6.5	6.5	15.4 15.2	15.3		10.9 9.9	10.4	
27-Mar-15	Cloudy	Moderate	10:36	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	31.1 31.4	31.3	98.5 101.2	99.9	7.4 7.6	7.5	7.4	10.4 10.3	10.4	10.2	4.4 2.7	3.6	3.6
				Middle	4.5	20.2 20.2	20.2	8.2 8.2	8.2	33.7 33.7	33.7	100.6 94.6	97.6	7.5 7.0	7.3		9.8 9.2	9.5		2.0 3.1	2.6	
				Bottom	8	20.2 20.2	20.2	8.2 8.2	8.2	33.8 33.8	33.8	107.5 99.7	103.6	8.0 7.4	7.7	7.7	11.7 9.7	10.7		4.6 4.4	4.5	
31-Mar-15	Cloudy	Moderate	15:53	Surface	1	22.9 22.9	22.9	8.3 8.3	8.3	26.1 26.1	26.1	104.5 108.3	106.4	7.7 8.0	7.9	7.5	4.6 3.8	4.2	3.3	5.2 8.8	7.0	6.0
				Middle	5	21.3 21.3	21.3	8.2 8.2	8.2	31.8 31.8	31.8	97.0 94.5	95.8	7.2 7.0	7.1		2.9 2.9	2.9		4.2 6.4	5.3	
				Bottom	9	21.1 21.0	21.1	8.2 8.2	8.2	32.4 32.7	32.6	91.0 88.1	89.6	6.7 6.5	6.6	6.6	2.9 2.9	2.9		6.4 5.0	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 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*
2-Mar-15	Fine	Moderate	11:37	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	31.6 31.7	31.7	87.1 88.4	87.8	6.7 6.8	6.8	6.8	2.4 2.7	2.6	3.4	4.9 2.5	3.7	4.0
				Middle	3.5	18.4 18.4	18.4	8.1 8.1	8.1	33.0 32.9	33.0	86.2 86.5	86.4	6.7 6.7	6.7		3.4 3.5	3.5		4.7 3.6	4.2	
				Bottom	6	18.4 18.4	18.4	8.1 8.1	8.1	33.2 33.2	33.2	80.4 81.5	81.0	6.2 6.3	6.3	6.3	3.8 4.1	4.0		2.7 5.3	4.0	
4-Mar-15	Fine	Moderate	12:15	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	31.2 31.3	31.3	86.7 87.4	87.1	6.7 6.8	6.8	6.9	4.6 4.4	4.5	5.3	23.8 22.8	23.3	11.3
				Middle	3.5	18.8 18.8	18.8	8.2 8.2	8.2	31.5 31.4	31.5	88.7 88.5	88.6	6.9 6.8	6.9		4.9 4.4	4.7		5.2 5.0	5.1	
				Bottom	6	18.7 18.7	18.7	8.2 8.2	8.2	32.1 32.0	32.1	88.3 88.0	88.2	6.8 6.8	6.8	6.8	6.6 6.5	6.6		5.8 5.0	5.4	
6-Mar-15	Cloudy	Moderate	14:02	Surface	1	18.7 18.7	18.7	8.1 8.2	8.2	32.5 32.5	32.5	70.5 71.4	71.0	5.4 5.5	5.5	5.6	4.4 4.7	4.6	5.9	2.5 4.9	3.7	4.3
				Middle	3.5	18.7 18.7	18.7	8.2 8.2	8.2	32.7 32.6	32.7	73.1 74.1	73.6	5.6 5.7	5.7		4.9 4.7	4.8		4.8 5.3	5.1	
				Bottom	6	18.6 18.5	18.6	8.2 8.2	8.2	33.5 33.5	33.5	74.5 74.7	74.6	5.7 5.7	5.7	5.7	7.9 8.8	8.4		3.7 4.7	4.2	
9-Mar-15	Cloudy	Moderate	14:54	Surface	1	19.5 19.5	19.5	8.2 8.2	8.2	31.0 31.0	31.0	71.3 72.9	72.1	5.5 5.6	5.6	5.9	5.0 5.0	5.0	6.1	3.9 4.7	4.3	5.2
				Middle	3.5	18.9 18.9	18.9	8.2 8.2	8.2	32.0 32.0	32.0	78.9 80.0	79.5	6.1 6.2	6.2		6.3 6.4	6.4		6.2 4.8	5.5	
				Bottom	6	18.8 18.8	18.8	8.2 8.2	8.2	32.2 32.3	32.3	82.0 81.9	82.0	6.3 6.3	6.3	6.3	7.0 6.9	7.0		6.4 5.3	5.9	
11-Mar-15	Cloudy	Moderate	15:38	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	32.2 32.2	32.2	94.7 94.7	94.7	7.3 7.3	7.3	7.4	4.2 4.2	4.2	6.1	9.8 13.2	11.5	10.0
				Middle	3.5	18.6 18.6	18.6	8.1 8.1	8.1	33.3 33.3	33.3	97.1 97.0	97.1	7.4 7.4	7.4		3.9 3.9	3.9		7.7 8.3	8.0	
				Bottom	6	18.7 18.7	18.7	8.2 8.2	8.2	33.6 33.6	33.6	92.0 91.8	91.9	7.0 7.0	7.0	7.0	10.1 10.3	10.2		10.9 9.9	10.4	
13-Mar-15	Cloudy	Moderate	17:50	Surface	1	18.5 18.6	18.6	8.2 8.2	8.2	32.7 32.7	32.7	66.3 67.3	66.8	5.1 5.2	5.2	5.2	2.5 2.7	2.6	2.6	2.4 1.2	1.8	2.7
				Middle	3	18.6 18.6	18.6	8.2 8.2	8.2	32.7 32.7	32.7	67.4 67.8	67.6	5.2 5.2	5.2		2.3 2.3	2.3		2.0 3.0	2.5	
				Bottom	5	18.6 18.6	18.6	8.2 8.2	8.2	32.8 32.9	32.9	67.6 65.7	66.7	5.2 5.1	5.2	5.2	2.7 3.0	2.9		2.1 5.2	3.7	
17-Mar-15	Fine	Moderate	11:11	Surface	1	20.4 20.4	20.4	8.2 8.2	8.2	31.3 31.4	31.4	79.5 79.2	79.4	6.0 6.0	6.0	6.0	3.7 3.5	3.6	4.1	5.0 3.4	4.2	5.9
				Middle	3	20.0 19.9	20.0	8.2 8.2	8.2	31.5 31.6	31.6	78.7 78.8	78.8	5.9 6.0	6.0		4.1 4.6	4.4		5.1 3.4	4.3	
				Bottom	5	19.3 19.3	19.3	8.2 8.2	8.2	30.1 32.3	31.2	76.3 76.4	76.4	5.9 5.8	5.9	5.9	4.3 4.4	4.4		5.9 12.2	9.1	
19-Mar-15	Fine	Moderate	12:14	Surface	1	20.8 20.6	20.7	8.1 8.1	8.1	31.0 31.3	31.2	99.6 99.2	99.4	7.4 7.4	7.4	7.5	8.0 8.2	8.1	8.8	7.2 8.1	7.7	9.5
				Middle	3.5	19.9 20.5	20.2	8.1 8.1	8.1	32.8 31.5	32.2	100.6 98.3	99.5	7.6 7.4	7.5		8.9 8.9	8.9		7.9 5.7	6.8	
				Bottom	6	19.8 19.8	19.8	8.1 8.1	8.1	33.0 33.0	33.0	100.5 99.0	99.8	7.6 7.4	7.5	7.5	9.0 9.6	9.3		12.2 15.6	13.9	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at 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-Mar-15	Fine	Moderate	13:01	Surface	1	20.4 20.5	20.5	8.2 8.2	8.2	31.4 31.4	31.4	86.9 85.8	86.4	6.5 6.4	6.5	6.4	5.2 6.1	5.7	6.2	9.1 10.2	9.7	8.9
				Middle	3	20.2 20.2	20.2	8.2 8.2	8.2	31.9 32.1	32.0	81.6 82.3	82.0	6.1 6.2	6.2		5.4 5.3	5.4		8.8 7.7	8.3	
				Bottom	5	20.2 20.0	20.1	8.2 8.2	8.2	32.1 33.0	32.6	81.6 82.9	82.3	6.1 6.2	6.2	6.2	7.5 7.6	7.6		6.4 11.0	8.7	
23-Mar-15	Cloudy	Moderate	15:30	Surface	1	21.0 21.0	21.0	8.2 8.2	8.2	31.3 31.4	31.4	86.9 91.3	89.1	6.5 6.8	6.7	6.8	7.5 7.3	7.4	7.6	5.8 4.8	5.3	8.8
				Middle	3.5	20.6 20.6	20.6	8.2 8.2	8.2	32.6 32.6	32.6	92.0 89.6	90.8	6.8 6.7	6.8		5.3 6.0	5.7		7.6 10.7	9.2	
				Bottom	6	20.5 20.4	20.5	8.2 8.2	8.2	32.9 33.2	33.1	89.0 91.4	90.2	6.6 6.8	6.7	6.7	9.0 10.5	9.8		11.4 12.4	11.9	
25-Mar-15	Cloudy	Moderate	15:48	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	33.6 33.5	33.6	85.3 84.6	85.0	6.3 6.3	6.3	6.3	4.3 3.9	4.1	3.8	7.5 2.4	5.0	5.9
				Middle	3.5	20.2 20.2	20.2	8.2 8.2	8.2	34.2 34.2	34.2	85.6 85.1	85.4	6.3 6.3	6.3		3.5 3.1	3.3		3.7 5.4	4.6	
				Bottom	6	20.2 20.2	20.2	8.2 8.2	8.2	34.6 34.6	34.6	86.0 85.8	85.9	6.4 6.3	6.4	6.4	4.2 3.8	4.0		7.0 8.9	8.0	
27-Mar-15	Cloudy	Moderate	17:46	Surface	1	20.6 20.5	20.6	8.1 8.2	8.2	32.5 32.7	32.6	99.3 106.2	102.8	7.4 7.9	7.7	7.6	7.9 7.8	7.9	8.9	3.9 2.2	3.1	3.1
				Middle	3	20.4 20.4	20.4	8.2 8.2	8.2	33.2 33.1	33.2	105.1 97.5	101.3	7.8 7.2	7.5		8.2 9.7	9.0		2.6 2.5	2.6	
				Bottom	5	20.3 20.2	20.3	8.2 8.2	8.2	33.6 33.8	33.7	101.4 96.2	98.8	7.5 7.1	7.3	7.3	10.6 8.8	9.7		3.3 3.7	3.5	
31-Mar-15	Cloudy	Moderate	11:15	Surface	1	22.1 22.0	22.1	8.2 8.2	8.2	27.5 27.9	27.7	87.6 89.1	88.4	6.5 6.6	6.6	6.5	4.6 4.8	4.7	4.6	7.4 5.2	6.3	4.0
				Middle	3	21.1 21.1	21.1	8.2 8.2	8.2	32.5 32.3	32.4	87.9 85.8	86.9	6.5 6.3	6.4		4.4 4.3	4.4		2.8 4.8	3.8	
				Bottom	5	21.0 21.0	21.0	8.2 8.2	8.2	33.0 33.0	33.0	82.8 81.1	82.0	6.1 6.0	6.1	6.1	4.7 4.9	4.8		2.2 1.7	2.0	

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

Water Quality Monitoring Results at 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*
2-Mar-15	Fine	Moderate	16:10	Surface	1	19.1 19.1	19.1	8.2 8.2	8.2	33.3 33.3	33.3	80.9 81.5	81.2	6.2 6.2	6.2	6.3	4.8 4.6	4.7	5.4	3.1 3.6	3.4	2.4
				Middle	3	18.7 18.7	18.7	8.2 8.2	8.2	33.3 33.3	33.3	81.4 82.0	81.7	6.2 6.3	6.3		5.3 5.4	5.4		2.0 2.5	2.3	
				Bottom	5	18.7 18.7	18.7	8.2 8.2	8.2	33.3 33.3	33.3	80.6 80.1	80.4	6.2 6.1	6.2	6.2	5.9 6.4	6.2		2.0 1.1	1.6	
4-Mar-15	Fine	Moderate	17:42	Surface	1	18.7 18.8	18.8	8.1 8.1	8.1	30.7 30.7	30.7	82.5 82.9	82.7	6.4 6.4	6.4	6.6	5.2 4.5	4.9	6.4	3.4 3.4	3.4	3.4
				Middle	3	18.6 18.7	18.7	8.1 8.1	8.1	31.7 31.4	31.6	86.2 86.1	86.2	6.7 6.7	6.7		5.2 4.3	4.8		2.5 3.8	3.2	
				Bottom	5	18.6 18.6	18.6	8.1 8.1	8.1	31.9 31.9	31.9	86.4 85.9	86.2	6.7 6.6	6.7	6.7	9.5 9.3	9.4		4.2 2.9	3.6	
6-Mar-15	Cloudy	Moderate	19:22	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	31.8 31.8	31.8	73.1 73.6	73.4	5.6 5.7	5.7	5.7	5.8 5.1	5.5	6.3	4.5 3.8	4.2	4.4
				Middle	3	18.8 18.8	18.8	8.1 8.1	8.1	32.0 32.1	32.1	73.3 73.2	73.3	5.6 5.6	5.6		4.6 4.8	4.7		5.3 3.2	4.3	
				Bottom	5	18.7 18.6	18.7	8.2 8.2	8.2	32.9 33.1	33.0	73.7 74.3	74.0	5.7 5.7	5.7	5.7	8.7 8.7	8.7		6.7 2.9	4.8	
9-Mar-15	Cloudy	Moderate	09:26	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	32.3 32.3	32.3	76.5 76.7	76.6	5.9 5.9	5.9	5.9	7.5 7.8	7.7	12.0	11.5 11.9	11.7	10.6
				Middle	3	18.8 18.8	18.8	8.2 8.2	8.2	32.6 32.6	32.6	75.5 75.6	75.6	5.8 5.8	5.8		11.5 11.7	11.6		10.3 9.9	10.1	
				Bottom	5	18.8 18.8	18.8	8.2 8.2	8.2	32.8 32.8	32.8	75.3 75.9	75.6	5.8 5.8	5.8	5.8	16.7 16.4	16.6		8.8 11.4	10.1	
11-Mar-15	Cloudy	Moderate	10:45	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	33.4 33.4	33.4	93.3 93.4	93.4	7.1 7.2	7.2	7.1	9.0 9.5	9.3	10.0	6.7 7.5	7.1	6.5
				Middle	3	18.7 18.7	18.7	8.2 8.2	8.2	33.7 33.6	33.7	92.0 92.0	92.0	7.0 7.0	7.0		10.3 10.1	10.2		6.1 5.1	5.6	
				Bottom	5	18.7 18.7	18.7	8.2 8.2	8.2	33.6 33.6	33.6	91.8 91.8	91.8	7.0 7.0	7.0	7.0	10.3 10.6	10.5		6.1 7.6	6.9	
13-Mar-15	Cloudy	Moderate	11:29	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	32.0 32.0	32.0	69.8 68.2	69.0	5.4 5.3	5.4	5.4	6.9 6.9	6.9	6.6	2.7 4.7	3.7	4.2
				Middle	3	18.6 18.6	18.6	8.1 8.1	8.1	32.1 32.0	32.1	68.3 70.6	69.5	5.3 5.5	5.4		6.6 6.4	6.5		2.9 4.1	3.5	
				Bottom	5	18.6 18.7	18.7	8.1 8.2	8.2	32.3 32.6	32.5	69.0 69.2	69.1	5.3 5.3	5.3	5.3	6.6 6.0	6.3		3.3 7.6	5.5	
17-Mar-15	Fine	Moderate	16:04	Surface	1	19.9 19.9	19.9	8.2 8.2	8.2	31.6 31.6	31.6	83.1 83.1	83.1	6.3 6.3	6.3	6.0	5.4 6.3	5.9	8.8	9.8 11.1	10.5	9.8
				Middle	3	19.3 19.3	19.3	8.2 8.2	8.2	31.8 31.9	31.9	74.6 73.8	74.2	5.7 5.6	5.7		8.2 7.6	7.9		9.5 8.8	9.2	
				Bottom	5	19.2 19.2	19.2	8.2 8.2	8.2	32.0 32.0	32.0	71.3 73.6	72.5	5.5 5.6	5.6	5.6	13.1 12.1	12.6		11.4 8.2	9.8	
19-Mar-15	Fine	Moderate	18:24	Surface	1	20.5 20.5	20.5	8.1 8.1	8.1	31.0 31.0	31.0	91.9 90.6	91.3	6.9 6.8	6.9	6.9	6.1 5.5	5.8	11.2	7.9 8.8	8.4	39.6
				Middle	3.5	20.3 20.3	20.3	8.1 8.1	8.1	31.8 31.8	31.8	92.0 91.1	91.6	6.9 6.8	6.9		10.8 10.8	10.8		20.5 22.5	21.5	
				Bottom	6	20.2 20.2	20.2	8.1 8.1	8.1	32.0 32.0	32.0	91.8 91.5	91.7	6.9 6.9	6.9	6.9	15.2 18.5	16.9		82.0 96.0	89.0	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at 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-Mar-15	Fine	Moderate	19:53	Surface	1	19.8 21.2	20.5	8.2 8.0	8.1	31.5 30.5	31.0	92.7 100.6	96.7	7.0 7.5	7.3	7.4	10.3 10.3	10.3	11.7	22.5 24.3	23.4	20.8
				Middle	3.5	20.1 21.2	20.7	8.2 8.0	8.1	30.6 27.6	29.1	95.6 100.0	97.8	7.2 7.6	7.4		12.6 12.1	12.4		17.7 14.2	16.0	
				Bottom	6	19.9 21.2	20.6	8.2 8.0	8.1	31.6 30.5	31.1	103.0 99.6	101.3	7.8 7.4	7.6	7.6	12.4 12.5	12.5		10.7 35.5	23.1	
23-Mar-15	Cloudy	Moderate	09:31	Surface	1	20.0 20.1	20.1	8.2 8.2	8.2	29.2 29.3	29.3	86.8 87.9	87.4	6.7 6.7	6.7	6.8	3.8 4.6	4.2	6.6	42.7 44.7	43.7	51.8
				Middle	3.5	20.0 20.0	20.0	8.2 8.2	8.2	29.3 30.6	30.0	88.7 90.3	89.5	6.8 6.9	6.9		5.5 6.3	5.9		40.0 57.3	48.7	
				Bottom	6	20.0 20.0	20.0	8.2 8.2	8.2	29.2 30.9	30.1	87.1 85.0	86.1	6.7 6.4	6.6	6.6	9.7 9.9	9.8		67.7 58.3	63.0	
25-Mar-15	Cloudy	Moderate	09:49	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	31.8 32.4	32.1	85.3 85.2	85.3	6.4 6.4	6.4	6.4	4.1 4.4	4.3	6.7	4.7 5.6	5.2	4.8
				Middle	3.5	20.4 20.4	20.4	8.1 8.1	8.1	32.8 32.9	32.9	85.5 85.2	85.4	6.4 6.3	6.4		5.2 6.0	5.6		5.7 3.7	4.7	
				Bottom	6	20.4 20.4	20.4	8.1 8.1	8.1	33.0 33.0	33.0	85.4 85.3	85.4	6.4 6.3	6.4	6.4	10.2 10.1	10.2		5.6 3.2	4.4	
27-Mar-15	Cloudy	Moderate	10:48	Surface	1	20.4 20.3	20.4	8.1 8.1	8.1	31.4 32.7	32.1	102.6 96.3	99.5	7.7 7.2	7.5	7.5	9.1 9.6	9.4	10.3	4.5 4.5	4.5	3.9
				Middle	3	20.3 19.9	20.1	8.1 8.2	8.2	32.6 30.6	31.6	99.2 98.1	98.7	7.4 7.5	7.5		12.0 11.1	11.6		3.0 3.6	3.3	
				Bottom	5	20.4 19.3	19.9	8.1 6.0	7.1	31.4 31.3	31.4	97.4 95.5	96.5	7.3 7.3	7.3	7.3	9.2 10.7	10.0		4.1 3.4	3.8	
31-Mar-15	Cloudy	Moderate	16:02	Surface	1	22.5 22.5	22.5	8.2 8.2	8.2	27.4 27.4	27.4	100.9 101.9	101.4	7.5 7.5	7.5	7.5	2.7 2.8	2.8	3.0	5.8 9.2	7.5	7.1
				Middle	3.5	21.7 21.5	21.6	8.2 8.2	8.2	31.2 31.4	31.3	102.2 100.4	101.3	7.5 7.4	7.5		3.6 3.2	3.4		12.0 4.7	8.4	
				Bottom	6	21.0 20.9	21.0	8.1 8.1	8.1	33.2 33.3	33.3	92.3 89.4	90.9	6.8 6.6	6.7	6.7	2.8 2.6	2.7		5.4 5.6	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 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*
2-Mar-15	Fine	Moderate	10:53	Surface	1	18.7 18.6	18.7	8.1 8.2	8.2	31.6 31.8	31.7	96.8 97.1	97.0	7.5 7.5	7.5	7.5	3.0 2.9	3.0	4.1	4.2 3.5	3.9	3.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.9	18.3 18.3	18.3	8.2 8.2	8.2	33.6 33.7	33.7	95.1 95.5	95.3	7.3 7.4	7.4	7.4	5.2 5.1	5.2		2.4 4.6	3.5	
4-Mar-15	Fine	Moderate	12:30	Surface	1	18.4 18.4	18.4	8.2 8.2	8.2	33.6 33.6	33.6	77.7 77.9	77.8	6.0 6.0	6.0	6.0	5.0 5.1	5.1	5.3	8.8 7.7	8.3	8.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.6	18.4 18.4	18.4	8.2 8.2	8.2	33.7 33.7	33.7	78.4 77.3	77.9	6.0 5.9	6.0	6.0	5.5 5.4	5.5		8.2 8.0	8.1	
6-Mar-15	Cloudy	Moderate	13:00	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	32.8 32.8	32.8	82.4 82.4	82.4	6.3 6.3	6.3	6.3	10.1 10.8	10.5	7.8	4.8 5.0	4.9	5.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.6	18.8 18.8	18.8	8.1 8.1	8.1	32.3 32.3	32.3	78.7 80.8	79.8	6.1 6.2	6.2	6.2	5.1 5.1	5.1		7.6 4.8	6.2	
9-Mar-15	Cloudy	Moderate	14:41	Surface	1	19.0 19.0	19.0	8.2 8.2	8.2	31.3 31.3	31.3	84.2 84.0	84.1	6.5 6.5	6.5	6.5	4.5 5.4	5.0	6.2	3.2 2.0	2.6	2.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.6	18.7 18.7	18.7	8.2 8.2	8.2	31.7 31.8	31.8	84.7 84.4	84.6	6.5 6.5	6.5	6.5	7.4 7.4	7.4		1.6 3.3	2.5	
11-Mar-15	Cloudy	Moderate	15:39	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	32.4 32.6	32.5	91.5 91.4	91.5	7.0 7.0	7.0	7.0	6.8 6.7	6.8	6.4	16.5 7.4	12.0	9.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.3	18.9 18.9	18.9	8.1 8.1	8.1	33.2 33.2	33.2	91.8 91.5	91.7	7.0 7.0	7.0	7.0	6.1 5.8	6.0		7.1 6.2	6.7	
13-Mar-15	Cloudy	Moderate	17:02	Surface	1	18.5 18.5	18.5	8.2 8.2	8.2	31.9 32.0	32.0	97.7 97.7	97.7	7.6 7.6	7.6	7.6	2.4 2.4	2.4	2.6	3.6 3.3	3.5	3.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.6	18.5 18.5	18.5	8.2 8.2	8.2	32.5 32.3	32.4	98.1 98.1	98.1	7.6 7.6	7.6	7.6	2.7 2.7	2.7		4.1 2.9	3.5	
17-Mar-15	Fine	Moderate	10:33	Surface	1	19.9 20.1	20.0	8.1 8.1	8.1	30.3 30.2	30.3	79.6 78.8	79.2	6.1 6.0	6.1	6.1	4.5 4.5	4.5	5.0	9.6 4.1	6.9	5.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	19.8 19.8	19.8	8.1 8.1	8.1	30.3 30.3	30.3	79.3 79.3	79.3	6.1 6.1	6.1	6.1	5.4 5.4	5.4		3.5 6.1	4.8	
19-Mar-15	Fine	Moderate	12:37	Surface	1	20.5 20.5	20.5	8.1 8.1	8.1	33.8 33.7	33.8	110.1 107.0	108.6	8.1 7.9	8.0	8.0	6.0 6.1	6.1	6.8	10.6 6.6	8.6	6.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.7	20.1 20.1	20.1	8.1 8.1	8.1	34.0 34.4	34.2	106.1 101.0	103.6	7.9 7.5	7.7	7.7	7.3 7.6	7.5		3.9 5.7	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 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-Mar-15	Fine	Moderate	13:02	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	33.0 33.0	33.0	78.3 77.8	78.1	6.2 6.2	6.2	6.2	4.2 3.6	3.9	3.5	9.6 7.0	8.3	7.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.1	20.3 20.3	20.3	8.1 8.1	8.1	33.3 31.3	32.3	77.7 76.8	77.3	6.1 6.1	6.1	6.1	3.2 2.8	3.0		5.2 7.5	6.4	
23-Mar-15	Cloudy	Moderate	15:06	Surface	1	20.7 20.6	20.7	8.1 8.1	8.1	32.1 32.2	32.2	87.2 86.9	87.1	6.5 6.5	6.5	6.5	5.4 6.6	6.0	8.7	6.8 5.8	6.3	6.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	20.4 20.4	20.4	8.1 8.1	8.1	32.5 32.4	32.5	86.2 86.4	86.3	6.4 6.4	6.4	6.4	11.6 11.2	11.4		5.8 8.2	7.0	
25-Mar-15	Cloudy	Moderate	16:12	Surface	1	20.1 20.2	20.2	8.2 8.2	8.2	33.3 27.8	30.6	91.8 86.4	89.1	6.8 6.6	6.7	6.7	5.8 5.4	5.6	6.1	8.2 5.8	7.0	8.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3	20.1 20.1	20.1	8.2 8.2	8.2	28.3 33.3	30.8	86.6 89.2	87.9	6.7 6.7	6.7	6.7	6.2 6.7	6.5		7.3 12.2	9.8	
27-Mar-15	Cloudy	Moderate	17:38	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	33.4 33.9	33.7	99.0 96.8	97.9	7.3 7.2	7.3	7.3	5.2 5.2	5.2	7.7	1.3 1.4	1.4	2.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4	20.3 20.3	20.3	8.2 8.2	8.2	34.0 33.7	33.9	96.6 96.3	96.5	7.2 7.1	7.2	7.2	10.0 10.2	10.1		1.2 5.8	3.5	
31-Mar-15	Cloudy	Moderate	11:07	Surface	1	22.2 22.5	22.4	8.2 8.2	8.2	31.5 31.8	31.7	101.7 102.0	101.9	7.4 7.4	7.4	7.4	1.9 2.0	2.0	2.6	2.9 5.8	4.4	4.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	22.3 22.3	22.3	8.1 8.1	8.1	31.4 31.4	31.4	99.5 99.8	99.7	7.2 7.2	7.2	7.2	3.3 2.9	3.1		4.8 3.6	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 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*
2-Mar-15	Fine	Moderate	16:42	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	32.2 32.2	32.2	94.1 94.4	94.3	7.2 7.3	7.3	7.3	3.6 3.6	3.6	4.2	3.2 3.1	3.2	3.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.6	18.4 18.4	18.4	8.2 8.2	8.2	32.8 32.8	32.8	95.0 95.6	95.3	7.3 7.4	7.4	7.4	4.9 4.5	4.7		3.7 1.6	2.7	
4-Mar-15	Fine	Moderate	17:58	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	31.8 31.8	31.8	83.2 84.5	83.9	6.4 6.5	6.5	6.5	5.7 5.9	5.8	5.6	3.7 3.5	3.6	3.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.6	18.7 18.7	18.7	8.1 8.1	8.1	31.9 31.9	31.9	84.8 85.7	85.3	6.6 6.6	6.6	6.6	5.6 5.2	5.4		3.0 2.7	2.9	
6-Mar-15	Cloudy	Moderate	19:09	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	81.8 81.8	81.8	6.3 6.3	6.3	6.3	5.0 4.9	5.0	4.8	5.4 9.8	7.6	6.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.6	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	81.9 81.9	81.9	6.3 6.3	6.3	6.3	4.5 4.5	4.5		6.5 4.9	5.7	
9-Mar-15	Cloudy	Moderate	08:32	Surface	1	18.5 18.5	18.5	8.1 8.1	8.1	31.9 31.9	31.9	75.3 76.2	75.8	5.8 5.9	5.9	5.9	8.0 8.6	8.3	10.6	2.0 3.3	2.7	3.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.6	18.4 18.4	18.4	8.1 8.1	8.1	31.9 31.9	31.9	78.4 77.9	78.2	6.1 6.0	6.1	6.1	11.7 13.8	12.8		4.2 4.7	4.5	
11-Mar-15	Cloudy	Moderate	10:27	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	31.8 31.8	31.8	92.5 92.5	92.5	7.1 7.1	7.1	7.1	6.0 5.8	5.9	6.8	6.4 5.8	6.1	6.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.9	18.7 18.7	18.7	8.1 8.1	8.1	32.1 32.0	32.1	92.5 92.4	92.5	7.1 7.1	7.1	7.1	7.9 7.2	7.6		6.1 5.7	5.9	
13-Mar-15	Cloudy	Moderate	10:09	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	32.5 32.5	32.5	77.6 77.5	77.6	6.0 6.0	6.0	6.0	2.7 2.7	2.7	3.1	<0.5 2.2	1.4	1.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.6	18.7 18.7	18.7	8.2 8.2	8.2	33.0 32.6	32.8	76.9 78.9	77.9	5.9 6.1	6.0	6.0	3.3 3.5	3.4		1.6 1.7	1.7	
17-Mar-15	Fine	Moderate	16:49	Surface	1	20.5 20.4	20.5	8.1 8.1	8.1	30.3 30.3	30.3	78.7 79.5	79.1	5.9 6.0	6.0	6.0	8.0 9.6	8.8	8.5	9.3 7.5	8.4	11.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4	20.1 20.2	20.2	8.1 8.1	8.1	30.3 30.3	30.3	76.4 81.5	79.0	5.8 6.2	6.0	6.0	7.8 8.4	8.1		16.5 13.3	14.9	
19-Mar-15	Fine	Moderate	18:27	Surface	1	20.3 20.3	20.3	8.2 8.2	8.2	30.8 31.2	31.0	99.4 100.9	100.2	7.5 7.6	7.6	7.6	6.5 6.4	6.5	7.2	8.0 8.7	8.4	7.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.7	20.0 20.0	20.0	8.2 8.2	8.2	32.6 32.6	32.6	108.3 106.2	107.3	8.1 8.0	8.1	8.1	7.7 7.9	7.8		5.6 5.4	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 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-Mar-15	Fine	Moderate	19:47	Surface	1	20.6 20.4	20.5	8.1 8.2	8.2	31.6 32.2	31.9	80.5 79.3	79.9	6.4 6.3	6.4	6.4	4.6 4.6	4.6	5.2	11.3 17.5	14.4	16.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.1	20.6 20.2	20.4	8.2 8.2	8.2	31.6 32.7	32.2	81.2 79.9	80.6	6.4 6.3	6.4	6.4	5.7 5.9	5.8		28.4 9.2	18.8	
23-Mar-15	Cloudy	Moderate	09:08	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	29.7 29.7	29.7	89.4 89.8	89.6	6.8 6.8	6.8	6.8	14.7 16.9	15.8	15.6	19.4 22.0	20.7	20.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	20.2 20.2	20.2	8.1 8.1	8.1	30.2 30.1	30.2	89.4 89.2	89.3	6.8 6.8	6.8	6.8	15.1 15.5	15.3		23.2 18.2	20.7	
25-Mar-15	Cloudy	Moderate	09:46	Surface	1	20.3 20.3	20.3	8.2 8.2	8.2	29.0 29.0	29.0	92.6 96.5	94.6	7.1 7.4	7.3	7.3	6.5 6.9	6.7	8.5	4.7 17.8	11.3	8.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.1	20.3 20.3	20.3	8.2 8.2	8.2	30.9 30.4	30.7	96.2 96.0	96.1	7.3 7.3	7.3	7.3	10.2 10.2	10.2		6.6 5.9	6.3	
27-Mar-15	Cloudy	Moderate	10:17	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	31.7 32.0	31.9	103.1 103.3	103.2	7.7 7.7	7.7	7.7	14.7 17.1	15.9	13.6	1.8 1.5	1.7	2.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	20.2 20.2	20.2	8.1 8.1	8.1	32.5 32.3	32.4	107.6 104.1	105.9	8.1 7.8	8.0	8.0	11.4 11.2	11.3		3.3 2.8	3.1	
31-Mar-15	Cloudy	Moderate	15:32	Surface	1	21.9 22.2	22.1	8.3 8.3	8.3	30.3 29.1	29.7	101.8 101.6	101.7	7.5 7.5	7.5	7.5	2.1 2.0	2.1	3.1	7.8 11.6	9.7	10.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4	20.7 20.7	20.7	8.2 8.2	8.2	31.0 31.4	31.2	96.8 97.0	96.9	7.2 7.2	7.2	7.2	4.0 3.9	4.0		15.0 8.6	11.8	

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

Water Quality Monitoring Results at 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*
2-Mar-15	Fine	Moderate	11:46	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	31.4 31.5	31.5	70.3 71.1	70.7	5.4 5.5	5.5	5.6	4.9 4.4	4.7	4.3	4.1 4.7	4.4	4.1
				Middle	3	18.5 18.5	18.5	8.1 8.1	8.1	32.5 32.5	32.5	71.5 72.8	72.2	5.5 5.6	5.6		4.5 3.9	4.2		3.1 4.2	3.7	
				Bottom	5	18.5 18.4	18.5	8.1 8.1	8.1	32.6 32.6	32.6	69.7 70.3	70.0	5.4 5.4	5.4	5.4	3.9 4.1	4.0		4.5 3.8	4.2	
4-Mar-15	Fine	Moderate	12:25	Surface	1	18.9 18.9	18.9	8.2 8.2	8.2	31.4 31.4	31.4	77.4 78.6	78.0	6.0 6.1	6.1	6.3	5.6 5.4	5.5	5.4	21.8 15.7	18.8	17.4
				Middle	3.5	18.9 18.9	18.9	8.1 8.1	8.1	31.5 31.5	31.5	82.7 81.3	82.0	6.4 6.3	6.4		5.3 5.3	5.3		18.6 13.5	16.1	
				Bottom	6	18.9 18.9	18.9	8.1 8.1	8.1	31.5 31.5	31.5	84.9 85.9	85.4	6.6 6.6	6.6	6.6	5.5 5.3	5.4		11.7 23.0	17.4	
6-Mar-15	Cloudy	Moderate	14:20	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	33.3 33.2	33.3	67.6 68.5	68.1	5.2 5.3	5.3	5.4	7.1 7.2	7.2	7.9	4.7 4.1	4.4	4.1
				Middle	3.5	18.6 18.6	18.6	8.2 8.2	8.2	33.2 33.2	33.2	70.2 70.6	70.4	5.4 5.4	5.4		7.8 7.7	7.8		2.3 4.4	3.4	
				Bottom	6	18.6 18.6	18.6	8.2 8.2	8.2	33.2 33.3	33.3	71.9 72.3	72.1	5.5 5.5	5.5	5.5	8.1 9.1	8.6		5.5 3.4	4.5	
9-Mar-15	Cloudy	Moderate	15:04	Surface	1	19.6 19.6	19.6	8.2 8.2	8.2	31.3 31.4	31.4	77.3 76.9	77.1	5.9 5.9	5.9	6.1	6.1 6.1	6.1	9.3	6.2 4.7	5.5	5.0
				Middle	3	19.1 19.1	19.1	8.2 8.2	8.2	31.8 31.8	31.8	79.8 81.2	80.5	6.1 6.2	6.2		10.1 10.4	10.3		4.9 5.7	5.3	
				Bottom	5	18.9 18.9	18.9	8.1 8.1	8.1	31.9 31.9	31.9	83.7 83.8	83.8	6.4 6.4	6.4	6.4	11.7 11.4	11.6		4.3 4.3	4.3	
11-Mar-15	Cloudy	Moderate	15:51	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	33.6 33.6	33.6	99.6 99.3	99.5	7.6 7.6	7.6	7.5	16.6 16.9	16.8	10.7	14.4 9.8	12.1	11.5
				Middle	3.5	18.6 18.6	18.6	8.2 8.2	8.2	32.4 32.4	32.4	94.2 94.1	94.2	7.3 7.3	7.3		4.4 4.5	4.5		12.9 6.2	9.6	
				Bottom	6	18.6 18.6	18.6	8.1 8.1	8.1	33.5 33.5	33.5	96.9 97.1	97.0	7.4 7.4	7.4	7.4	10.8 10.9	10.9		15.0 10.3	12.7	
13-Mar-15	Cloudy	Moderate	18:05	Surface	1	18.6 18.6	18.6	8.2 8.1	8.2	32.9 32.8	32.9	68.6 68.4	68.5	5.3 5.3	5.3	5.3	3.9 4.1	4.0	4.1	3.9 4.2	4.1	5.0
				Middle	3	18.6 18.6	18.6	8.1 8.1	8.1	32.9 32.8	32.9	68.8 68.7	68.8	5.3 5.3	5.3		4.2 4.0	4.1		5.2 4.4	4.8	
				Bottom	5	18.6 18.6	18.6	8.1 8.1	8.1	32.9 32.9	32.9	68.7 68.5	68.6	5.3 5.3	5.3	5.3	4.2 4.0	4.1		7.0 5.1	6.1	
17-Mar-15	Fine	Moderate	11:20	Surface	1	20.0 19.9	20.0	8.2 8.2	8.2	29.0 31.5	30.3	77.1 77.2	77.2	5.9 5.8	5.9	5.9	6.5 6.8	6.7	6.3	8.8 9.4	9.1	8.4
				Middle	3	19.7 19.7	19.7	8.2 8.2	8.2	31.7 31.7	31.7	76.2 76.2	76.2	5.8 5.8	5.8		6.1 5.8	6.0		7.2 8.4	7.8	
				Bottom	5	19.7 19.7	19.7	8.2 8.2	8.2	31.7 31.8	31.8	75.9 76.0	76.0	5.8 5.8	5.8	5.8	5.9 6.3	6.1		9.7 6.9	8.3	
19-Mar-15	Fine	Moderate	12:24	Surface	1	20.0 20.0	20.0	8.1 8.1	8.1	32.6 30.7	31.7	101.6 100.8	101.2	7.6 7.6	7.6	7.6	11.4 13.3	12.4	12.8	12.6 13.8	13.2	12.8
				Middle	3.5	19.9 20.0	20.0	8.1 8.1	8.1	32.7 32.5	32.6	101.0 99.0	100.0	7.6 7.4	7.5		12.9 11.4	12.2		13.2 11.5	12.4	
				Bottom	6	19.9 19.9	19.9	8.1 8.1	8.1	32.7 32.6	32.7	100.4 100.9	100.7	7.5 7.6	7.6	7.6	13.8 13.8	13.8		13.6 11.7	12.7	

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-Mar-15	Fine	Moderate	13:12	Surface	1	20.8 20.6	20.7	8.1 8.1	8.1	30.8 31.1	31.0	84.0 82.3	83.2	6.3 6.2	6.3	6.2	8.7 8.6	8.7	10.9	6.9 8.1	7.5	8.2
				Middle	3.5	20.5 20.4	20.5	8.1 8.1	8.1	31.2 31.4	31.3	79.5 80.5	80.0	6.0 6.0	6.0		10.6 12.0	11.3		8.2 9.4	8.8	
				Bottom	6	20.4 20.4	20.4	8.1 8.1	8.1	31.3 31.4	31.4	78.6 77.7	78.2	5.9 5.8	5.9	5.9	12.6 12.8	12.7		8.3 8.1	8.2	
23-Mar-15	Cloudy	Moderate	15:42	Surface	1	20.2 20.2	20.2	8.2 8.2	8.2	32.8 32.9	32.9	86.3 83.1	84.7	6.5 6.2	6.4	6.4	7.9 7.9	7.9	8.0	3.9 7.2	5.6	7.3
				Middle	3	20.2 20.2	20.2	8.2 8.2	8.2	33.2 33.9	33.6	84.7 88.0	86.4	6.3 6.5	6.4		8.5 9.3	8.9		14.6 4.6	9.6	
				Bottom	5	20.2 20.2	20.2	8.2 8.2	8.2	33.4 33.6	33.5	85.5 86.6	86.1	6.4 6.4	6.4	6.4	7.8 6.5	7.2		7.4 5.7	6.6	
25-Mar-15	Cloudy	Moderate	15:58	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	33.9 33.8	33.9	82.2 82.2	82.2	6.1 6.1	6.1	6.1	7.1 8.2	7.7	8.1	10.0 4.7	7.4	6.6
				Middle	3	20.3 20.3	20.3	8.1 8.1	8.1	33.9 33.9	33.9	82.5 82.1	82.3	6.1 6.1	6.1		8.6 7.2	7.9		4.6 6.3	5.5	
				Bottom	5	20.3 20.3	20.3	8.1 8.1	8.1	34.0 34.0	34.0	82.5 82.0	82.3	6.1 6.1	6.1	6.1	8.6 8.5	8.6		6.8 7.0	6.9	
27-Mar-15	Cloudy	Moderate	17:58	Surface	1	20.5 20.4	20.5	8.1 8.1	8.1	32.8 33.0	32.9	99.6 94.9	97.3	7.4 7.1	7.3	7.2	8.4 8.3	8.4	8.5	2.4 3.8	3.1	5.0
				Middle	3	20.4 20.3	20.4	8.1 8.1	8.1	33.0 33.3	33.2	94.8 95.7	95.3	7.0 7.1	7.1		8.7 8.7	8.7		1.9 4.0	3.0	
				Bottom	5	20.3 20.3	20.3	8.1 8.1	8.1	33.5 33.5	33.5	100.7 100.8	100.8	7.5 7.5	7.5	7.5	8.5 8.5	8.5		9.0 8.8	8.9	
31-Mar-15	Cloudy	Moderate	11:27	Surface	1	21.8 21.6	21.7	8.1 8.1	8.1	29.9 30.4	30.2	81.2 81.2	81.2	6.0 6.0	6.0	6.0	3.3 3.0	3.2	3.3	8.8 8.2	8.5	7.6
				Middle	3	21.4 21.4	21.4	8.1 8.1	8.1	31.3 31.3	31.3	79.8 79.2	79.5	5.9 5.8	5.9		3.2 3.8	3.5		11.4 6.4	8.9	
				Bottom	5	21.3 21.3	21.3	8.1 8.1	8.1	31.5 31.5	31.5	78.7 78.4	78.6	5.8 5.8	5.8	5.8	2.9 3.6	3.3		5.8 5.0	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*
2-Mar-15	Fine	Moderate	16:19	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	32.7 32.7	32.7	73.9 76.6	75.3	5.7 5.9	5.8	5.9	5.9 6.6	6.3	9.8	4.2 3.6	3.9	4.7
				Middle	3.5	18.7 18.7	18.7	8.2 8.2	8.2	32.8 32.8	32.8	78.7 78.7	78.7	6.0 6.0	6.0		8.4 9.1	8.8		4.3 9.2	6.8	
				Bottom	6	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	78.1 78.0	78.1	6.0 6.0	6.0	6.0	14.5 14.1	14.3		3.8 2.9	3.4	
4-Mar-15	Fine	Moderate	17:52	Surface	1	18.9 18.9	18.9	8.1 8.1	8.1	30.4 30.4	30.4	73.5 76.0	74.8	5.7 5.9	5.8	6.0	10.8 10.9	10.9	10.6	4.4 2.4	3.4	3.4
				Middle	3.5	18.9 18.9	18.9	8.1 8.1	8.1	30.3 30.3	30.3	79.6 79.0	79.3	6.2 6.1	6.2		10.6 11.2	10.9		2.2 3.4	2.8	
				Bottom	6	18.9 18.9	18.9	8.1 8.1	8.1	30.4 30.4	30.4	80.7 80.9	80.8	6.3 6.3	6.3	6.3	9.9 10.0	10.0		4.6 3.3	4.0	
6-Mar-15	Cloudy	Moderate	19:33	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	32.7 32.7	32.7	69.1 68.9	69.0	5.3 5.3	5.3	5.4	8.9 8.2	8.6	9.0	4.2 3.5	3.9	5.8
				Middle	3	18.8 18.8	18.8	8.1 8.1	8.1	32.6 32.6	32.6	69.8 70.1	70.0	5.4 5.4	5.4		8.6 8.8	8.7		3.1 17.2	10.2	
				Bottom	5	18.8 18.8	18.8	8.1 8.1	8.1	32.7 32.7	32.7	71.2 70.9	71.1	5.5 5.4	5.5	5.5	9.9 9.6	9.8		3.9 2.6	3.3	
9-Mar-15	Cloudy	Moderate	09:40	Surface	1	18.9 18.9	18.9	8.1 8.1	8.1	32.2 32.2	32.2	69.6 69.9	69.8	5.3 5.4	5.4	5.5	8.4 8.7	8.6	12.4	17.5 24.9	21.2	17.1
				Middle	3	18.9 18.9	18.9	8.1 8.1	8.1	32.3 32.3	32.3	71.4 71.8	71.6	5.5 5.5	5.5		11.9 14.2	13.1		13.3 21.4	17.4	
				Bottom	5	18.9 18.9	18.9	8.1 8.1	8.1	32.3 32.3	32.3	70.6 70.6	70.6	5.4 5.4	5.4	5.4	15.4 15.5	15.5		11.7 13.8	12.8	
11-Mar-15	Cloudy	Moderate	10:56	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	33.5 33.5	33.5	102.0 101.2	101.6	7.8 7.7	7.8	7.7	4.5 4.5	4.5	4.5	7.4 6.1	6.8	7.4
				Middle	3	18.7 18.7	18.7	8.2 8.2	8.2	33.7 33.7	33.7	100.0 99.4	99.7	7.6 7.6	7.6		4.5 4.5	4.5		6.1 4.4	5.3	
				Bottom	5	18.7 18.7	18.7	8.2 8.2	8.2	33.6 33.6	33.6	98.4 98.4	98.4	7.5 7.5	7.5	7.5	4.5 4.5	4.5		12.3 7.9	10.1	
13-Mar-15	Cloudy	Moderate	11:51	Surface	1	18.6 18.6	18.6	8.2 8.1	8.2	32.4 32.4	32.4	68.9 69.2	69.1	5.3 5.3	5.3	5.3	6.4 5.9	6.2	6.3	5.1 2.1	3.6	4.9
				Middle	3	18.6 18.6	18.6	8.1 8.1	8.1	32.4 32.4	32.4	68.4 68.7	68.6	5.3 5.3	5.3		6.5 6.1	6.3		5.1 3.1	4.1	
				Bottom	5	18.6 18.6	18.6	8.1 8.1	8.1	32.4 32.5	32.5	69.6 69.1	69.4	5.4 5.3	5.4	5.4	6.0 6.8	6.4		7.1 6.8	7.0	
17-Mar-15	Fine	Moderate	16:12	Surface	1	20.4 20.6	20.5	8.2 8.2	8.2	30.9 31.0	31.0	76.8 81.0	78.9	5.8 6.1	6.0	6.1	8.9 7.3	8.1	8.5	9.6 19.0	14.3	12.2
				Middle	3	20.4 20.5	20.5	8.2 8.2	8.2	30.9 31.0	31.0	82.1 82.1	82.1	6.2 6.2	6.2		9.3 7.8	8.6		11.8 15.5	13.7	
				Bottom	5	20.4 20.4	20.4	8.2 8.2	8.2	31.0 31.0	31.0	80.2 79.2	79.7	6.0 6.0	6.0	6.0	9.1 8.4	8.8		9.0 8.2	8.6	
19-Mar-15	Fine	Moderate	18:32	Surface	1	20.6 21.2	20.9	8.1 8.1	8.1	31.0 31.5	31.3	90.4 89.7	90.1	6.8 6.6	6.7	6.7	14.1 14.2	14.2	17.5	30.7 29.4	30.1	35.3
				Middle	3.5	20.3 21.2	20.8	8.1 8.1	8.1	31.8 31.5	31.7	90.8 89.0	89.9	6.8 6.6	6.7		16.5 16.2	16.4		34.9 38.0	36.5	
				Bottom	6	20.2 21.2	20.7	8.1 8.1	8.1	32.1 31.5	31.8	91.0 93.2	92.1	6.8 6.9	6.9	6.9	21.1 22.6	21.9		39.4 38.9	39.2	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at 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-Mar-15	Fine	Moderate	20:08	Surface	1	20.1 21.2	20.7	8.2 8.0	8.1	32.1 32.0	32.1	90.2 90.9	90.6	6.8 6.7	6.8	6.8	7.9 7.9	7.9	13.8	19.0 19.8	19.4	25.2
				Middle	3.5	20.0 20.8	20.4	8.2 8.1	8.2	32.4 27.8	30.1	89.4 89.0	89.2	6.7 6.8	6.8		14.2 14.4	14.3		19.0 21.8	20.4	
				Bottom	6	19.9 20.8	20.4	8.2 8.1	8.2	32.8 28.2	30.5	83.4 83.9	83.7	6.3 6.4	6.4	6.4	19.5 19.1	19.3		27.0 44.7	35.9	
23-Mar-15	Cloudy	Moderate	09:43	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	30.1 29.4	29.8	87.0 86.5	86.8	6.6 6.6	6.6	6.5	7.3 8.8	8.1	8.1	26.6 24.4	25.5	31.7
				Middle	3	20.2 20.2	20.2	8.1 8.1	8.1	29.7 29.5	29.6	84.5 84.5	84.5	6.4 6.4	6.4		8.4 9.3	8.9		26.6 28.8	27.7	
				Bottom	5	20.2 20.2	20.2	8.1 8.1	8.1	29.8 29.4	29.6	84.9 84.3	84.6	6.5 6.4	6.5	6.5	7.5 7.0	7.3		51.0 33.0	42.0	
25-Mar-15	Cloudy	Moderate	09:57	Surface	1	20.5 20.4	20.5	8.1 8.1	8.1	32.4 32.5	32.5	82.4 82.8	82.6	6.1 6.2	6.2	6.2	7.4 8.4	7.9	7.8	7.0 5.4	6.2	8.4
				Middle	3	20.4 20.4	20.4	8.1 8.1	8.1	32.5 32.5	32.5	82.5 82.9	82.7	6.1 6.2	6.2		8.4 8.2	8.3		5.6 11.8	8.7	
				Bottom	5	20.4 20.4	20.4	8.1 8.1	8.1	32.6 32.7	32.7	83.2 83.2	83.2	6.2 6.2	6.2	6.2	7.7 6.8	7.3		10.4 9.9	10.2	
27-Mar-15	Cloudy	Moderate	10:58	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	31.6 31.7	31.7	102.5 94.9	98.7	7.7 7.1	7.4	7.4	10.0 9.7	9.9	10.1	4.5 4.5	4.5	4.9
				Middle	3	20.4 19.7	20.1	8.1 8.2	8.2	31.7 30.7	31.2	97.0 95.4	96.2	7.3 7.3	7.3		11.1 11.0	11.1		3.7 3.8	3.8	
				Bottom	5	20.4 19.7	20.1	8.1 8.2	8.2	31.6 30.8	31.2	94.0 95.2	94.6	7.1 7.3	7.2	7.2	9.3 9.1	9.2		7.1 5.4	6.3	
31-Mar-15	Cloudy	Moderate	16:15	Surface	1	22.7 22.6	22.7	8.3 8.2	8.3	26.7 26.9	26.8	86.2 94.4	90.3	6.4 7.0	6.7	7.0	3.8 3.8	3.8	3.5	4.7 5.8	5.3	6.9
				Middle	3.5	22.1 21.6	21.9	8.2 8.2	8.2	30.9 31.3	31.1	97.4 97.3	97.4	7.1 7.2	7.2		3.9 4.0	4.0		6.2 7.8	7.0	
				Bottom	6	21.0 20.9	21.0	8.1 8.1	8.1	33.3 33.3	33.3	92.4 86.4	89.4	6.8 6.4	6.6	6.6	2.7 2.7	2.7		9.0 7.8	8.4	

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*
2-Mar-15	Fine	Moderate	11:51	Surface	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	3.2	-	-	3.8
						-		-		-		-		-			-			-		
				Middle	1.4	18.5	18.5	8.2	8.2	33.9	34.0	88.2	88.3	6.8	6.8		3.2	3.2		4.4	3.8	
						18.5		8.2		34.0		88.4		6.8			3.2			3.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Mar-15	Fine	Moderate	12:46	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-	6.7	-	-	8.8
						-		-		-		-		-			-			-		
				Middle	1.2	18.8	18.8	8.1	8.1	31.6	31.6	82.2	82.1	6.4	6.4		6.6	6.7		9.3	8.8	
						18.8		8.1		31.6		81.9		6.3			6.8			8.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
6-Mar-15	Cloudy	Moderate	13:17	Surface	-	-	-	-	-	-	-	-	-	-	-	5.7	-	-	4.7	-	-	4.9
						-		-		-		-		-			-			-		
				Middle	1.1	18.7	18.7	8.2	8.2	32.8	32.9	74.5	74.6	5.7	5.7		4.7	4.7		4.9	4.9	
						18.7		8.2		32.9		74.6		5.7			4.6			4.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
9-Mar-15	Cloudy	Moderate	14:00	Surface	-	-	-	-	-	-	-	-	-	-	-	6.5	-	-	5.3	-	-	3.9
						-		-		-		-		-			-			-		
				Middle	1.2	18.6	18.6	8.2	8.2	31.3	31.3	83.6	83.7	6.5	6.5		5.3	5.3		3.1	3.9	
						18.6		8.2		31.3		83.8		6.5			5.3			4.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
11-Mar-15	Cloudy	Moderate	16:19	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-	10.3	-	-	7.4
						-		-		-		-		-			-			-		
				Middle	1.1	18.8	18.8	8.2	8.2	33.1	33.1	94.1	94.4	7.2	7.2		10.4	10.3		7.1	7.4	
						18.8		8.2		33.1		94.6		7.2			10.1			7.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
13-Mar-15	Cloudy	Moderate	16:46	Surface	-	-	-	-	-	-	-	-	-	-	-	7.8	-	-	2.6	-	-	4.3
						-		-		-		-		-			-			-		
				Middle	0.7	18.5	18.5	8.2	8.2	32.9	32.8	100.9	101.0	7.8	7.8		2.6	2.6		4.4	4.3	
						18.5		8.2		32.6		101.1		7.8			2.6			4.1		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
17-Mar-15	Fine	Moderate	11:15	Surface	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-	7.7	-	-	6.6
						-		-		-		-		-			-			-		
				Middle	1.2	20.0	20.1	8.2	8.2	30.8	30.8	78.9	79.3	6.0	6.0		7.4	7.7		6.7	6.6	
						20.1		8.1		30.7		79.7		6.0			7.9			6.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
19-Mar-15	Fine	Moderate	12:53	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	4.8	-	-	5.7
						-		-		-		-		-			-			-		
				Middle	0.7	20.5	20.5	8.2	8.2	28.5	28.5	83.0	83.1	6.3	6.3		4.8	4.8		4.7	5.7	
						20.5		8.2		28.5		83.1		6.3			4.8			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 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-Mar-15	Fine	Moderate	13:55	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	2.2	-	-	9.5
						-		-		-		-		-			-			-		
				Middle	1	20.3	20.3	8.2	8.2	32.8	32.9	83.4	83.6	6.6	6.6		2.1	2.2		7.6	9.5	
						20.3		8.2		32.9		83.7		6.6			2.3			11.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
23-Mar-15	Cloudy	Moderate	14:57	Surface	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	5.6	-	-	7.0
						-		-		-		-		-			-			-		
				Middle	1.1	20.3	20.3	8.1	8.1	32.8	32.8	91.4	91.5	6.8	6.8		5.5	5.6		6.6	7.0	
						20.3		8.1		32.8		91.5		6.8			5.7			7.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
25-Mar-15	Cloudy	Moderate	16:02	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	6.8	-	-	3.9
						-		-		-		-		-			-			-		
				Middle	1.4	20.1	20.2	8.2	8.2	30.5	31.9	87.5	88.2	6.6	6.6		6.4	6.8		3.8	3.9	
						20.2		8.2		33.3		88.8		6.6			7.1			4.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
27-Mar-15	Cloudy	Moderate	17:47	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	8.4	-	-	2.3
						-		-		-		-		-			-			-		
				Middle	1	20.5	20.5	8.1	8.1	33.3	33.4	96.4	96.3	7.1	7.1		8.4	8.4		2.8	2.3	
						20.4		8.1		33.5		96.1		7.1			8.4			1.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
31-Mar-15	Cloudy	Moderate	11:18	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	1.8	-	-	5.4
						-		-		-		-		-			-			-		
				Middle	1	22.1	22.1	8.3	8.3	31.7	31.8	102.6	102.4	7.5	7.5		1.8	1.8		6.4	5.4	
						22.1		8.3		31.8		102.2		7.4			1.8			4.4		
				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*
2-Mar-15	Fine	Moderate	15:51	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	2.5	-	-	3.7
						-		-		-		-		-			-			-		
				Middle	1.4	18.7	18.7	8.1	8.1	30.5	30.8	93.5	93.5	7.3	7.3		2.5	2.5		4.1	3.7	
						18.7		8.1		31.1		93.4		7.3			2.4			3.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Mar-15	Fine	Moderate	17:17	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-	3.3	-	-	5.0
						-		-		-		-		-			-			-		
				Middle	1.2	18.6	18.6	8.1	8.1	32.1	32.1	98.0	98.0	7.6	7.6		3.2	3.3		3.6	5.0	
						18.6		8.1		32.1		97.9		7.6			3.3			6.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
6-Mar-15	Cloudy	Moderate	18:27	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-	4.4	-	-	5.3
						-		-		-		-		-			-			-		
				Middle	1.2	18.7	18.7	8.2	8.2	32.8	32.8	82.9	82.7	6.4	6.4		4.3	4.4		4.5	5.3	
						18.7		8.2		32.8		82.5		6.3			4.4			6.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
9-Mar-15	Cloudy	Moderate	08:49	Surface	-	-	-	-	-	-	-	-	-	-	-	5.8	-	-	7.1	-	-	4.4
						-		-		-		-		-			-			-		
				Middle	1.2	18.4	18.4	8.2	8.2	31.1	31.1	73.7	73.7	5.8	5.8		7.2	7.1		4.4	4.4	
						18.4		8.2		31.1		73.7		5.8			7.0			4.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
11-Mar-15	Cloudy	Moderate	10:40	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	9.6	-	-	11.1
						-		-		-		-		-			-			-		
				Middle	1.2	18.7	18.7	8.2	8.2	33.2	33.2	92.8	92.2	7.1	7.1		9.4	9.6		11.3	11.1	
						18.7		8.2		33.2		91.6		7.0			9.8			10.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
13-Mar-15	Cloudy	Moderate	10:35	Surface	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-	4.3	-	-	2.1
						-		-		-		-		-			-			-		
				Middle	0.7	18.6	18.6	8.2	8.2	33.6	33.5	72.8	72.7	5.6	5.6		4.1	4.3		2.3	2.1	
						18.6		8.2		33.3		72.5		5.6			4.4			1.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
17-Mar-15	Fine	Moderate	17:19	Surface	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-	4.4	-	-	11.2
						-		-		-		-		-			-			-		
				Middle	1.1	19.5	19.5	8.2	8.2	31.8	31.8	72.8	73.1	5.5	5.6		4.5	4.4		9.5	11.2	
						19.4		8.2		31.8		73.3		5.6			4.2			12.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
19-Mar-15	Fine	Moderate	17:49	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	4.3	-	-	4.9
						-		-		-		-		-			-			-		
				Middle	0.7	20.6	20.6	8.2	8.2	28.9	28.9	92.6	93.1	7.0	7.1		4.2	4.3		4.3	4.9	
						20.6		8.2		28.9		93.5		7.1			4.3			5.4		
				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-Mar-15	Fine	Moderate	18:53	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.5	- -	-	3.3	- -	-	10.5
				Middle	1.1	20.3 20.3	20.3	7.9 7.9	7.9	32.7 32.7	32.7	81.4 81.9	81.7	6.4 6.5	6.5		3.3 3.3	3.3		9.8 11.2	10.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
23-Mar-15	Cloudy	Moderate	09:18	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.8	- -	-	8.1	- -	-	14.1
				Middle	1.1	20.2 20.2	20.2	8.1 8.1	8.1	31.1 31.1	31.1	89.6 89.7	89.7	6.8 6.8	6.8		8.3 7.8	8.1		14.8 13.4	14.1	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
25-Mar-15	Cloudy	Moderate	10:01	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.5	- -	-	6.5	- -	-	3.7
				Middle	0.9	20.2 20.2	20.2	8.2 8.2	8.2	31.1 30.9	31.0	101.0 96.2	98.6	7.6 7.3	7.5		6.1 6.8	6.5		3.9 3.4	3.7	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
27-Mar-15	Cloudy	Moderate	10:25	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.9	- -	-	8.3	- -	-	3.6
				Middle	1.1	20.2 20.2	20.2	8.1 8.1	8.1	33.3 33.2	33.3	105.2 106.1	105.7	7.8 7.9	7.9		8.7 7.9	8.3		2.8 4.4	3.6	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
31-Mar-15	Cloudy	Moderate	15:45	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.3	- -	-	2.2	- -	-	7.2
				Middle	1	21.8 21.7	21.8	8.3 8.3	8.3	31.8 32.1	32.0	99.5 100.6	100.1	7.3 7.3	7.3		2.4 2.0	2.2		6.4 8.0	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 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*
2-Mar-15	Fine	Moderate	10:48	Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-	5.4	-	-	5.7
						-		-		-		-		-			-			-		
				Middle	1.1	19.2	19.2	8.1	8.1	33.0	33.0	91.6	91.6	7.0	7.0		5.4	5.4		6.1	5.7	
						19.2		8.1		32.9		91.6		7.0			5.4			5.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Mar-15	Fine	Moderate	12:08	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-	5.0	-	-	7.0
						-		-		-		-		-			-			-		
				Middle	0.9	18.5	18.5	8.2	8.2	32.9	32.9	74.6	75.8	5.8	5.9		5.0	5.0		7.0	7.0	
						18.5		8.2		32.9		77.0		5.9			4.9			7.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
6-Mar-15	Cloudy	Moderate	12:38	Surface	-	-	-	-	-	-	-	-	-	-	-	6.1	-	-	10.3	-	-	5.0
						-		-		-		-		-			-			-		
				Middle	1.1	18.8	18.8	8.1	8.1	32.6	32.7	78.3	79.1	6.0	6.1		9.8	10.3		6.3	5.0	
						18.8		8.1		32.7		79.8		6.1			10.7			3.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
9-Mar-15	Cloudy	Moderate	14:46	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-	10.1	-	-	3.5
						-		-		-		-		-			-			-		
				Middle	1	18.9	18.9	8.2	8.2	32.0	32.0	76.7	76.8	5.9	5.9		9.9	10.1		3.6	3.5	
						18.9		8.2		32.0		76.8		5.9			10.2			3.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
11-Mar-15	Cloudy	Moderate	15:33	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-	11.3	-	-	16.2
						-		-		-		-		-			-			-		
				Middle	1	18.8	18.8	8.0	8.1	32.0	32.0	92.9	92.3	7.2	7.2		11.0	11.3		18.0	16.2	
						18.8		8.1		32.0		91.6		7.1			11.6			14.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
13-Mar-15	Cloudy	Moderate	17:08	Surface	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	5.2	-	-	2.6
						-		-		-		-		-			-			-		
				Middle	0.5	18.5	18.5	8.2	8.2	31.8	31.8	88.0	88.0	6.8	6.8		5.1	5.2		3.2	2.6	
						18.5		8.2		31.8		88.0		6.8			5.2			2.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
17-Mar-15	Fine	Moderate	10:09	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-	9.4	-	-	16.1
						-		-		-		-		-			-			-		
				Middle	1.1	20.5	20.5	8.1	8.1	30.2	30.2	77.9	78.2	5.9	5.9		9.4	9.4		19.3	16.1	
						20.5		8.1		30.2		78.5		5.9			9.3			12.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
19-Mar-15	Fine	Moderate	12:17	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	11.3	-	-	9.0
						-		-		-		-		-			-			-		
				Middle	0.6	20.3	20.3	8.1	8.1	33.0	30.8	98.4	99.3	7.3	7.5		10.5	11.3		7.3	9.0	
						20.3		8.1		28.6		100.2		7.7			12.1			10.7		
				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-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-Mar-15	Fine	Moderate	12:46	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	5.2	-	-	11.7
						-		-		-		-		-			-			-		
				Middle	1.1	20.6	20.6	8.1	8.1	32.4	32.4	83.4	83.6	6.6	6.6		5.1	5.2		11.7	11.7	
						20.6		8.1		32.4		83.8		6.6			5.2			11.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
23-Mar-15	Cloudy	Moderate	15:12	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	13.1	-	-	13.6
						-		-		-		-		-			-			-		
				Middle	1.1	20.5	20.5	8.1	8.1	31.6	31.6	89.8	89.7	6.7	6.7		13.0	13.1		14.2	13.6	
						20.5		8.1		31.6		89.5		6.7			13.1			13.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
25-Mar-15	Cloudy	Moderate	16:35	Surface	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-	10.5	-	-	7.0
						-		-		-		-		-			-			-		
				Middle	1.1	20.2	20.3	8.2	8.2	32.7	30.4	92.0	90.7	6.9	6.9		10.2	10.5		7.7	7.0	
						20.3		8.1		28.0		89.4		6.9			10.7			6.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
27-Mar-15	Cloudy	Moderate	17:31	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	4.6	-	-	1.7
						-		-		-		-		-			-			-		
				Middle	1.1	20.5	20.5	8.1	8.1	33.6	33.5	99.8	99.5	7.4	7.4		4.6	4.6		1.8	1.7	
						20.5		8.1		33.3		99.2		7.4			4.6			1.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
31-Mar-15	Cloudy	Moderate	10:59	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-	10.6	-	-	5.9
						-		-		-		-		-			-			-		
				Middle	1.1	23.0	23.0	8.1	8.1	30.1	30.2	104.6	104.8	7.6	7.6		10.3	10.6		5.6	5.9	
						22.9		8.1		30.2		104.9		7.6			10.9			6.2		
				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 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*
2-Mar-15	Fine	Moderate	16:47	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	7.0	-	-	1.8
						-		-		-		-		-			-			-		
				Middle	0.7	19.2	19.2	8.1	8.1	32.3	32.3	87.9	88.1	6.7	6.7		7.0	7.0		1.9	1.8	
						19.2		8.1		32.2		88.3		6.7			7.0			1.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Mar-15	Fine	Moderate	18:03	Surface	-	-	-	-	-	-	-	-	-	-	-	5.7	-	-	11.7	-	-	3.5
						-		-		-		-		-			-			-		
				Middle	1.1	18.7	18.7	8.1	8.1	31.8	31.8	72.9	73.1	5.6	5.7		11.9	11.7		3.5	3.5	
						18.7		8.1		31.8		73.3		5.7			11.5			3.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
6-Mar-15	Cloudy	Moderate	19:14	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	4.8	-	-	7.0
						-		-		-		-		-			-			-		
				Middle	1.1	18.7	18.7	8.2	8.2	33.1	33.1	82.0	82.0	6.3	6.3		4.7	4.8		6.9	7.0	
						18.7		8.2		33.1		82.0		6.3			4.8			7.1		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
9-Mar-15	Cloudy	Moderate	08:10	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	9.4	-	-	3.5
						-		-		-		-		-			-			-		
				Middle	1	18.6	18.6	8.1	8.1	32.1	32.1	78.9	79.4	6.1	6.2		9.2	9.4		4.0	3.5	
						18.6		8.1		32.1		79.9		6.2			9.6			3.0		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
11-Mar-15	Cloudy	Moderate	09:55	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	11.0	-	-	17.6
						-		-		-		-		-			-			-		
				Middle	1	18.7	18.7	8.1	8.1	31.1	31.1	93.8	93.4	7.3	7.3		10.7	11.0		18.8	17.6	
						18.7		8.1		31.1		93.0		7.2			11.3			16.4		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
13-Mar-15	Cloudy	Moderate	10:03	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-	10.0	-	-	1.6
						-		-		-		-		-			-			-		
				Middle	0.5	18.6	18.6	8.2	8.2	31.6	31.6	82.8	82.6	6.4	6.4		9.9	10.0		2.1	1.6	
						18.6		8.2		31.6		82.3		6.4			10.1			1.1		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
17-Mar-15	Fine	Moderate	16:40	Surface	-	-	-	-	-	-	-	-	-	-	-	5.8	-	-	14.0	-	-	12.4
						-		-		-		-		-			-			-		
				Middle	1.1	20.8	20.9	8.1	8.1	30.3	30.3	77.4	77.7	5.8	5.8		13.9	14.0		16.5	12.4	
						20.9		8.1		30.3		77.9		5.8			14.1			8.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
19-Mar-15	Fine	Moderate	18:32	Surface	-	-	-	-	-	-	-	-	-	-	-	6.5	-	-	11.5	-	-	7.2
						-		-		-		-		-			-			-		
				Middle	0.6	20.9	20.8	8.1	8.2	31.8	32.0	85.8	86.7	6.4	6.5		11.4	11.5		7.5	7.2	
						20.7		8.2		32.1		87.6		6.5			11.6			6.8		
				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 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-Mar-15	Fine	Moderate	20:05	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.3	- -	-	8.1	- -	-	32.7
				Middle	1.1	20.5 20.2	20.4	8.2 8.2	8.2	31.5 32.9	32.2	80.2 78.5	79.4	6.3 6.2	6.3		7.8 8.4	8.1		32.7 32.7	32.7	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
23-Mar-15	Cloudy	Moderate	08:49	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.5	- -	-	14.0	- -	-	9.2
				Middle	1.1	20.7 20.7	20.7	8.0 8.0	8.0	28.8 28.8	28.8	85.9 85.9	85.9	6.5 6.5	6.5		14.0 13.9	14.0		8.6 9.8	9.2	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
25-Mar-15	Cloudy	Moderate	09:35	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.4	- -	-	12.0	- -	-	7.9
				Middle	1.1	20.3 20.3	20.3	8.1 8.1	8.1	32.4 31.4	31.9	98.7 98.0	98.4	7.4 7.4	7.4		11.7 12.3	12.0		7.7 8.1	7.9	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
27-Mar-15	Cloudy	Moderate	10:09	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.8	- -	-	13.8	- -	-	3.9
				Middle	1.1	20.2 20.2	20.2	8.1 8.1	8.1	31.0 31.3	31.2	101.8 104.3	103.1	7.7 7.9	7.8		14.0 13.6	13.8		4.8 2.9	3.9	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
31-Mar-15	Cloudy	Moderate	15:26	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.7	- -	-	2.0	- -	-	7.1
				Middle	1	22.3 22.2	22.3	8.3 8.3	8.3	29.3 29.6	29.5	103.8 105.1	104.5	7.6 7.7	7.7		2.0 2.0	2.0		7.0 7.2	7.1	
				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 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*
2-Mar-15	Fine	Moderate	10:36	Surface	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	4.2	-	-	7.2
						-		-		-		-		-			-			-		
				Middle	1.2	19.3	19.3	8.0	8.0	33.4	33.4	90.2	89.1	6.8	6.8		4.2	4.2		7.7	7.2	
						19.3		8.0		33.4		88.0		6.7			4.1			6.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Mar-15	Fine	Moderate	11:57	Surface	-	-	-	-	-	-	-	-	-	-	-	8.1	-	-	8.7	-	-	6.9
						-		-		-		-		-			-			-		
				Middle	1.1	18.6	18.6	8.1	8.1	32.4	32.6	104.6	105.3	8.1	8.1		9.0	8.7		5.8	6.9	
						18.6		8.1		32.8		105.9		8.1			8.3			7.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
6-Mar-15	Cloudy	Moderate	12:27	Surface	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-	6.2	-	-	8.5
						-		-		-		-		-			-			-		
				Middle	1.1	19.1	19.1	8.0	8.0	31.7	31.7	89.2	89.8	6.9	6.9		6.1	6.2		10.5	8.5	
						19.1		8.0		31.7		90.4		6.9			6.3			6.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
9-Mar-15	Cloudy	Moderate	15:04	Surface	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-	6.9	-	-	5.2
						-		-		-		-		-			-			-		
				Middle	1.1	19.7	19.7	8.1	8.1	31.8	31.8	74.3	74.2	5.6	5.6		7.0	6.9		6.6	5.2	
						19.7		8.1		31.8		74.1		5.6			6.8			3.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
11-Mar-15	Cloudy	Moderate	17:09	Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-	7.1	-	-	7.3
						-		-		-		-		-			-			-		
				Middle	0.9	18.9	18.9	8.1	8.1	32.7	32.7	91.0	91.2	7.0	7.0		7.2	7.1		7.7	7.3	
						18.9		8.1		32.7		91.3		7.0			6.9			6.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
13-Mar-15	Cloudy	Moderate	17:21	Surface	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-	6.5	-	-	3.8
						-		-		-		-		-			-			-		
				Middle	0.5	18.6	18.6	8.1	8.1	32.3	32.3	77.1	76.9	6.0	6.0		6.6	6.5		4.2	3.8	
						18.6		8.1		32.3		76.7		5.9			6.4			3.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
17-Mar-15	Fine	Moderate	09:45	Surface	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-	4.9	-	-	6.6
						-		-		-		-		-			-			-		
				Middle	1.1	20.9	20.9	8.0	8.0	31.2	31.2	80.2	80.3	6.0	6.0		5.0	4.9		8.0	6.6	
						20.9		8.0		31.2		80.4		6.0			4.7			5.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
19-Mar-15	Fine	Moderate	12:05	Surface	-	-	-	-	-	-	-	-	-	-	-	7.7	-	-	2.3	-	-	4.4
						-		-		-		-		-			-			-		
				Middle	0.7	21.6	21.6	8.0	8.0	32.2	30.1	104.7	102.8	7.7	7.7		2.2	2.3		3.7	4.4	
						21.6		8.0		28.0		100.9		7.6			2.4			5.1		
				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 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-Mar-15	Fine	Moderate	12:28	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-		-	-	
						-		-		-		-		-			-			-		
				Middle	1.1	20.8	20.8	7.9	7.9	32.0	32.0	80.4	80.5	6.3	6.4		3.6	3.5	3.5	14.6	14.6	14.6
						20.8		7.9		32.0		80.5		6.4			3.4			14.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
23-Mar-15	Cloudy	Moderate	15:35	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-		-	-	
						-		-		-		-		-			-			-		
				Middle	1.1	21.3	21.2	8.0	8.0	29.7	29.8	79.6	79.4	5.9	5.9		8.7	9.1	9.1	6.4	7.1	7.1
						21.0		8.0		29.9		79.1		5.9			9.4			7.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
25-Mar-15	Cloudy	Moderate	17:04	Surface	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-		-	-	
						-		-		-		-		-			-			-		
				Middle	1.4	20.5	20.5	8.1	8.1	32.4	32.4	92.2	92.3	6.9	6.9		6.1	6.2	6.2	16.6	12.2	12.2
						20.5		8.1		32.4		92.4		6.9			6.2			7.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
27-Mar-15	Cloudy	Moderate	17:15	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
						-		-		-		-		-			-			-		
				Middle	1	20.6	20.6	8.1	8.1	32.8	33.1	99.4	99.6	7.4	7.4		3.0	3.2	3.2	5.4	3.9	3.9
						20.6		8.1		33.3		99.8		7.4			3.3			2.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
31-Mar-15	Cloudy	Moderate	10:30	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-		-	-	
						-		-		-		-		-			-			-		
				Middle	1	22.3	22.3	8.1	8.1	31.7	31.7	103.4	103.8	7.5	7.5		2.2	2.2	2.2	9.0	7.0	7.0
						22.3		8.1		31.7		104.2		7.5			2.1			4.9		
				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-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*
2-Mar-15	Fine	Moderate	17:14	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	5.2	-	-	2.3
						-		-		-		-		-			-			-		
				Middle	1.3	19.1	19.1	8.0	8.0	31.8	31.8	83.2	82.2	6.4	6.3		5.2	5.2		2.4	2.3	
						19.1		8.0		31.7		81.1		6.2			5.1			2.2		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
4-Mar-15	Fine	Moderate	18:21	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	5.7	-	-	3.0
						-		-		-		-		-			-			-		
				Middle	1.1	18.9	18.9	8.1	8.1	31.8	31.8	80.6	80.6	6.2	6.2		5.7	5.7		2.7	3.0	
						18.9		8.1		31.8		80.6		6.2			5.7			3.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
6-Mar-15	Cloudy	Moderate	19:32	Surface	-	-	-	-	-	-	-	-	-	-	-	5.4	-	-	6.2	-	-	4.5
						-		-		-		-		-			-			-		
				Middle	1.1	18.8	18.8	8.1	8.1	32.0	32.0	69.5	69.5	5.4	5.4		6.2	6.2		4.0	4.5	
						18.8		8.1		32.0		69.5		5.4			6.2			4.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
9-Mar-15	Cloudy	Moderate	07:59	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	10.1	-	-	3.1
						-		-		-		-		-			-			-		
				Middle	1.1	18.6	18.6	8.0	8.0	31.8	31.8	79.5	80.0	6.2	6.2		10.1	10.1		3.4	3.1	
						18.6		8.0		31.8		80.4		6.2			10.1			2.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
11-Mar-15	Cloudy	Moderate	09:33	Surface	-	-	-	-	-	-	-	-	-	-	-	7.7	-	-	8.2	-	-	12.0
						-		-		-		-		-			-			-		
				Middle	0.8	18.9	18.9	7.9	7.9	32.6	32.6	99.9	99.8	7.7	7.7		8.0	8.2		13.7	12.0	
						18.9		7.9		32.6		99.6		7.6			8.3			10.3		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
13-Mar-15	Cloudy	Moderate	09:51	Surface	-	-	-	-	-	-	-	-	-	-	-	8.0	-	-	6.1	-	-	2.4
						-		-		-		-		-			-			-		
				Middle	0.6	18.5	18.5	8.1	8.1	32.8	32.8	103.4	103.2	8.0	8.0		6.1	6.1		3.2	2.4	
						18.5		8.1		32.7		102.9		7.9			6.1			1.5		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
17-Mar-15	Fine	Moderate	15:56	Surface	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-	9.1	-	-	12.0
						-		-		-		-		-			-			-		
				Middle	1.1	20.9	20.9	8.0	8.0	30.7	30.7	79.3	79.7	5.9	6.0		9.0	9.1		13.0	12.0	
						20.9		8.0		30.7		80.0		6.0			9.1			10.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
19-Mar-15	Fine	Moderate	18:51	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-	9.0	-	-	5.1
						-		-		-		-		-			-			-		
				Middle	0.6	20.6	20.6	8.1	8.1	32.1	32.2	89.5	89.6	6.7	6.7		9.0	9.0		4.7	5.1	
						20.6		8.1		32.2		89.6		6.7			9.0			5.5		
				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 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-Mar-15	Fine	Moderate	20:26	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-	5.1	-	-	36.7
						-		-		-		-		-			-			-		
				Middle	1	20.8	20.8	8.2	8.2	32.4	32.4	79.6	79.3	6.3	6.3		5.5	5.1		43.8	36.7	
						20.8		8.2		32.4		78.9		6.2			4.7			29.6		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
23-Mar-15	Cloudy	Moderate	08:40	Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-	9.6	-	-	13.7
						-		-		-		-		-			-			-		
				Middle	1.1	20.9	20.9	7.9	7.9	28.2	28.2	87.1	86.9	6.6	6.6		9.7	9.6		14.6	13.7	
						20.9		7.9		28.2		86.7		6.6			9.5			12.8		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
25-Mar-15	Cloudy	Moderate	09:07	Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-	6.6	-	-	11.6
						-		-		-		-		-			-			-		
				Middle	0.8	20.5	20.5	8.1	8.1	34.7	34.7	93.8	94.6	6.9	7.0		6.4	6.6		12.3	11.6	
						20.5		8.1		34.7		95.4		7.0			6.7			10.9		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
27-Mar-15	Cloudy	Moderate	09:50	Surface	-	-	-	-	-	-	-	-	-	-	-	7.8	-	-	9.7	-	-	3.4
						-		-		-		-		-			-			-		
				Middle	1	20.2	20.2	7.9	7.9	30.6	30.5	99.6	103.0	7.5	7.8		9.8	9.7		3.1	3.4	
						20.2		7.9		30.3		106.3		8.1			9.6			3.7		
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-		-		-		-		-			-			-		
31-Mar-15	Cloudy	Moderate	15:08	Surface	-	-	-	-	-	-	-	-	-	-	-	7.7	-	-	1.7	-	-	2.8
						-		-		-		-		-			-			-		
				Middle	1	21.7	21.8	8.3	8.3	30.0	30.5	103.3	104.0	7.6	7.7		1.6	1.7		2.7	2.8	
						21.9		8.3		30.9		104.7		7.7			1.8			2.8		
				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 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*
2-Mar-15	Fine	Moderate	11:06	Surface	1	18.8 18.8	18.8	8.0 8.0	8.0	30.0 30.0	30.0	86.3 86.4	86.4	6.7 6.7	6.7	6.7	3.1 3.1	3.1	2.9	2.6 2.6	2.6	3.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4	18.4 18.4	18.4	8.1 8.1	8.1	33.3 33.2	33.3	84.0 84.5	84.3	6.5 6.5	6.5	6.5	2.6 2.7	2.7		1.5 5.3	3.4	
4-Mar-15	Fine	Moderate	11:46	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	32.2 32.2	32.2	113.2 112.7	113.0	8.7 8.7	8.7	8.7	4.9 4.9	4.9	4.8	4.7 4.1	4.4	4.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.4	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	111.9 111.9	111.9	8.6 8.6	8.6	8.6	4.7 4.7	4.7		4.3 4.8	4.6	
6-Mar-15	Cloudy	Moderate	12:48	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	30.5 30.5	30.5	85.5 84.6	85.1	6.7 6.6	6.7	6.7	5.7 5.4	5.6	5.2	4.8 3.0	3.9	4.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	18.6 18.6	18.6	8.1 8.1	8.1	31.0 31.0	31.0	83.4 83.4	83.4	6.5 6.5	6.5	6.5	4.9 4.6	4.8		3.2 5.0	4.1	
9-Mar-15	Cloudy	Moderate	13:56	Surface	1	19.2 19.2	19.2	8.2 8.2	8.2	32.1 32.2	32.2	83.5 83.2	83.4	6.4 6.4	6.4	6.4	5.5 5.7	5.6	6.5	5.5 7.1	6.3	6.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	18.8 18.8	18.8	8.2 8.2	8.2	33.5 33.6	33.6	84.1 83.7	83.9	6.4 6.4	6.4	6.4	7.2 7.4	7.3		6.2 6.1	6.2	
11-Mar-15	Cloudy	Moderate	14:56	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	32.7 32.7	32.7	96.6 96.5	96.6	7.4 7.4	7.4	7.4	4.7 4.7	4.7	6.0	7.7 4.9	6.3	6.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	18.7 18.7	18.7	8.2 8.2	8.2	31.8 31.8	31.8	93.8 93.7	93.8	7.3 7.2	7.3	7.3	7.3 7.2	7.3		4.6 10.1	7.4	
13-Mar-15	Cloudy	Moderate	16:52	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	32.5 32.5	32.5	87.0 87.1	87.1	6.7 6.7	6.7	6.7	4.2 4.1	4.2	4.3	2.1 3.3	2.7	2.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3	18.6 18.6	18.6	8.1 8.1	8.1	32.5 32.5	32.5	86.9 86.2	86.6	6.7 6.6	6.7	6.7	4.3 4.3	4.3		1.9 2.8	2.4	
17-Mar-15	Fine	Moderate	10:22	Surface	1	20.1 20.1	20.1	8.2 8.2	8.2	29.8 29.8	29.8	79.1 79.6	79.4	6.0 6.1	6.1	6.1	3.7 3.4	3.6	4.0	2.9 4.9	3.9	4.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.4	19.6 19.6	19.6	8.1 8.1	8.1	30.9 30.9	30.9	77.5 77.1	77.3	5.9 5.9	5.9	5.9	4.2 4.3	4.3		5.2 4.4	4.8	
19-Mar-15	Fine	Moderate	11:32	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	31.6 31.5	31.6	100.8 102.4	101.6	7.6 7.7	7.7	7.7	11.2 12.2	11.7	11.8	9.3 9.4	9.4	11.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3	20.1 20.1	20.1	8.1 8.1	8.1	31.9 32.0	32.0	104.1 105.7	104.9	7.8 8.0	7.9	7.9	11.6 12.1	11.9		14.8 12.2	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 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-Mar-15	Fine	Moderate	12:22	Surface	1	20.7 20.7	20.7	8.1 8.1	8.1	31.8 27.4	29.6	86.6 80.8	83.7	6.4 6.2	6.3	6.3	12.1 12.8	12.5	14.3	12.7 12.1	12.4	19.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.4	20.3 20.3	20.3	8.1 8.1	8.1	27.7 28.0	27.9	65.9 77.9	71.9	5.1 6.0	5.6	5.6	17.2 14.9	16.1		28.1 23.8	26.0	
23-Mar-15	Cloudy	Moderate	14:30	Surface	1	20.1 20.1	20.1	8.2 8.2	8.2	32.2 32.5	32.4	96.2 94.1	95.2	7.2 7.1	7.2	7.2	4.1 4.5	4.3	4.6	11.2 6.9	9.1	8.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.5	20.1 20.1	20.1	8.2 8.2	8.2	32.8 32.9	32.9	96.4 95.1	95.8	7.2 7.1	7.2	7.2	4.5 5.1	4.8		6.9 6.6	6.8	
25-Mar-15	Cloudy	Moderate	15:16	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	32.1 32.1	32.1	90.0 89.6	89.8	6.7 6.7	6.7	6.7	4.4 4.9	4.7	4.9	3.0 3.8	3.4	2.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.1	20.4 20.4	20.4	8.1 8.1	8.1	32.2 32.6	32.4	89.9 89.6	89.8	6.7 6.7	6.7	6.7	5.1 5.1	5.1		1.8 1.9	1.9	
27-Mar-15	Cloudy	Moderate	17:07	Surface	1	20.8 20.8	20.8	8.1 8.1	8.1	30.8 30.8	30.8	101.7 94.8	98.3	7.6 7.1	7.4	7.4	7.2 7.8	7.5	7.7	1.4 0.8	1.1	2.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3	20.7 20.7	20.7	8.1 8.1	8.1	31.2 31.3	31.3	94.3 97.2	95.8	7.0 7.3	7.2	7.2	7.8 7.8	7.8		4.4 2.2	3.3	
31-Mar-15	Cloudy	Moderate	10:32	Surface	1	22.6 22.6	22.6	8.3 8.3	8.3	24.1 24.1	24.1	94.5 99.3	96.9	7.1 7.5	7.3	7.3	3.1 2.9	3.0	4.8	5.2 2.8	4.0	3.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	20.9 20.9	20.9	8.1 8.1	8.1	32.7 32.7	32.7	91.7 86.5	89.1	6.8 6.4	6.6	6.6	6.4 6.6	6.5		2.7 3.9	3.3	

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

Water Quality Monitoring Results at 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*
2-Mar-15	Fine	Moderate	15:35	Surface	1	18.9 18.9	18.9	8.2 8.2	8.2	32.1 32.1	32.1	81.7 82.8	82.3	6.3 6.4	6.4	6.4	5.2 4.7	5.0	5.3	3.6 4.2	3.9	5.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	18.7 18.7	18.7	8.2 8.2	8.2	32.4 32.4	32.4	81.9 82.9	82.4	6.3 6.4	6.4	6.4	5.7 5.5	5.6		4.6 8.3	6.5	
4-Mar-15	Fine	Moderate	17:10	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	32.6 32.5	32.6	110.9 110.7	110.8	8.5 8.5	8.5	8.5	3.6 3.6	3.6	3.6	2.4 4.0	3.2	3.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	18.8 18.8	18.8	8.2 8.2	8.2	32.6 32.6	32.6	110.1 110.3	110.2	8.5 8.5	8.5	8.5	3.5 3.5	3.5		2.6 4.6	3.6	
6-Mar-15	Cloudy	Moderate	18:28	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	30.2 30.2	30.2	77.6 78.1	77.9	6.0 6.1	6.1	6.1	7.0 7.0	7.0	6.3	5.0 6.9	6.0	6.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	18.7 18.7	18.7	8.1 8.1	8.1	31.1 31.1	31.1	78.2 78.4	78.3	6.1 6.1	6.1	6.1	5.6 5.5	5.6		6.0 5.8	5.9	
9-Mar-15	Cloudy	Moderate	08:29	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	30.8 30.7	30.8	82.7 81.8	82.3	6.4 6.3	6.4	6.4	6.0 6.6	6.3	8.9	20.6 23.2	21.9	17.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	18.8 18.8	18.8	8.1 8.1	8.1	31.1 31.2	31.2	79.4 78.6	79.0	6.2 6.1	6.2	6.2	11.5 11.3	11.4		8.1 16.8	12.5	
11-Mar-15	Cloudy	Moderate	10:01	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	33.1 33.1	33.1	97.8 97.7	97.8	7.5 7.5	7.5	7.5	5.3 5.0	5.2	4.8	15.0 13.6	14.3	10.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	18.6 18.6	18.6	8.1 8.1	8.1	33.3 33.3	33.3	97.7 97.7	97.7	7.5 7.5	7.5	7.5	4.3 4.3	4.3		6.9 7.0	7.0	
13-Mar-15	Cloudy	Moderate	10:22	Surface	1	18.7 18.7	18.7	8.0 8.0	8.0	29.2 29.2	29.2	82.7 82.1	82.4	6.5 6.4	6.5	6.5	2.5 2.8	2.7	3.2	8.6 5.8	7.2	4.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3	18.7 18.7	18.7	8.1 8.1	8.1	29.9 30.1	30.0	82.0 83.5	82.8	6.4 6.5	6.5	6.5	3.9 3.5	3.7		2.3 1.1	1.7	
17-Mar-15	Fine	Moderate	15:13	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	29.9 30.1	30.0	79.9 79.6	79.8	6.1 6.0	6.1	6.1	3.4 3.4	3.4	3.0	2.7 3.4	3.1	3.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	20.2 20.2	20.2	8.2 8.2	8.2	30.8 30.7	30.8	79.8 81.1	80.5	6.0 6.1	6.1	6.1	2.6 2.6	2.6		3.9 2.7	3.3	
19-Mar-15	Fine	Moderate	17:45	Surface	1	20.6 20.6	20.6	8.0 8.0	8.0	29.0 28.9	29.0	110.9 110.1	110.5	8.4 8.4	8.4	8.4	11.5 11.2	11.4	12.0	27.2 11.0	19.1	18.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.1	20.5 20.5	20.5	8.0 8.0	8.0	29.3 29.3	29.3	109.2 109.1	109.2	8.3 8.3	8.3	8.3	11.6 13.5	12.6		20.7 14.8	17.8	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at 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-Mar-15	Fine	Moderate	18:54	Surface	1	21.2 21.2	21.2	8.0 8.0	8.0	20.6 23.2	21.9	77.3 71.5	74.4	6.1 5.5	5.8	5.8	11.0 11.7	11.4	14.4	36.3 25.7	31.0	34.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	21.2 21.2	21.2	8.0 8.0	8.0	23.8 23.8	23.8	75.6 72.8	74.2	5.8 5.6	5.7	5.7	17.2 17.4	17.3		30.3 43.7	37.0	
23-Mar-15	Cloudy	Moderate	08:30	Surface	1	20.1 20.1	20.1	8.1 8.1	8.1	30.3 30.5	30.4	94.6 94.4	94.5	7.2 7.2	7.2	7.2	4.1 4.3	4.2	4.4	9.2 6.8	8.0	16.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3	20.1 20.1	20.1	8.1 8.1	8.1	30.6 30.7	30.7	90.3 94.5	92.4	6.8 7.2	7.0	7.0	4.3 4.7	4.5		24.2 26.8	25.5	
25-Mar-15	Cloudy	Moderate	09:14	Surface	1	20.8 20.8	20.8	8.0 8.0	8.0	29.4 29.4	29.4	85.0 84.9	85.0	6.4 6.4	6.4	6.4	4.5 4.1	4.3	4.5	3.6 2.8	3.2	3.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3	20.8 20.8	20.8	8.0 8.0	8.0	29.9 29.8	29.9	85.3 85.1	85.2	6.4 6.4	6.4	6.4	5.0 4.3	4.7		1.6 5.5	3.6	
27-Mar-15	Cloudy	Moderate	10:09	Surface	1	20.6 20.6	20.6	8.0 8.0	8.0	28.6 29.1	28.9	103.8 93.5	98.7	7.9 7.1	7.5	7.5	9.2 9.2	9.2	9.8	2.8 2.3	2.6	3.1
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3	20.5 20.5	20.5	8.0 8.0	8.0	30.1 30.2	30.2	101.4 105.5	103.5	7.7 8.0	7.9	7.9	10.2 10.5	10.4		3.5 3.4	3.5	
31-Mar-15	Cloudy	Moderate	15:20	Surface	1	22.3 22.4	22.4	8.1 8.2	8.2	26.7 26.7	26.7	89.8 95.0	92.4	6.7 7.1	6.9	6.9	3.1 2.6	2.9	2.8	1.3 8.0	4.7	6.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	21.6 21.5	21.6	8.1 8.0	8.1	29.5 29.6	29.6	99.1 94.2	96.7	7.4 7.0	7.2	7.2	2.7 2.7	2.7		9.8 6.4	8.1	

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

Water Quality Monitoring Results at 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*
2-Mar-15	Fine	Moderate	10:40	Surface	1	19.5 19.5	19.5	8.0 8.0	8.0	33.7 33.7	33.7	96.3 95.8	96.1	7.3 7.2	7.3	7.3	6.2 6.4	6.3	6.8	9.8 4.3	7.1	6.8
				Middle	3.5	19.5 19.5	19.5	8.0 8.0	8.0	33.7 33.7	33.7	95.2 95.4	95.3	7.2 7.2	7.2		6.6 6.3	6.5		5.0 6.3	5.7	
				Bottom	6	19.5 19.5	19.5	8.0 8.0	8.0	33.7 33.7	33.7	94.6 94.3	94.5	7.1 7.1	7.1	7.1	7.6 7.6	7.6		8.1 7.2	7.7	
4-Mar-15	Fine	Moderate	12:02	Surface	1	18.4 18.4	18.4	8.2 8.2	8.2	33.5 33.5	33.5	88.4 88.4	88.4	6.8 6.8	6.8	6.9	5.6 6.0	5.8	7.1	5.4 5.9	5.7	7.4
				Middle	3.5	18.4 18.4	18.4	8.2 8.2	8.2	33.6 33.6	33.6	89.9 90.0	90.0	6.9 6.9	6.9		6.5 6.5	6.5		3.5 8.2	5.9	
				Bottom	6	18.3 18.3	18.3	8.2 8.2	8.2	33.8 33.8	33.8	88.6 89.0	88.8	6.8 6.8	6.8	6.8	9.3 8.7	9.0		12.0 9.2	10.6	
6-Mar-15	Cloudy	Moderate	12:32	Surface	1	18.8 18.8	18.8	8.0 8.0	8.0	31.9 31.9	31.9	89.4 88.4	88.9	6.9 6.8	6.9	6.6	6.9 6.9	6.9	7.3	5.0 5.9	5.5	4.8
				Middle	3.5	18.8 18.9	18.9	8.0 8.0	8.0	31.9 31.9	31.9	81.0 81.3	81.2	6.2 6.3	6.3		6.8 7.0	6.9		4.1 3.2	3.7	
				Bottom	6	18.9 18.9	18.9	8.0 8.0	8.0	31.9 31.9	31.9	84.6 84.8	84.7	6.5 6.5	6.5	6.5	8.0 8.1	8.1		4.1 6.2	5.2	
9-Mar-15	Cloudy	Moderate	14:59	Surface	1	18.9 18.9	18.9	8.1 8.1	8.1	32.0 32.0	32.0	74.6 74.3	74.5	5.7 5.7	5.7	5.7	8.6 8.7	8.7	9.4	2.8 4.0	3.4	3.1
				Middle	3.5	18.8 18.7	18.8	8.1 8.1	8.1	32.1 32.1	32.1	74.2 74.2	74.2	5.7 5.7	5.7		9.5 10.0	9.8		1.9 2.7	2.3	
				Bottom	6	18.7 18.7	18.7	8.1 8.1	8.1	32.1 32.1	32.1	74.1 74.2	74.2	5.7 5.7	5.7	5.7	9.8 9.6	9.7		4.2 2.9	3.6	
11-Mar-15	Cloudy	Moderate	16:57	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	33.7 33.7	33.7	91.2 91.6	91.4	7.0 7.0	7.0	7.0	13.7 13.6	13.7	13.0	18.0 18.0	18.0	23.5
				Middle	3.5	18.8 18.8	18.8	8.1 8.1	8.1	33.8 33.9	33.9	91.4 92.3	91.9	7.0 7.0	7.0		12.9 11.7	12.3		16.6 17.0	16.8	
				Bottom	6	18.8 18.8	18.8	8.1 8.1	8.1	33.9 33.9	33.9	91.6 92.2	91.9	7.0 7.0	7.0	7.0	13.4 12.8	13.1		38.2 33.4	35.8	
13-Mar-15	Cloudy	Moderate	17:14	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	32.0 32.0	32.0	84.0 83.0	83.5	6.5 6.4	6.5	6.4	5.8 5.9	5.9	6.5	2.3 3.1	2.7	3.2
				Middle	4.5	18.6 18.6	18.6	8.1 8.1	8.1	32.2 32.2	32.2	80.6 80.6	80.6	6.2 6.2	6.2		6.1 6.2	6.2		4.3 3.0	3.7	
				Bottom	8	18.6 18.6	18.6	8.1 8.1	8.1	32.3 32.3	32.3	78.9 78.9	78.9	6.1 6.1	6.1	6.1	7.4 7.2	7.3		3.0 3.4	3.2	
17-Mar-15	Fine	Moderate	09:53	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	30.5 30.5	30.5	78.4 77.5	78.0	5.9 5.9	5.9	5.9	7.1 8.0	7.6	8.4	9.8 8.8	9.3	8.9
				Middle	4	20.3 20.3	20.3	8.1 8.1	8.1	30.7 30.7	30.7	78.6 78.3	78.5	5.9 5.9	5.9		8.0 8.3	8.2		8.3 8.3	8.3	
				Bottom	7	20.4 20.3	20.4	8.1 8.1	8.1	30.8 30.7	30.8	77.7 78.9	78.3	5.9 6.0	6.0	6.0	9.3 9.3	9.3		9.2 9.2	9.2	
19-Mar-15	Fine	Moderate	12:11	Surface	1	20.5 20.5	20.5	8.1 8.1	8.1	32.6 32.5	32.6	102.1 102.1	102.1	7.6 7.6	7.6	7.4	7.7 7.8	7.8	10.4	10.8 9.8	10.3	10.1
				Middle	4.5	20.4 20.4	20.4	8.1 8.1	8.1	32.6 32.6	32.6	97.5 95.7	96.6	7.3 7.1	7.2		9.7 9.8	9.8		8.7 11.2	10.0	
				Bottom	8	20.4 20.4	20.4	8.1 8.1	8.1	32.6 32.6	32.6	95.2 95.1	95.2	7.1 7.1	7.1	7.1	13.5 13.9	13.7		8.2 11.8	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-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-Mar-15	Fine	Moderate	12:34	Surface	1	20.6 20.6	20.6	8.1 8.1	8.1	32.7 32.7	32.7	79.6 81.8	80.7	6.3 6.5	6.4	6.4	3.8 3.8	3.8	3.6	18.5 18.1	18.3	15.5
				Middle	3	20.6 20.7	20.7	8.1 8.0	8.1	32.7 32.7	32.7	79.7 78.9	79.3	6.3 6.2	6.3		4.3 4.3	4.3		12.7 13.2	13.0	
				Bottom	5	20.7 20.7	20.7	8.1 8.0	8.1	32.7 32.7	32.7	78.4 77.5	78.0	6.2 6.1	6.2	6.2	2.5 2.7	2.6		13.7 16.8	15.3	
23-Mar-15	Cloudy	Moderate	15:30	Surface	1	20.6 20.6	20.6	8.1 8.1	8.1	31.5 31.7	31.6	82.8 82.4	82.6	6.2 6.2	6.2	6.2	8.5 8.5	8.5	8.7	13.0 10.0	11.5	12.5
				Middle	3	20.5 20.5	20.5	8.1 8.1	8.1	31.7 31.7	31.7	82.7 82.5	82.6	6.2 6.2	6.2		10.0 8.1	9.1		15.8 12.6	14.2	
				Bottom	5	20.5 20.5	20.5	8.1 8.1	8.1	31.7 31.8	31.8	82.9 80.9	81.9	6.2 6.0	6.1	6.1	8.6 8.4	8.5		10.0 13.4	11.7	
25-Mar-15	Cloudy	Moderate	16:46	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	32.7 33.1	32.9	92.6 92.4	92.5	6.9 6.9	6.9	6.9	9.4 10.0	9.7	12.7	7.4 6.9	7.2	7.0
				Middle	3	20.3 20.3	20.3	8.2 8.2	8.2	32.8 33.2	33.0	92.7 92.5	92.6	6.9 6.9	6.9		12.5 11.1	11.8		6.4 5.2	5.8	
				Bottom	5	20.3 20.3	20.3	8.2 8.2	8.2	32.8 33.2	33.0	92.7 92.4	92.6	6.9 6.9	6.9	6.9	15.1 17.8	16.5		7.8 8.1	8.0	
27-Mar-15	Cloudy	Moderate	17:20	Surface	1	20.6 20.5	20.6	8.1 8.1	8.1	33.4 34.0	33.7	100.3 100.1	100.2	7.4 7.4	7.4	7.4	4.2 4.2	4.2	3.9	1.4 2.6	2.0	3.0
				Middle	3	20.5 20.4	20.5	8.1 8.1	8.1	33.2 33.3	33.3	100.0 99.4	99.7	7.4 7.4	7.4		3.0 3.1	3.1		5.0 2.6	3.8	
				Bottom	5	20.3 20.3	20.3	8.1 8.1	8.1	33.8 33.6	33.7	100.1 99.4	99.8	7.4 7.4	7.4	7.4	4.0 4.9	4.5		4.5 2.0	3.3	
31-Mar-15	Cloudy	Moderate	10:35	Surface	1	22.2 22.3	22.3	8.1 8.2	8.2	30.8 30.7	30.8	103.2 102.4	102.8	7.5 7.5	7.5	7.4	3.2 3.3	3.3	3.7	9.6 6.4	8.0	7.2
				Middle	3	22.0 22.1	22.1	8.1 8.1	8.1	30.2 30.1	30.2	99.7 99.8	99.8	7.3 7.3	7.3		3.8 3.7	3.8		7.8 7.6	7.7	
				Bottom	5	22.0 23.0	22.5	8.1 8.1	8.1	30.9 30.1	30.5	98.2 99.7	99.0	7.2 7.2	7.2	7.2	4.1 4.1	4.1		5.8 6.2	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 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*
2-Mar-15	Fine	Moderate	17:07	Surface	1	19.5 19.5	19.5	8.1 8.1	8.1	31.6 31.6	31.6	88.2 89.4	88.8	6.7 6.8	6.8	6.9	5.7 5.7	5.7	5.9	1.7 1.9	1.8	2.6
				Middle	3.5	19.3 19.4	19.4	8.1 8.1	8.1	31.8 31.8	31.8	90.7 90.8	90.8	6.9 6.9	6.9		5.3 5.5	5.4		2.7 2.6	2.7	
				Bottom	6	19.3 19.3	19.3	8.1 8.1	8.1	32.5 32.5	32.5	90.7 90.8	90.8	6.9 6.9	6.9	6.9	6.4 6.6	6.5		3.7 3.0	3.4	
4-Mar-15	Fine	Moderate	18:16	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	31.8 31.8	31.8	83.3 83.3	83.3	6.4 6.4	6.4	6.5	8.2 8.9	8.6	8.9	4.3 3.9	4.1	3.5
				Middle	3.5	18.8 18.8	18.8	8.1 8.1	8.1	31.8 31.8	31.8	84.3 84.8	84.6	6.5 6.5	6.5		8.4 8.6	8.5		3.2 3.7	3.5	
				Bottom	6	18.8 18.8	18.8	8.1 8.1	8.1	31.8 31.8	31.8	82.7 84.1	83.4	6.4 6.5	6.5	6.5	9.8 9.6	9.7		2.1 3.4	2.8	
6-Mar-15	Cloudy	Moderate	19:26	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	31.9 31.9	31.9	65.6 65.0	65.3	5.1 5.0	5.1	5.2	6.4 6.4	6.4	6.3	8.2 5.0	6.6	6.9
				Middle	3.5	18.8 18.8	18.8	8.1 8.1	8.1	31.9 31.9	31.9	67.4 67.4	67.4	5.2 5.2	5.2		6.2 6.2	6.2		6.9 6.7	6.8	
				Bottom	6	18.8 18.8	18.8	8.1 8.1	8.1	32.0 32.0	32.0	68.5 68.7	68.6	5.3 5.3	5.3	5.3	6.2 6.3	6.3		7.1 7.4	7.3	
9-Mar-15	Cloudy	Moderate	08:04	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	31.8 31.8	31.8	99.7 98.8	99.3	7.7 7.6	7.7	7.6	8.4 8.6	8.5	8.5	2.5 3.4	3.0	3.1
				Middle	3.5	18.6 18.6	18.6	8.1 8.1	8.1	31.8 31.8	31.8	96.1 96.1	96.1	7.4 7.4	7.4		8.3 8.2	8.3		3.3 2.6	3.0	
				Bottom	6	18.6 18.6	18.6	8.1 8.1	8.1	31.9 31.9	31.9	93.7 93.0	93.4	7.3 7.2	7.3	7.3	8.9 8.7	8.8		2.4 3.9	3.2	
11-Mar-15	Cloudy	Moderate	09:42	Surface	1	18.9 18.9	18.9	8.0 8.0	8.0	32.7 32.7	32.7	98.9 98.2	98.6	7.6 7.5	7.6	7.6	8.5 8.4	8.5	9.5	10.8 10.6	10.7	10.5
				Middle	4	18.9 18.9	18.9	8.0 8.0	8.0	32.7 32.7	32.7	98.6 98.2	98.4	7.5 7.5	7.5		9.9 9.5	9.7		9.9 11.1	10.5	
				Bottom	7	18.9 18.9	18.9	8.0 8.0	8.0	32.8 32.8	32.8	98.0 97.7	97.9	7.5 7.5	7.5	7.5	10.4 9.9	10.2		11.1 9.6	10.4	
13-Mar-15	Cloudy	Moderate	09:57	Surface	1	18.5 18.5	18.5	8.1 8.1	8.1	30.3 30.3	30.3	92.7 90.4	91.6	7.3 7.1	7.2	7.1	7.1 7.0	7.1	7.4	1.5 0.8	1.2	1.5
				Middle	4.5	18.5 18.5	18.5	8.1 8.1	8.1	30.4 30.3	30.4	88.6 88.7	88.7	6.9 6.9	6.9		7.3 7.3	7.3		0.5 1.8	1.2	
				Bottom	8	18.5 18.5	18.5	8.1 8.1	8.1	25.1 30.4	27.8	88.1 88.0	88.1	7.1 6.9	7.0	7.0	7.7 7.6	7.7		2.8 1.4	2.1	
17-Mar-15	Fine	Moderate	16:29	Surface	1	21.2 21.2	21.2	8.1 8.1	8.1	30.8 30.8	30.8	78.8 78.6	78.7	5.9 5.8	5.9	5.9	8.1 10.0	9.1	8.7	9.7 9.2	9.5	9.3
				Middle	4	21.1 21.2	21.2	8.1 8.1	8.1	30.8 30.8	30.8	78.4 78.5	78.5	5.8 5.8	5.8		8.2 8.2	8.2		10.0 9.7	9.9	
				Bottom	7	21.1 21.1	21.1	8.1 8.1	8.1	30.9 30.9	30.9	77.3 77.7	77.5	5.7 5.8	5.8	5.8	8.4 9.2	8.8		8.2 8.7	8.5	
19-Mar-15	Fine	Moderate	18:45	Surface	1	20.7 20.7	20.7	8.1 8.1	8.1	31.6 31.6	31.6	85.1 83.7	84.4	6.3 6.2	6.3	6.6	8.5 8.7	8.6	8.7	5.1 9.0	7.1	7.4
				Middle	4.5	20.6 20.5	20.6	8.1 8.1	8.1	32.1 28.8	30.5	90.2 89.4	89.8	6.7 6.8	6.8		8.7 8.8	8.8		7.0 7.5	7.3	
				Bottom	8	20.5 20.4	20.5	8.1 8.1	8.1	32.1 32.2	32.2	96.4 96.5	96.5	7.2 7.2	7.2	7.2	8.7 8.8	8.8		6.8 8.8	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 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-Mar-15	Fine	Moderate	20:16	Surface	1	20.6 20.7	20.7	8.2 8.2	8.2	31.6 32.6	32.1	79.6 80.6	80.1	6.3 6.4	6.4	6.4	4.7 5.5	5.1	4.9	39.0 30.7	34.9	31.6
				Middle	3	20.7 20.7	20.7	8.2 8.2	8.2	31.8 31.7	31.8	80.2 79.9	80.1	6.3 6.3	6.3		4.3 4.5	4.4		39.0 29.7	34.4	
				Bottom	5	20.7 20.7	20.7	8.2 8.2	8.2	32.6 32.5	32.6	78.8 79.7	79.3	6.2 6.3	6.3	6.3	5.6 4.7	5.2		27.0 23.7	25.4	
23-Mar-15	Cloudy	Moderate	08:43	Surface	1	20.9 20.9	20.9	8.0 8.0	8.0	28.3 28.3	28.3	91.9 87.0	89.5	7.0 6.6	6.8	6.8	9.7 9.8	9.8	9.9	17.4 12.2	14.8	15.2
				Middle	3	20.8 20.8	20.8	8.0 8.0	8.0	28.4 28.3	28.4	91.4 86.5	89.0	6.9 6.6	6.8		9.9 9.5	9.7		12.6 15.8	14.2	
				Bottom	5	20.8 20.8	20.8	8.0 8.0	8.0	28.4 28.4	28.4	87.1 86.3	86.7	6.6 6.5	6.6	6.6	10.2 10.3	10.3		11.4 22.0	16.7	
25-Mar-15	Cloudy	Moderate	09:15	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	34.7 29.7	32.2	94.6 92.9	93.8	7.0 7.0	7.0	7.2	8.9 8.7	8.8	9.9	8.5 7.2	7.9	7.0
				Middle	3	20.4 20.4	20.4	8.1 8.1	8.1	34.6 34.5	34.6	102.3 97.7	100.0	7.5 7.2	7.4		9.1 9.0	9.1		4.6 9.8	7.2	
				Bottom	5	20.4 20.4	20.4	8.1 8.1	8.1	34.6 34.1	34.4	101.1 96.2	98.7	7.4 7.1	7.3	7.3	12.1 11.5	11.8		7.7 4.3	6.0	
27-Mar-15	Cloudy	Moderate	09:59	Surface	1	20.2 20.2	20.2	8.0 8.0	8.0	30.5 30.8	30.7	103.4 103.4	103.4	7.8 7.8	7.8	7.9	9.6 9.5	9.6	9.9	1.9 1.3	1.6	1.4
				Middle	3	20.2 20.2	20.2	8.1 8.1	8.1	30.7 30.5	30.6	104.3 102.7	103.5	7.9 7.8	7.9		10.1 9.4	9.8		2.1 0.6	1.4	
				Bottom	5	20.2 20.2	20.2	8.1 8.1	8.1	30.9 30.4	30.7	103.5 100.4	102.0	7.8 7.6	7.7	7.7	10.3 10.2	10.3		0.8 1.8	1.3	
31-Mar-15	Cloudy	Moderate	15:13	Surface	1	22.1 22.3	22.2	8.3 8.3	8.3	31.8 31.2	31.5	100.5 103.8	102.2	7.3 7.5	7.4	7.4	1.8 2.0	1.9	2.2	3.9 5.6	4.8	5.2
				Middle	3	20.9 20.9	20.9	8.2 8.2	8.2	33.5 33.5	33.5	98.6 101.5	100.1	7.2 7.5	7.4		1.2 1.2	1.2		4.8 6.6	5.7	
				Bottom	5	20.7 20.7	20.7	8.2 8.2	8.2	33.4 33.3	33.4	96.4 98.6	97.5	7.1 7.3	7.2	7.2	3.4 3.5	3.5		4.5 5.6	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 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*
2-Mar-15	Fine	Moderate	11:24	Surface	1	18.7 18.8	18.8	8.1 8.1	8.1	30.3 30.3	30.3	78.6 78.0	78.3	6.1 6.1	6.1	6.1	3.8 3.8	3.8	3.7	3.1 2.6	2.9	3.1
				Middle	4	18.4 18.4	18.4	8.1 8.1	8.1	33.3 32.9	33.1	79.3 78.3	78.8	6.1 6.0	6.1		3.2 3.2	3.2		3.1 3.9	3.5	
				Bottom	7	18.3 18.3	18.3	8.1 8.1	8.1	33.6 33.6	33.6	76.4 77.3	76.9	5.9 6.0	6.0	6.0	3.9 4.1	4.0		3.2 2.4	2.8	
4-Mar-15	Fine	Moderate	12:01	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	33.0 33.1	33.1	100.2 100.2	100.2	7.7 7.7	7.7	7.9	3.9 4.2	4.1	5.1	6.5 4.6	5.6	4.9
				Middle	5	18.8 18.8	18.8	8.1 8.1	8.1	33.3 33.3	33.3	103.3 104.2	103.8	7.9 8.0	8.0		5.2 5.2	5.2		3.2 3.6	3.4	
				Bottom	9	18.7 18.7	18.7	8.1 8.1	8.1	33.7 33.7	33.7	101.1 100.4	100.8	7.7 7.7	7.7	7.7	5.8 6.0	5.9		7.5 3.8	5.7	
6-Mar-15	Cloudy	Moderate	13:31	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	32.9 32.8	32.9	86.9 86.1	86.5	6.7 6.6	6.7	6.6	6.2 6.1	6.2	9.0	5.2 9.6	7.4	6.4
				Middle	5	18.6 18.5	18.6	8.2 8.2	8.2	33.2 33.2	33.2	84.3 83.7	84.0	6.5 6.4	6.5		6.2 6.2	6.2		4.4 7.6	6.0	
				Bottom	9	18.5 18.5	18.5	8.2 8.2	8.2	33.5 33.4	33.5	82.1 81.2	81.7	6.3 6.2	6.3	6.3	13.7 15.3	14.5		5.0 6.5	5.8	
9-Mar-15	Cloudy	Moderate	14:25	Surface	1	19.1 19.1	19.1	8.2 8.2	8.2	31.3 31.3	31.3	78.5 79.1	78.8	6.0 6.1	6.1	6.1	8.7 8.4	8.6	8.8	5.8 8.8	7.3	7.7
				Middle	5	18.8 18.8	18.8	8.2 8.2	8.2	32.0 32.0	32.0	79.3 79.1	79.2	6.1 6.1	6.1		8.5 8.5	8.5		11.8 8.4	10.1	
				Bottom	9	18.7 18.7	18.7	8.2 8.2	8.2	32.6 32.6	32.6	77.8 77.0	77.4	6.0 5.9	6.0	6.0	9.2 9.3	9.3		4.0 7.2	5.6	
11-Mar-15	Cloudy	Moderate	15:19	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	33.5 33.4	33.5	90.7 90.0	90.4	6.9 6.9	6.9	6.9	8.9 9.1	9.0	9.5	5.0 7.5	6.3	4.9
				Middle	5	18.7 18.7	18.7	8.2 8.2	8.2	33.5 33.5	33.5	90.0 90.1	90.1	6.9 6.9	6.9		9.3 8.8	9.1		4.3 3.8	4.1	
				Bottom	9	18.7 18.7	18.7	8.2 8.2	8.2	33.6 33.6	33.6	91.8 91.8	91.8	7.0 7.0	7.0	7.0	10.3 10.6	10.5		3.7 4.6	4.2	
13-Mar-15	Cloudy	Moderate	17:20	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	32.7 32.4	32.6	69.5 70.2	69.9	5.4 5.4	5.4	5.5	2.7 2.6	2.7	3.6	0.6 1.2	0.9	3.2
				Middle	5	18.5 18.5	18.5	8.2 8.2	8.2	33.0 33.0	33.0	71.0 70.4	70.7	5.5 5.4	5.5		3.1 3.0	3.1		5.1 0.9	3.0	
				Bottom	9	18.5 18.5	18.5	8.2 8.2	8.2	33.0 33.1	33.1	69.1 70.3	69.7	5.3 5.4	5.4	5.4	5.0 4.9	5.0		2.9 8.4	5.7	
17-Mar-15	Fine	Moderate	10:47	Surface	1	20.0 20.1	20.1	8.2 8.2	8.2	30.2 30.2	30.2	82.1 82.0	82.1	6.2 6.2	6.2	6.2	3.6 3.7	3.7	4.1	3.5 7.0	5.3	5.0
				Middle	5.5	19.4 19.4	19.4	8.2 8.2	8.2	31.0 31.0	31.0	80.2 79.8	80.0	6.1 6.1	6.1		4.6 4.6	4.6		4.5 5.1	4.8	
				Bottom	10	19.1 19.1	19.1	8.2 8.2	8.2	31.9 31.9	31.9	78.6 78.4	78.5	6.0 6.0	6.0	6.0	4.1 4.1	4.1		3.1 6.7	4.9	
19-Mar-15	Fine	Moderate	11:51	Surface	1	19.7 19.8	19.8	8.1 8.1	8.1	33.2 33.1	33.2	101.9 100.1	101.0	7.7 7.5	7.6	7.7	10.6 10.5	10.6	12.2	8.2 9.0	8.6	13.3
				Middle	5.5	19.4 19.4	19.4	8.1 8.1	8.1	33.7 33.7	33.7	100.6 103.7	102.2	7.6 7.8	7.7		11.7 11.5	11.6		6.6 7.2	6.9	
				Bottom	10	19.4 19.4	19.4	8.1 8.1	8.1	33.9 33.9	33.9	101.4 102.7	102.1	7.6 7.7	7.7	7.7	14.5 14.2	14.4		24.0 24.7	24.4	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at 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-Mar-15	Fine	Moderate	12:44	Surface	1	20.5 20.1	20.3	8.2 8.2	8.2	31.2 32.1	31.7	78.8 79.5	79.2	5.9 6.0	6.0	6.1	7.6 7.9	7.8	8.0	11.4 8.3	9.9	10.3
				Middle	5	20.0 20.0	20.0	8.2 8.2	8.2	32.3 32.4	32.4	81.0 81.4	81.2	6.1 6.1	6.1		6.5 7.9	7.2		8.1 6.7	7.4	
				Bottom	9	19.9 19.9	19.9	8.2 8.2	8.2	32.7 32.8	32.8	81.5 82.1	81.8	6.1 6.2	6.2	6.2	9.1 9.1	9.1		9.9 17.4	13.7	
23-Mar-15	Cloudy	Moderate	15:04	Surface	1	20.8 20.8	20.8	8.2 8.2	8.2	30.3 29.9	30.1	88.8 90.3	89.6	6.7 6.8	6.8	6.8	6.1 5.0	5.6	5.7	7.4 7.7	7.6	6.1
				Middle	3.5	20.3 20.1	20.2	8.2 8.2	8.2	31.4 31.0	31.2	91.3 86.3	88.8	6.9 6.5	6.7		5.6 4.9	5.3		7.6 6.0	6.8	
				Bottom	6	20.1 20.1	20.1	8.2 8.2	8.2	31.5 31.3	31.4	93.9 86.4	90.2	7.1 6.5	6.8	6.8	5.6 6.8	6.2		4.8 2.9	3.9	
25-Mar-15	Cloudy	Moderate	15:30	Surface	1	20.3 20.2	20.3	8.2 8.1	8.2	34.1 34.2	34.2	86.4 86.5	86.5	6.4 6.4	6.4	6.4	3.9 3.9	3.9	7.5	5.7 6.3	6.0	6.0
				Middle	5	20.2 20.2	20.2	8.2 8.2	8.2	34.5 34.4	34.5	86.6 86.1	86.4	6.4 6.4	6.4		5.5 5.6	5.6		6.0 4.0	5.0	
				Bottom	9	20.2 20.2	20.2	8.2 8.2	8.2	34.7 34.6	34.7	86.8 85.8	86.3	6.4 6.3	6.4	6.4	11.8 14.4	13.1		7.7 6.0	6.9	
27-Mar-15	Cloudy	Moderate	17:25	Surface	1	20.4 20.4	20.4	8.1 8.2	8.2	33.2 33.2	33.2	98.9 101.6	100.3	7.3 7.5	7.4	7.3	10.1 11.1	10.6	11.1	2.2 1.9	2.1	3.1
				Middle	4.5	20.2 20.2	20.2	8.2 8.2	8.2	33.9 33.9	33.9	97.6 96.0	96.8	7.2 7.1	7.2		11.0 11.1	11.1		2.3 2.0	2.2	
				Bottom	8	20.2 20.2	20.2	8.1 8.1	8.1	34.0 34.0	34.0	96.0 95.5	95.8	7.1 7.1	7.1	7.1	11.7 11.4	11.6		5.0 4.9	5.0	
31-Mar-15	Cloudy	Moderate	10:54	Surface	1	21.8 22.0	21.9	8.2 8.3	8.3	27.6 26.4	27.0	108.0 105.9	107.0	8.1 7.9	8.0	7.6	3.5 3.3	3.4	4.4	6.6 7.2	6.9	7.9
				Middle	5	21.2 21.1	21.2	8.2 8.2	8.2	31.9 32.1	32.0	100.2 95.1	97.7	7.4 7.0	7.2		4.0 4.2	4.1		7.8 7.4	7.6	
				Bottom	9	20.7 20.7	20.7	8.2 8.2	8.2	33.8 33.8	33.8	85.8 83.2	84.5	6.3 6.1	6.2	6.2	5.6 5.8	5.7		6.8 11.6	9.2	

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

Water Quality Monitoring Results at 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*
2-Mar-15	Fine	Moderate	15:56	Surface	1	19.0 19.1	19.1	8.2 8.2	8.2	33.2 33.2	33.2	80.4 82.1	81.3	6.1 6.3	6.2	6.3	5.4 4.7	5.1	5.7	3.9 2.7	3.3	3.7
				Middle	5	18.7 18.7	18.7	8.2 8.2	8.2	33.2 33.2	33.2	80.9 82.7	81.8	6.2 6.3	6.3		5.6 5.3	5.5		3.7 2.9	3.3	
				Bottom	9	18.7 18.7	18.7	8.2 8.2	8.2	33.2 33.2	33.2	79.8 79.5	79.7	6.1 6.1	6.1	6.1	6.4 6.7	6.6		4.6 4.5	4.6	
4-Mar-15	Fine	Moderate	17:26	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	32.2 32.2	32.2	95.6 96.8	96.2	7.4 7.5	7.5	7.7	4.6 3.7	4.2	3.4	2.0 1.7	1.9	2.6
				Middle	5	18.7 18.7	18.7	8.1 8.1	8.1	32.1 32.2	32.2	100.9 100.7	100.8	7.8 7.8	7.8		2.7 2.8	2.8		3.2 3.0	3.1	
				Bottom	9	18.7 18.7	18.7	8.1 8.1	8.1	32.2 32.2	32.2	100.7 100.8	100.8	7.8 7.8	7.8	7.8	3.1 3.0	3.1		2.2 3.4	2.8	
6-Mar-15	Cloudy	Moderate	18:57	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	31.7 31.7	31.7	83.0 82.3	82.7	6.4 6.4	6.4	6.4	9.3 8.5	8.9	10.1	3.5 5.5	4.5	5.6
				Middle	5	18.6 18.6	18.6	8.2 8.2	8.2	32.4 32.5	32.5	81.9 81.7	81.8	6.3 6.3	6.3		7.5 7.4	7.5		4.3 4.7	4.5	
				Bottom	9	18.6 18.6	18.6	8.2 8.2	8.2	32.9 32.9	32.9	81.4 81.0	81.2	6.3 6.2	6.3	6.3	13.7 14.1	13.9		8.2 7.6	7.9	
9-Mar-15	Cloudy	Moderate	09:01	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	30.6 30.6	30.6	72.5 72.6	72.6	5.6 5.6	5.6	5.7	4.4 4.2	4.3	11.2	27.2 33.6	30.4	16.7
				Middle	5	18.7 18.7	18.7	8.1 8.1	8.1	30.9 30.9	30.9	73.3 73.6	73.5	5.7 5.7	5.7		13.4 14.7	14.1		11.6 10.6	11.1	
				Bottom	9	18.7 18.7	18.7	8.1 8.1	8.1	31.0 31.0	31.0	72.7 73.4	73.1	5.6 5.7	5.7	5.7	15.1 15.5	15.3		7.7 9.2	8.5	
11-Mar-15	Cloudy	Moderate	10:24	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	33.1 33.1	33.1	96.7 96.6	96.7	7.4 7.4	7.4	7.4	8.7 7.1	7.9	6.3	9.6 13.2	11.4	6.6
				Middle	5	18.6 18.6	18.6	8.1 8.1	8.1	33.4 33.3	33.4	96.5 96.5	96.5	7.4 7.4	7.4		5.7 5.6	5.7		3.9 3.4	3.7	
				Bottom	9	18.6 18.6	18.6	8.1 8.1	8.1	33.2 33.2	33.2	96.4 96.4	96.4	7.4 7.4	7.4	7.4	5.3 5.4	5.4		4.2 5.0	4.6	
13-Mar-15	Cloudy	Moderate	10:59	Surface	1	18.5 18.5	18.5	8.2 8.2	8.2	32.5 32.5	32.5	74.5 75.8	75.2	5.8 5.9	5.9	5.8	2.9 2.9	2.9	6.1	1.8 <0.5	1.2	4.4
				Middle	5	18.5 18.5	18.5	8.2 8.2	8.2	33.0 33.0	33.0	74.3 74.6	74.5	5.7 5.7	5.7		6.8 7.1	7.0		3.0 1.7	2.4	
				Bottom	9	18.5 18.5	18.5	8.2 8.2	8.2	33.1 33.1	33.1	74.5 74.5	74.5	5.7 5.7	5.7	5.7	8.5 8.4	8.5		10.4 8.6	9.5	
17-Mar-15	Fine	Moderate	15:40	Surface	1	20.1 20.0	20.1	8.2 8.2	8.2	30.6 31.0	30.8	81.0 82.9	82.0	6.1 6.3	6.2	6.3	4.5 4.6	4.6	8.1	7.6 8.4	8.0	7.5
				Middle	5.5	19.5 19.6	19.6	8.2 8.2	8.2	31.4 31.5	31.5	83.7 81.4	82.6	6.4 6.2	6.3		6.3 6.1	6.2		6.6 5.5	6.1	
				Bottom	10	19.0 19.1	19.1	8.2 8.2	8.2	32.2 32.0	32.1	83.2 81.9	82.6	6.4 6.3	6.4	6.4	13.4 13.6	13.5		8.8 8.1	8.5	
19-Mar-15	Fine	Moderate	18:05	Surface	1	21.4 21.0	21.2	8.0 8.0	8.0	29.2 29.9	29.6	99.0 97.3	98.2	7.4 7.3	7.4	7.4	7.0 6.8	6.9	9.4	13.0 27.8	20.4	19.7
				Middle	5.5	20.8 20.8	20.8	8.1 8.1	8.1	30.6 30.5	30.6	99.4 97.4	98.4	7.4 7.4	7.4		6.4 7.2	6.8		22.0 18.7	20.4	
				Bottom	10	20.6 20.6	20.6	8.1 8.1	8.1	32.2 32.2	32.2	100.0 98.8	99.4	7.4 7.4	7.4	7.4	15.1 14.1	14.6		15.8 20.7	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-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-Mar-15	Fine	Moderate	19:20	Surface	1	21.2 21.2	21.2	8.0 8.0	8.0	28.3 24.0	26.2	74.7 69.9	72.3	5.6 5.4	5.5	5.6	12.9 12.8	12.9	17.1	12.5 13.7	13.1	13.9
				Middle	4.5	20.8 20.8	20.8	8.1 8.1	8.1	27.2 27.8	27.5	76.2 71.9	74.1	5.8 5.5	5.7		17.2 17.3	17.3		9.8 9.5	9.7	
				Bottom	8	20.8 20.8	20.8	8.1 8.1	8.1	27.7 28.2	28.0	74.2 66.8	70.5	5.7 5.1	5.4	5.4	20.9 21.1	21.0		12.2 25.3	18.8	
23-Mar-15	Cloudy	Moderate	09:04	Surface	1	20.3 20.2	20.3	8.1 8.1	8.1	27.6 27.1	27.4	91.2 90.3	90.8	7.0 7.0	7.0	7.1	5.9 4.8	5.4	5.6	14.8 17.6	16.2	17.7
				Middle	5	20.2 20.2	20.2	8.1 8.1	8.1	28.2 27.0	27.6	91.7 93.0	92.4	7.0 7.2	7.1		5.5 5.1	5.3		11.8 15.0	13.4	
				Bottom	9	20.1 20.2	20.2	8.1 8.1	8.1	28.2 33.9	31.1	90.2 92.0	91.1	6.9 6.8	6.9	6.9	6.2 6.1	6.2		12.4 34.6	23.5	
25-Mar-15	Cloudy	Moderate	09:31	Surface	1	20.5 20.5	20.5	8.1 8.1	8.1	31.2 31.3	31.3	88.7 88.3	88.5	6.7 6.6	6.7	6.7	5.7 4.7	5.2	5.5	4.4 2.7	3.6	3.9
				Middle	5	20.4 20.4	20.4	8.1 8.1	8.1	32.4 32.8	32.6	89.2 89.0	89.1	6.7 6.6	6.7		5.2 5.2	5.2		2.0 2.1	2.1	
				Bottom	9	20.4 20.4	20.4	8.1 8.1	8.1	33.1 33.4	33.3	89.4 89.5	89.5	6.6 6.6	6.6	6.6	5.6 6.8	6.2		5.5 6.5	6.0	
27-Mar-15	Cloudy	Moderate	10:26	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	31.1 31.1	31.1	101.7 95.2	98.5	7.7 7.2	7.5	7.6	9.1 9.4	9.3	9.9	3.4 3.6	3.5	4.9
				Middle	4.5	20.3 20.3	20.3	8.1 8.1	8.1	32.6 32.7	32.7	101.7 99.9	100.8	7.6 7.5	7.6		9.6 10.5	10.1		4.5 6.0	5.3	
				Bottom	8	20.2 20.2	20.2	8.1 8.1	8.1	33.5 33.5	33.5	101.0 104.4	102.7	7.5 7.8	7.7	7.7	10.4 10.4	10.4		5.7 6.3	6.0	
31-Mar-15	Cloudy	Moderate	15:42	Surface	1	22.6 22.6	22.6	8.3 8.3	8.3	24.5 24.5	24.5	103.7 105.6	104.7	7.8 7.9	7.9	7.7	2.5 2.5	2.5	2.9	7.8 10.4	9.1	7.5
				Middle	5	21.9 21.9	21.9	8.2 8.2	8.2	28.0 28.0	28.0	99.4 100.5	100.0	7.4 7.5	7.5		3.1 3.0	3.1		6.2 5.4	5.8	
				Bottom	9	21.3 21.3	21.3	8.1 8.1	8.1	30.7 30.7	30.7	98.3 97.9	98.1	7.3 7.3	7.3	7.3	3.0 3.0	3.0		8.2 7.0	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 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*
2-Mar-15	Fine	Moderate	11:16	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	30.0 30.0	30.0	81.4 81.8	81.6	6.4 6.4	6.4	6.4	2.6 2.3	2.5	3.1	3.1 3.1	3.1	3.2
				Middle	3.5	18.4 18.4	18.4	8.1 8.1	8.1	33.2 33.0	33.1	80.3 81.9	81.1	6.2 6.3	6.3		3.0 3.0	3.0		2.9 2.9	2.9	
				Bottom	6	18.3 18.3	18.3	8.1 8.1	8.1	33.5 33.6	33.6	79.7 79.2	79.5	6.1 6.1	6.1	6.1	3.6 4.1	3.9		5.2 1.7	3.5	
4-Mar-15	Fine	Moderate	11:56	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	32.3 32.3	32.3	111.0 110.8	110.9	8.5 8.5	8.5	8.5	4.9 5.2	5.1	5.1	3.8 2.9	3.4	4.4
				Middle	4	18.7 18.8	18.8	8.2 8.1	8.2	33.0 32.8	32.9	109.9 109.9	109.9	8.4 8.4	8.4		5.0 5.2	5.1		5.9 5.6	5.8	
				Bottom	7	18.6 18.6	18.6	8.2 8.2	8.2	33.7 34.0	33.9	109.6 109.4	109.5	8.4 8.4	8.4	8.4	5.1 5.2	5.2		3.9 3.9	3.9	
6-Mar-15	Cloudy	Moderate	13:10	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	30.4 30.4	30.4	84.3 83.7	84.0	6.6 6.5	6.6	6.6	5.7 5.7	5.7	6.2	7.6 4.3	6.0	5.9
				Middle	4	18.6 18.6	18.6	8.1 8.1	8.1	30.9 30.9	30.9	83.1 83.2	83.2	6.5 6.5	6.5		5.2 4.9	5.1		6.7 7.2	7.0	
				Bottom	7	18.6 18.6	18.6	8.1 8.1	8.1	31.8 31.8	31.8	82.0 81.6	81.8	6.4 6.3	6.4	6.4	7.7 7.6	7.7		3.7 5.6	4.7	
9-Mar-15	Cloudy	Moderate	14:14	Surface	1	19.0 19.0	19.0	8.2 8.2	8.2	32.9 32.9	32.9	83.1 82.2	82.7	6.3 6.3	6.3	6.3	7.5 7.3	7.4	7.6	9.1 9.5	9.3	8.7
				Middle	4	18.8 18.8	18.8	8.2 8.2	8.2	33.5 33.5	33.5	82.6 83.0	82.8	6.3 6.3	6.3		7.5 7.5	7.5		7.9 7.2	7.6	
				Bottom	7	18.7 18.7	18.7	8.2 8.2	8.2	33.6 33.6	33.6	82.6 82.4	82.5	6.3 6.3	6.3	6.3	7.9 7.7	7.8		10.3 8.0	9.2	
11-Mar-15	Cloudy	Moderate	15:09	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	33.8 32.6	33.2	94.4 94.3	94.4	7.2 7.3	7.3	7.3	7.9 7.7	7.8	7.4	3.6 5.8	4.7	5.1
				Middle	4	18.7 18.7	18.7	8.2 8.2	8.2	34.0 34.0	34.0	94.0 94.0	94.0	7.2 7.2	7.2		5.7 5.4	5.6		4.7 6.5	5.6	
				Bottom	7	18.7 18.7	18.7	8.2 8.2	8.2	33.3 33.3	33.3	92.0 92.0	92.0	7.1 7.1	7.1	7.1	8.8 8.7	8.8		5.2 4.5	4.9	
13-Mar-15	Cloudy	Moderate	17:05	Surface	1	18.5 18.5	18.5	8.1 8.1	8.1	32.9 32.9	32.9	72.3 72.4	72.4	5.6 5.6	5.6	5.7	4.8 4.7	4.8	4.8	4.3 2.7	3.5	3.7
				Middle	4	18.5 18.5	18.5	8.1 8.1	8.1	33.0 32.9	33.0	72.5 75.4	74.0	5.6 5.8	5.7		4.1 4.5	4.3		4.0 2.6	3.3	
				Bottom	7	18.5 18.5	18.5	8.1 8.1	8.1	33.0 32.9	33.0	72.8 72.3	72.6	5.6 5.6	5.6	5.6	5.3 5.4	5.4		4.3 4.4	4.4	
17-Mar-15	Fine	Moderate	10:33	Surface	1	20.1 20.1	20.1	8.2 8.2	8.2	28.4 29.6	29.0	77.6 77.5	77.6	6.0 5.9	6.0	5.9	3.4 3.4	3.4	5.3	6.3 5.1	5.7	5.1
				Middle	4	19.4 19.4	19.4	8.2 8.2	8.2	31.3 30.3	30.8	75.8 75.2	75.5	5.8 5.8	5.8		5.7 5.8	5.8		3.9 4.6	4.3	
				Bottom	7	19.1 19.2	19.2	8.2 8.2	8.2	31.8 31.8	31.8	74.4 74.2	74.3	5.7 5.7	5.7	5.7	6.6 6.8	6.7		5.8 5.0	5.4	
19-Mar-15	Fine	Moderate	11:41	Surface	1	20.0 19.9	20.0	8.1 8.1	8.1	32.5 32.6	32.6	98.9 102.3	100.6	7.4 7.7	7.6	7.7	7.3 8.5	7.9	11.0	9.3 7.7	8.5	11.7
				Middle	4	19.6 19.6	19.6	8.1 8.1	8.1	33.3 33.3	33.3	104.1 101.7	102.9	7.8 7.7	7.8		11.0 10.1	10.6		11.8 12.6	12.2	
				Bottom	7	19.4 19.4	19.4	8.1 8.1	8.1	33.8 33.9	33.9	103.2 103.0	103.1	7.8 7.8	7.8	7.8	14.4 14.4	14.4		14.4 14.4	14.4	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at 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-Mar-15	Fine	Moderate	12:36	Surface	1	20.2 19.9	20.1	8.2 8.2	8.2	30.2 31.6	30.9	84.4 87.2	85.8	6.4 6.6	6.5	6.3	9.9 9.9	9.9	10.3	11.5 17.0	14.3	17.7
				Middle	4	19.8 19.7	19.8	8.2 8.2	8.2	31.5 32.6	32.1	76.9 83.3	80.1	5.8 6.3	6.1		10.3 11.2	10.8		26.7 14.7	20.7	
				Bottom	7	20.1 20.1	20.1	8.2 8.2	8.2	30.6 30.6	30.6	79.7 79.7	79.7	6.0 6.0	6.0	6.0	10.1 10.1	10.1		22.5 13.4	18.0	
23-Mar-15	Cloudy	Moderate	14:53	Surface	1	20.2 20.1	20.2	8.2 8.2	8.2	32.2 31.0	31.6	87.9 91.5	89.7	6.6 6.9	6.8	6.9	5.1 5.3	5.2	6.0	7.1 7.2	7.2	8.5
				Middle	3.5	20.1 20.1	20.1	8.2 8.2	8.2	32.8 31.7	32.3	94.3 89.4	91.9	7.1 6.7	6.9		5.0 5.8	5.4		7.9 7.6	7.8	
				Bottom	6	20.1 20.1	20.1	8.2 8.2	8.2	33.3 33.1	33.2	92.0 87.9	90.0	6.9 6.6	6.8	6.8	7.6 6.9	7.3		5.7 15.3	10.5	
25-Mar-15	Cloudy	Moderate	15:22	Surface	1	20.3 20.3	20.3	8.1 8.1	8.1	33.5 33.5	33.5	87.7 87.3	87.5	6.5 6.5	6.5	6.5	4.5 5.4	5.0	6.3	8.4 6.0	7.2	7.6
				Middle	3.5	20.3 20.3	20.3	8.1 8.1	8.1	33.7 33.7	33.7	88.0 87.4	87.7	6.5 6.5	6.5		6.3 6.1	6.2		12.3 6.1	9.2	
				Bottom	6	20.3 20.3	20.3	8.1 8.1	8.1	34.0 33.9	34.0	88.1 87.4	87.8	6.5 6.5	6.5	6.5	7.6 7.7	7.7		5.8 6.8	6.3	
27-Mar-15	Cloudy	Moderate	17:16	Surface	1	20.4 20.4	20.4	8.1 8.1	8.1	33.5 33.4	33.5	97.2 98.0	97.6	7.2 7.3	7.3	7.3	9.7 9.8	9.8	10.4	2.7 4.1	3.4	4.4
				Middle	3.5	20.2 20.2	20.2	8.1 8.1	8.1	33.7 33.7	33.7	99.7 95.3	97.5	7.4 7.1	7.3		11.1 10.8	11.0		1.9 1.7	1.8	
				Bottom	6	20.2 20.2	20.2	8.1 8.1	8.1	33.9 33.9	33.9	100.5 103.1	101.8	7.5 7.7	7.6	7.6	10.3 10.4	10.4		8.5 7.6	8.1	
31-Mar-15	Cloudy	Moderate	10:44	Surface	1	22.6 22.6	22.6	8.3 8.3	8.3	29.1 29.4	29.3	94.1 100.0	97.1	6.9 7.3	7.1	7.0	3.8 3.8	3.8	5.8	4.7 5.4	5.1	5.0
				Middle	4	20.9 20.9	20.9	8.1 8.1	8.1	32.7 32.7	32.7	95.3 88.7	92.0	7.0 6.5	6.8		7.5 7.3	7.4		6.2 5.4	5.8	
				Bottom	7	20.8 20.8	20.8	8.1 8.1	8.1	33.6 33.6	33.6	77.8 76.7	77.3	5.7 5.6	5.7	5.7	6.4 6.1	6.3		3.8 4.5	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 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*
2-Mar-15	Fine	Moderate	15:45	Surface	1	19.0 19.0	19.0	8.2 8.2	8.2	33.0 33.0	33.0	83.4 83.8	83.6	6.4 6.4	6.4	6.4	4.7 4.9	4.8	6.0	4.3 4.2	4.3	3.9
				Middle	4	18.7 18.7	18.7	8.2 8.2	8.2	33.1 33.1	33.1	81.3 81.8	81.6	6.2 6.3	6.3		6.0 5.9	6.0		4.7 5.2	5.0	
				Bottom	7	18.7 18.7	18.7	8.2 8.2	8.2	33.1 33.1	33.1	79.6 79.5	79.6	6.1 6.1	6.1	6.1	6.7 7.5	7.1		2.4 2.2	2.3	
4-Mar-15	Fine	Moderate	17:20	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	32.6 32.6	32.6	108.8 109.1	109.0	8.4 8.4	8.4	8.4	3.3 3.2	3.3	3.5	5.2 3.4	4.3	3.9
				Middle	4	18.8 18.8	18.8	8.2 8.2	8.2	32.7 32.7	32.7	108.5 108.6	108.6	8.3 8.3	8.3		3.4 3.5	3.5		3.0 3.5	3.3	
				Bottom	7	18.8 18.7	18.8	8.2 8.2	8.2	33.1 33.1	33.1	107.9 107.7	107.8	8.3 8.3	8.3	8.3	3.6 3.6	3.6		2.2 5.8	4.0	
6-Mar-15	Cloudy	Moderate	18:43	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	30.3 30.3	30.3	79.7 78.4	79.1	6.2 6.1	6.2	6.2	6.8 7.1	7.0	7.3	6.3 4.8	5.6	5.5
				Middle	4	18.7 18.7	18.7	8.1 8.1	8.1	30.9 31.0	31.0	78.0 78.3	78.2	6.1 6.1	6.1		7.9 6.9	7.4		5.2 8.0	6.6	
				Bottom	7	18.7 18.7	18.7	8.1 8.1	8.1	32.0 31.7	31.9	78.4 78.4	78.4	6.1 6.1	6.1	6.1	7.8 7.2	7.5		3.1 5.4	4.3	
9-Mar-15	Cloudy	Moderate	08:45	Surface	1	18.9 18.9	18.9	8.1 8.1	8.1	30.7 30.8	30.8	78.7 78.1	78.4	6.1 6.1	6.1	6.1	7.6 7.5	7.6	11.3	10.0 8.9	9.5	8.9
				Middle	4	18.8 18.8	18.8	8.1 8.1	8.1	31.2 31.2	31.2	76.9 76.1	76.5	6.0 5.9	6.0		10.2 10.0	10.1		7.2 6.4	6.8	
				Bottom	7	18.8 18.8	18.8	8.1 8.1	8.1	31.3 31.3	31.3	75.1 74.6	74.9	5.8 5.8	5.8	5.8	16.5 16.0	16.3		10.1 10.8	10.5	
11-Mar-15	Cloudy	Moderate	10:13	Surface	1	18.6 18.6	18.6	8.1 8.1	8.1	33.2 33.1	33.2	97.4 97.3	97.4	7.5 7.5	7.5	7.5	4.3 4.1	4.2	6.1	6.4 6.0	6.2	6.1
				Middle	4	18.6 18.6	18.6	8.1 8.1	8.1	33.3 33.3	33.3	97.1 97.0	97.1	7.4 7.4	7.4		3.9 3.9	3.9		5.2 6.7	6.0	
				Bottom	7	18.6 18.6	18.6	8.1 8.1	8.1	33.5 33.5	33.5	96.9 97.1	97.0	7.4 7.4	7.4	7.4	10.5 10.1	10.3		6.0 6.0	6.0	
13-Mar-15	Cloudy	Moderate	10:39	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	32.7 32.7	32.7	79.6 78.8	79.2	6.1 6.1	6.1	6.1	3.7 3.9	3.8	5.3	4.3 5.2	4.8	3.3
				Middle	4	18.6 18.6	18.6	8.2 8.2	8.2	32.8 32.7	32.8	79.5 79.5	79.5	6.1 6.1	6.1		4.1 3.7	3.9		4.0 2.7	3.4	
				Bottom	7	18.5 18.5	18.5	8.2 8.2	8.2	32.9 33.0	33.0	79.4 78.2	78.8	6.1 6.0	6.1	6.1	7.4 8.7	8.1		2.8 0.6	1.7	
17-Mar-15	Fine	Moderate	15:28	Surface	1	20.5 20.5	20.5	8.2 8.2	8.2	30.8 31.2	31.0	83.9 79.3	81.6	6.3 5.9	6.1	6.1	3.3 3.3	3.3	4.8	4.5 5.2	4.9	10.5
				Middle	4	19.9 19.8	19.9	8.2 8.2	8.2	31.6 31.9	31.8	78.2 83.2	80.7	5.9 6.3	6.1		3.4 3.4	3.4		5.4 6.2	5.8	
				Bottom	7	19.3 19.3	19.3	8.2 8.2	8.2	33.3 33.2	33.3	78.4 77.5	78.0	5.9 5.9	5.9	5.9	7.6 7.9	7.8		21.1 20.4	20.8	
19-Mar-15	Fine	Moderate	17:55	Surface	1	21.5 21.6	21.6	8.0 8.0	8.0	28.5 28.3	28.4	100.9 100.2	100.6	7.5 7.5	7.5	7.6	5.9 6.0	6.0	8.0	7.0 7.2	7.1	8.4
				Middle	4	20.6 20.6	20.6	8.0 8.0	8.0	30.0 29.9	30.0	100.2 100.1	100.2	7.6 7.6	7.6		8.4 7.1	7.8		6.6 6.6	6.6	
				Bottom	7	20.1 20.2	20.2	8.1 8.1	8.1	31.6 31.3	31.5	102.1 100.9	101.5	7.7 7.6	7.7	7.7	10.3 9.9	10.1		12.9 10.1	11.5	

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-Mar-15	Fine	Moderate	19:10	Surface	1	21.2 21.2	21.2	8.0 8.0	8.0	22.0 25.1	23.6	71.2 67.2	69.2	5.6 5.2	5.4	5.5	14.4 14.1	14.3	18.4	47.7 35.3	41.5	41.4
				Middle	4	21.2 21.2	21.2	8.0 8.0	8.0	24.5 23.2	23.9	71.1 70.4	70.8	5.5 5.5	5.5		17.1 17.9	17.5		43.0 37.3	40.2	
				Bottom	7	21.2 21.2	21.2	8.0 8.0	8.0	25.0 25.2	25.1	70.8 68.6	69.7	5.4 5.3	5.4	5.4	24.0 23.0	23.5		43.7 41.3	42.5	
23-Mar-15	Cloudy	Moderate	08:53	Surface	1	20.1 20.1	20.1	8.1 8.1	8.1	30.8 30.7	30.8	93.7 93.2	93.5	7.1 7.1	7.1	7.0	4.8 5.0	4.9	6.0	17.4 12.4	14.9	14.3
				Middle	3.5	20.1 20.1	20.1	8.1 8.1	8.1	30.8 30.9	30.9	92.2 89.6	90.9	7.0 6.8	6.9		5.4 6.1	5.8		17.6 11.6	14.6	
				Bottom	6	20.1 20.1	20.1	8.1 8.1	8.1	31.0 29.5	30.3	93.7 86.3	90.0	7.1 6.6	6.9	6.9	8.1 6.7	7.4		10.2 16.4	13.3	
25-Mar-15	Cloudy	Moderate	09:23	Surface	1	20.6 20.6	20.6	8.0 8.0	8.0	30.0 29.9	30.0	89.0 89.2	89.1	6.7 6.7	6.7	6.7	4.7 4.6	4.7	5.8	4.7 3.8	4.3	4.2
				Middle	3.5	20.7 20.7	20.7	8.0 8.0	8.0	31.3 31.3	31.3	89.8 89.3	89.6	6.7 6.7	6.7		5.3 5.7	5.5		5.1 5.5	5.3	
				Bottom	6	20.6 20.6	20.6	8.1 8.1	8.1	32.2 32.1	32.2	90.6 90.1	90.4	6.7 6.7	6.7	6.7	7.6 7.0	7.3		2.9 2.8	2.9	
27-Mar-15	Cloudy	Moderate	10:17	Surface	1	20.4 20.4	20.4	8.0 8.0	8.0	29.5 29.4	29.5	93.4 98.3	95.9	7.1 7.5	7.3	7.3	8.8 8.9	8.9	9.6	3.3 3.3	3.3	4.5
				Middle	3.5	20.4 20.4	20.4	8.1 8.1	8.1	31.2 30.8	31.0	96.2 98.4	97.3	7.2 7.4	7.3		9.3 9.8	9.6		6.8 4.3	5.6	
				Bottom	6	20.3 20.3	20.3	8.1 8.1	8.1	32.9 32.9	32.9	98.5 98.5	98.5	7.3 7.3	7.3	7.3	10.5 10.1	10.3		4.0 5.2	4.6	
31-Mar-15	Cloudy	Moderate	15:33	Surface	1	22.4 22.4	22.4	8.2 8.2	8.2	26.6 26.6	26.6	94.5 98.0	96.3	7.0 7.3	7.2	7.1	2.5 2.1	2.3	3.3	8.6 4.6	6.6	6.6
				Middle	4	21.6 21.4	21.5	8.1 8.1	8.1	29.5 29.8	29.7	97.2 91.3	94.3	7.2 6.8	7.0		3.3 3.2	3.3		6.6 5.8	6.2	
				Bottom	7	21.1 21.0	21.1	8.1 8.1	8.1	32.4 32.5	32.5	87.5 84.3	85.9	6.5 6.2	6.4	6.4	4.0 4.6	4.3		5.6 8.2	6.9	

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

Water Quality Monitoring Results at 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*
2-Mar-15	Fine	Moderate	11:33	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	29.8 29.8	29.8	92.3 92.3	92.3	7.2 7.2	7.2	7.1	1.8 1.6	1.7	3.5	2.6 2.8	2.7	2.6
				Middle	6.5	18.2 18.2	18.2	8.2 8.2	8.2	33.3 33.2	33.3	89.8 90.4	90.1	6.9 7.0	7.0		2.6 2.6	2.6		2.2 2.4	2.3	
				Bottom	12	18.2 18.2	18.2	8.2 8.2	8.2	33.8 33.8	33.8	87.7 87.2	87.5	6.8 6.7	6.8	6.8	6.2 6.3	6.3		2.1 3.7	2.9	
4-Mar-15	Fine	Moderate	12:57	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	31.6 31.6	31.6	80.0 80.8	80.4	6.2 6.2	6.2	6.3	6.8 6.9	6.9	6.5	38.3 33.0	35.7	19.6
				Middle	6	18.8 18.8	18.8	8.1 8.1	8.1	31.6 31.6	31.6	82.2 81.8	82.0	6.4 6.3	6.4		6.8 7.0	6.9		5.0 12.8	8.9	
				Bottom	11	18.9 18.9	18.9	8.1 8.1	8.1	31.7 31.8	31.8	77.7 77.5	77.6	6.0 6.0	6.0	6.0	5.8 5.7	5.8		13.5 14.7	14.1	
6-Mar-15	Cloudy	Moderate	13:27	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	33.0 33.0	33.0	75.7 75.4	75.6	5.8 5.8	5.8	5.9	4.9 5.0	5.0	5.9	3.7 3.3	3.5	4.3
				Middle	6	18.6 18.6	18.6	8.2 8.2	8.2	33.2 33.2	33.2	76.6 76.6	76.6	5.9 5.9	5.9		7.6 7.4	7.5		3.3 4.9	4.1	
				Bottom	11	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.8	32.9	76.0 76.0	76.0	5.8 5.8	5.8	5.8	5.3 5.1	5.2		4.2 6.4	5.3	
9-Mar-15	Cloudy	Moderate	13:44	Surface	1	18.8 18.8	18.8	8.1 8.1	8.1	30.2 30.2	30.2	87.7 87.2	87.5	6.8 6.8	6.8	6.7	3.7 3.7	3.7	5.0	3.8 3.2	3.5	2.7
				Middle	6	18.5 18.5	18.5	8.1 8.1	8.1	32.1 32.1	32.1	85.6 85.2	85.4	6.6 6.6	6.6		5.3 5.5	5.4		2.0 2.1	2.1	
				Bottom	11	18.4 18.4	18.4	8.2 8.2	8.2	33.2 33.2	33.2	84.0 84.0	84.0	6.5 6.5	6.5	6.5	5.7 5.9	5.8		2.2 2.5	2.4	
11-Mar-15	Cloudy	Moderate	15:53	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	33.1 33.1	33.1	93.7 93.6	93.7	7.2 7.2	7.2	7.2	6.1 6.5	6.3	9.0	6.5 6.2	6.4	6.7
				Middle	6	18.8 18.8	18.8	8.2 8.2	8.2	33.1 33.1	33.1	94.0 93.3	93.7	7.2 7.1	7.2		6.4 6.5	6.5		7.9 6.2	7.1	
				Bottom	11	18.8 18.8	18.8	8.2 8.2	8.2	33.2 33.2	33.2	93.6 93.2	93.4	7.2 7.1	7.2	7.2	14.3 14.2	14.3		4.7 8.2	6.5	
13-Mar-15	Cloudy	Moderate	16:32	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	33.7 33.7	33.7	112.3 111.1	111.7	8.6 8.5	8.6	8.4	1.8 1.8	1.8	2.8	2.6 2.9	2.8	3.4
				Middle	6	18.5 18.5	18.5	8.2 8.2	8.2	33.4 33.4	33.4	106.5 105.8	106.2	8.2 8.1	8.2		2.7 2.7	2.7		2.9 2.6	2.8	
				Bottom	11	18.4 18.4	18.4	8.2 8.2	8.2	31.0 31.1	31.1	98.2 98.2	98.2	7.7 7.7	7.7	7.7	3.9 3.9	3.9		3.9 5.2	4.6	
17-Mar-15	Fine	Moderate	11:06	Surface	1	19.2 19.2	19.2	8.2 8.2	8.2	31.9 31.8	31.9	79.7 77.6	78.7	6.1 5.9	6.0	6.1	5.3 4.9	5.1	5.7	5.2 5.0	5.1	5.5
				Middle	6	18.8 18.8	18.8	8.2 8.2	8.2	32.1 32.1	32.1	79.7 77.9	78.8	6.1 6.0	6.1		4.3 4.7	4.5		3.2 6.9	5.1	
				Bottom	11	18.7 18.8	18.8	8.2 8.2	8.2	32.2 32.2	32.2	78.3 77.3	77.8	6.0 6.0	6.0	6.0	7.6 7.5	7.6		6.4 6.1	6.3	
19-Mar-15	Fine	Moderate	13:04	Surface	1	20.6 20.6	20.6	8.2 8.2	8.2	28.6 28.6	28.6	76.6 88.0	82.3	5.8 6.7	6.3	6.3	4.5 4.5	4.5	4.5	4.3 5.6	5.0	4.8
				Middle	6	20.5 20.5	20.5	8.2 8.2	8.2	28.7 28.9	28.8	82.5 82.8	82.7	6.3 6.3	6.3		4.3 4.3	4.3		5.6 5.2	5.4	
				Bottom	11	20.3 20.2	20.3	8.2 8.2	8.2	29.1 29.3	29.2	85.0 84.3	84.7	6.5 6.4	6.5	6.5	4.7 4.6	4.7		3.7 4.5	4.1	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at 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-Mar-15	Fine	Moderate	13:21	Surface	1	20.2 20.3	20.3	8.2 8.2	8.2	31.9 32.7	32.3	84.8 83.7	84.3	6.7 6.6	6.7	6.7	5.6 5.9	5.8	5.2	4.6 6.1	5.4	6.1
				Middle	6	20.2 20.3	20.3	8.2 8.2	8.2	31.9 32.8	32.4	82.3 82.5	82.4	6.5 6.6	6.6		5.3 4.6	5.0		7.1 5.3	6.2	
				Bottom	11	20.2 20.2	20.2	8.2 8.2	8.2	31.9 32.9	32.4	82.4 83.7	83.1	6.5 6.6	6.6	6.6	5.2 4.5	4.9		9.2 4.2	6.7	
23-Mar-15	Cloudy	Moderate	14:44	Surface	1	20.8 20.7	20.8	8.1 8.1	8.1	31.9 32.0	32.0	96.0 95.8	95.9	7.1 7.1	7.1	7.2	3.0 3.0	3.0	5.0	3.9 3.3	3.6	3.4
				Middle	6	20.3 20.5	20.4	8.1 8.1	8.1	32.5 32.5	32.5	96.5 95.8	96.2	7.2 7.1	7.2		3.3 4.0	3.7		2.4 4.2	3.3	
				Bottom	11	20.3 20.3	20.3	8.1 8.1	8.1	32.6 32.8	32.7	95.6 95.4	95.5	7.1 7.1	7.1	7.1	8.1 8.3	8.2		2.5 4.1	3.3	
25-Mar-15	Cloudy	Moderate	15:18	Surface	1	20.1 20.1	20.1	8.2 8.2	8.2	27.5 29.3	28.4	88.6 90.1	89.4	6.8 6.9	6.9	6.9	6.9 6.7	6.8	8.6	3.1 3.2	3.2	4.6
				Middle	7	20.1 20.1	20.1	8.2 8.2	8.2	30.7 30.6	30.7	90.4 90.8	90.6	6.9 6.9	6.9		8.1 8.0	8.1		2.0 6.1	4.1	
				Bottom	13	20.1 20.1	20.1	8.2 8.2	8.2	30.5 30.7	30.6	90.3 90.9	90.6	6.9 6.9	6.9	6.9	10.2 11.3	10.8		6.5 6.6	6.6	
27-Mar-15	Cloudy	Moderate	18:03	Surface	1	20.3 20.4	20.4	8.1 8.1	8.1	33.0 32.8	32.9	98.7 99.1	98.9	7.3 7.4	7.4	7.4	8.6 8.2	8.4	8.5	1.9 1.7	1.8	1.4
				Middle	6	20.1 20.1	20.1	8.1 8.1	8.1	32.5 30.9	31.7	98.0 97.5	97.8	7.4 7.4	7.4		8.3 8.5	8.4		0.8 0.7	0.8	
				Bottom	11	20.0 20.0	20.0	8.1 8.1	8.1	33.0 30.8	31.9	98.3 97.5	97.9	7.4 7.4	7.4	7.4	7.9 9.5	8.7		1.0 2.1	1.6	
31-Mar-15	Cloudy	Moderate	11:40	Surface	1	22.6 22.0	22.3	8.3 8.3	8.3	30.7 30.2	30.5	105.2 103.5	104.4	7.6 7.6	7.6	7.6	1.7 1.9	1.8	2.3	9.2 10.6	9.9	8.8
				Middle	6	22.6 22.7	22.7	8.2 8.2	8.2	30.2 30.1	30.2	103.1 103.5	103.3	7.5 7.5	7.5		2.5 2.7	2.6		8.4 8.4	8.4	
				Bottom	11	22.5 22.5	22.5	8.2 8.2	8.2	30.5 30.6	30.6	98.0 98.6	98.3	7.1 7.2	7.2	7.2	2.6 2.6	2.6		8.4 7.8	8.1	

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

Water Quality Monitoring Results at 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*
2-Mar-15	Fine	Moderate	16:24	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	31.6 31.6	31.6	92.1 91.3	91.7	7.1 7.1	7.1	7.0	3.7 3.4	3.6	3.4	3.1 3.5	3.3	3.3
				Middle	6	18.3 18.3	18.3	8.2 8.2	8.2	32.7 32.7	32.7	88.7 89.2	89.0	6.9 6.9	6.9		2.6 2.8	2.7		3.8 2.5	3.2	
				Bottom	11	18.2 18.2	18.2	8.2 8.2	8.2	32.9 33.0	33.0	86.9 86.4	86.7	6.7 6.7	6.7	6.7	3.6 4.2	3.9		3.7 2.9	3.3	
4-Mar-15	Fine	Moderate	17:01	Surface	1	18.7 18.7	18.7	8.1 8.1	8.1	31.8 31.7	31.8	103.2 104.6	103.9	8.0 8.1	8.1	8.2	4.1 4.0	4.1	4.0	9.2 7.6	8.4	8.6
				Middle	6	18.6 18.6	18.6	8.1 8.1	8.1	32.5 32.5	32.5	108.1 107.5	107.8	8.3 8.3	8.3		3.6 3.4	3.5		4.8 9.5	7.2	
				Bottom	11	18.4 18.4	18.4	8.1 8.1	8.1	33.4 33.4	33.4	105.6 105.3	105.5	8.1 8.1	8.1	8.1	4.5 4.4	4.5		8.7 11.4	10.1	
6-Mar-15	Cloudy	Moderate	18:11	Surface	1	18.7 18.7	18.7	8.2 8.2	8.2	33.0 33.0	33.0	82.3 82.9	82.6	6.3 6.4	6.4	6.4	4.6 4.5	4.6	5.4	4.1 4.4	4.3	4.0
				Middle	6	18.7 18.7	18.7	8.2 8.2	8.2	33.1 33.1	33.1	82.2 82.2	82.2	6.3 6.3	6.3		5.4 6.5	6.0		4.2 3.5	3.9	
				Bottom	11	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	81.7 81.7	81.7	6.3 6.3	6.3	6.3	5.5 5.4	5.5		2.9 4.6	3.8	
9-Mar-15	Cloudy	Moderate	08:59	Surface	1	18.4 18.4	18.4	8.1 8.1	8.1	30.6 30.6	30.6	72.9 73.3	73.1	5.7 5.7	5.7	5.7	5.2 5.2	5.2	8.3	3.6 2.8	3.2	4.5
				Middle	6	18.4 18.4	18.4	8.2 8.2	8.2	31.1 31.2	31.2	72.9 72.5	72.7	5.7 5.7	5.7		6.3 6.4	6.4		6.2 4.1	5.2	
				Bottom	11	18.4 18.4	18.4	8.2 8.2	8.2	32.5 32.6	32.6	71.6 71.5	71.6	5.5 5.5	5.5	5.5	11.9 14.7	13.3		5.3 4.8	5.1	
11-Mar-15	Cloudy	Moderate	10:58	Surface	1	18.8 18.8	18.8	8.2 8.2	8.2	33.3 33.3	33.3	93.0 92.6	92.8	7.1 7.1	7.1	7.1	8.7 10.0	9.4	12.6	9.7 11.5	10.6	7.5
				Middle	6	18.8 18.8	18.8	8.2 8.2	8.2	33.3 33.3	33.3	93.3 92.5	92.9	7.1 7.1	7.1		14.7 15.8	15.3		6.8 6.0	6.4	
				Bottom	11	18.8 18.8	18.8	8.2 8.2	8.2	33.3 33.3	33.3	92.7 92.2	92.5	7.1 7.1	7.1	7.1	12.4 13.9	13.2		5.2 5.9	5.6	
13-Mar-15	Cloudy	Moderate	10:25	Surface	1	18.6 18.6	18.6	8.2 8.2	8.2	33.1 33.2	33.2	73.1 73.2	73.2	5.6 5.6	5.6	5.6	3.2 3.0	3.1	2.6	0.9 2.9	1.9	1.7
				Middle	6	18.6 18.6	18.6	8.2 8.2	8.2	32.8 32.7	32.8	73.3 73.2	73.3	5.6 5.6	5.6		2.3 2.3	2.3		0.7 2.3	1.5	
				Bottom	11	18.6 18.6	18.6	8.2 8.2	8.2	33.3 33.3	33.3	73.0 73.0	73.0	5.6 5.6	5.6	5.6	2.7 2.3	2.5		1.3 1.8	1.6	
17-Mar-15	Fine	Moderate	17:11	Surface	1	19.4 19.5	19.5	8.2 8.2	8.2	31.8 31.8	31.8	75.9 74.4	75.2	5.8 5.7	5.8	5.8	4.1 4.6	4.4	6.5	4.7 7.5	6.1	7.0
				Middle	6	18.9 18.9	18.9	8.2 8.2	8.2	32.0 32.0	32.0	76.2 74.4	75.3	5.9 5.7	5.8		4.2 4.2	4.2		7.8 9.0	8.4	
				Bottom	11	18.7 18.7	18.7	8.2 8.2	8.2	32.4 32.4	32.4	74.4 73.4	73.9	5.7 5.7	5.7	5.7	10.5 11.0	10.8		9.1 3.6	6.4	
19-Mar-15	Fine	Moderate	17:32	Surface	1	20.6 20.6	20.6	8.2 8.2	8.2	28.9 28.8	28.9	92.6 92.5	92.6	7.0 7.0	7.0	7.2	4.4 4.3	4.4	4.4	3.2 3.4	3.3	4.2
				Middle	6	20.4 20.4	20.4	8.2 8.2	8.2	28.9 29.0	29.0	95.8 95.8	95.8	7.3 7.3	7.3		4.3 4.3	4.3		5.1 5.4	5.3	
				Bottom	11	20.1 20.1	20.1	8.2 8.2	8.2	29.4 29.4	29.4	91.1 91.0	91.1	7.0 7.0	7.0	7.0	4.5 4.5	4.5		3.7 4.1	3.9	

Remarks: *DA: Depth-Averaged

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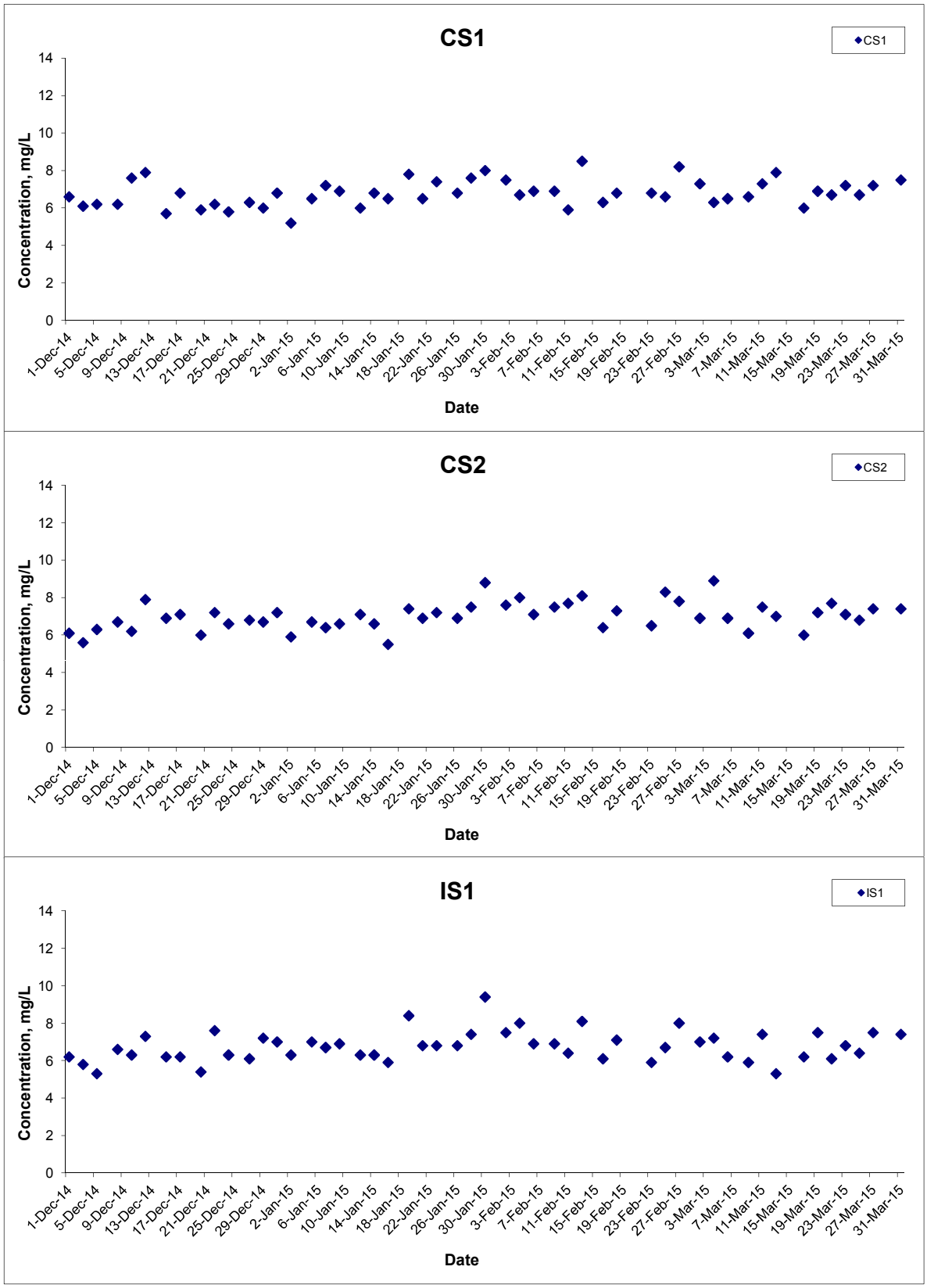
Water Quality Monitoring Results at ST3 - Mid-Flood Tide

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-Mar-15	Fine	Moderate	19:09	Surface	1	20.3 20.3	20.3	8.0 8.0	8.0	32.9 32.8	32.9	80.7 81.3	81.0	6.4 6.4	6.4	6.4	6.9 7.9	7.4	6.6	22.0 12.0	17.0	13.7
				Middle	6	20.3 20.3	20.3	8.0 8.0	8.0	32.9 32.7	32.8	80.4 80.7	80.6	6.3 6.4	6.4		5.8 6.8	6.3		12.5 11.3	11.9	
				Bottom	11	20.3 20.3	20.3	8.0 8.0	8.0	32.7 32.9	32.8	81.1 78.6	79.9	6.4 6.2	6.3	6.3	5.8 6.5	6.2		13.0 11.2	12.1	
23-Mar-15	Cloudy	Moderate	09:29	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	31.8 31.8	31.8	88.7 88.2	88.5	6.7 6.6	6.7	6.7	8.0 9.6	8.8	11.0	23.0 25.2	24.1	14.7
				Middle	6	20.2 20.2	20.2	8.1 8.1	8.1	31.8 31.8	31.8	89.1 87.9	88.5	6.7 6.6	6.7		10.6 10.9	10.8		6.6 10.0	8.3	
				Bottom	11	20.2 20.2	20.2	8.1 8.1	8.1	31.8 31.8	31.8	88.3 87.8	88.1	6.6 6.6	6.6	6.6	13.2 13.8	13.5		9.2 14.0	11.6	
25-Mar-15	Cloudy	Moderate	10:26	Surface	1	20.2 20.2	20.2	8.2 8.2	8.2	26.9 31.9	29.4	93.8 97.4	95.6	7.3 7.3	7.3	7.4	7.5 8.0	7.8	11.9	3.6 2.7	3.2	2.6
				Middle	7	20.2 20.2	20.2	8.2 8.2	8.2	32.2 32.3	32.3	100.3 96.2	98.3	7.5 7.2	7.4		10.8 10.7	10.8		1.5 2.4	2.0	
				Bottom	13	20.2 20.2	20.2	8.2 8.2	8.2	33.7 34.3	34.0	97.7 101.7	99.7	7.3 7.5	7.4	7.4	16.3 18.1	17.2		1.6 3.3	2.5	
27-Mar-15	Cloudy	Moderate	10:42	Surface	1	20.2 20.2	20.2	8.1 8.1	8.1	33.8 33.8	33.8	103.6 105.0	104.3	7.7 7.8	7.8	7.8	8.0 9.4	8.7	10.9	3.4 3.5	3.5	3.0
				Middle	6	20.1 20.1	20.1	8.2 8.2	8.2	33.9 34.1	34.0	102.2 103.2	102.7	7.6 7.7	7.7		10.5 11.0	10.8		2.2 3.0	2.6	
				Bottom	11	20.1 20.1	20.1	8.2 8.2	8.2	33.8 34.2	34.0	99.9 105.9	102.9	7.4 7.9	7.7	7.7	13.1 13.2	13.2		3.9 2.1	3.0	
31-Mar-15	Cloudy	Moderate	16:10	Surface	1	22.1 21.9	22.0	8.3 8.3	8.3	30.3 30.7	30.5	102.4 101.6	102.0	7.5 7.4	7.5	7.6	1.9 2.0	2.0	2.5	8.2 6.4	7.3	6.3
				Middle	6	20.7 20.7	20.7	8.2 8.2	8.2	31.1 32.0	31.6	100.2 103.0	101.6	7.5 7.7	7.6		3.3 3.3	3.3		5.8 5.2	5.5	
				Bottom	11	20.6 20.5	20.6	8.2 8.2	8.2	31.9 31.8	31.9	92.8 95.8	94.3	6.9 7.2	7.1	7.1	2.2 2.4	2.3		7.4 4.7	6.1	

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



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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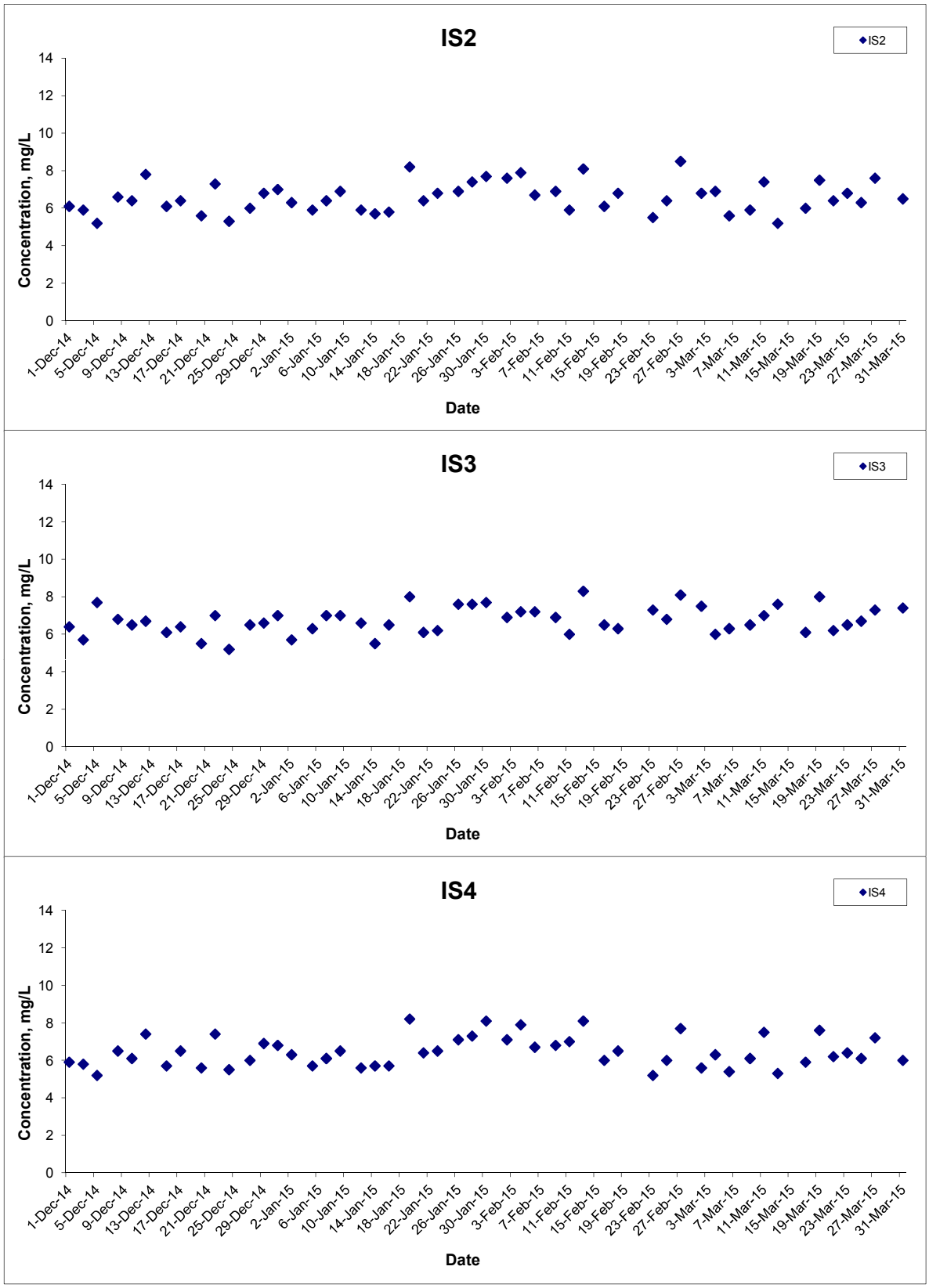
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
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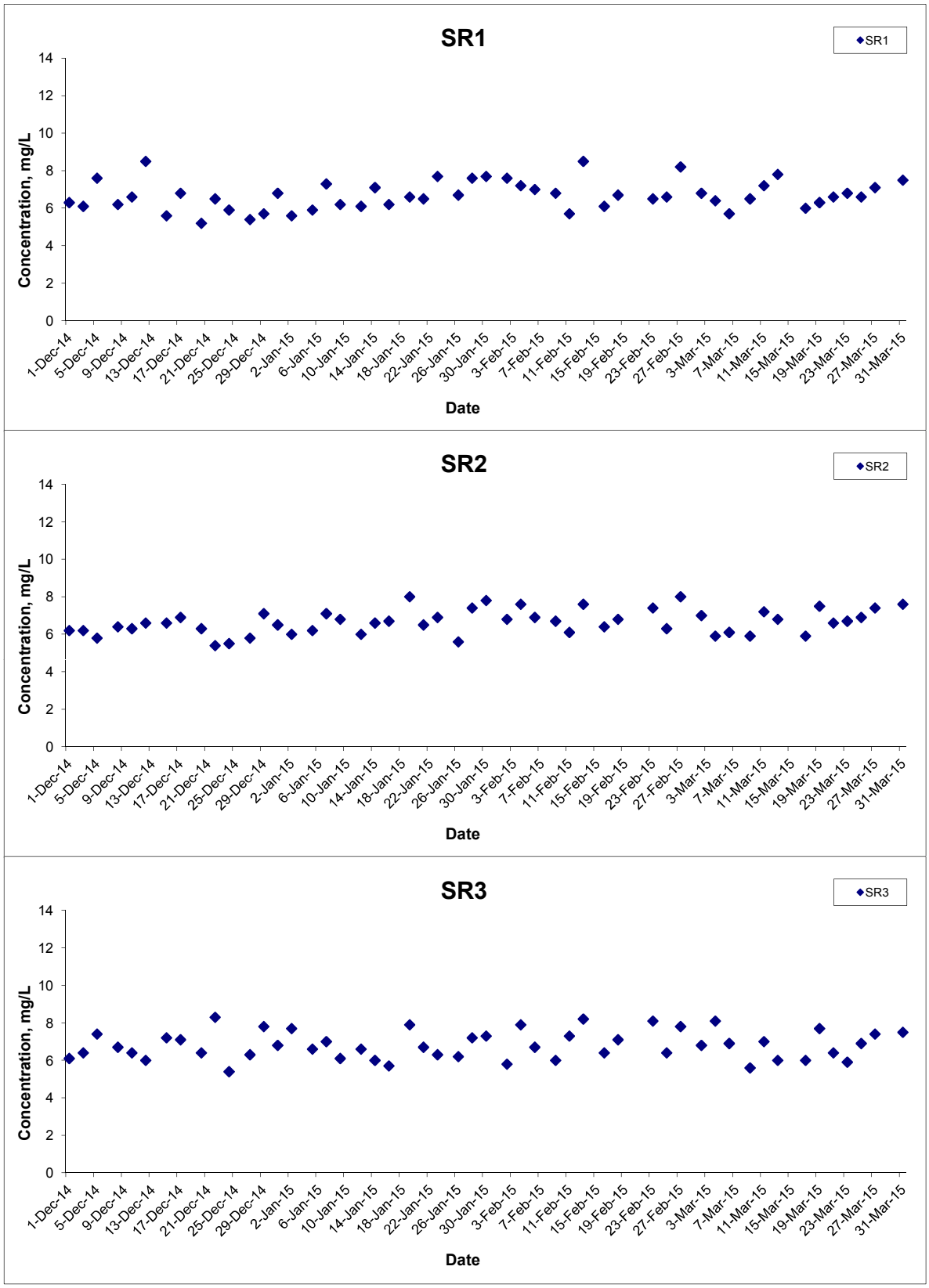
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



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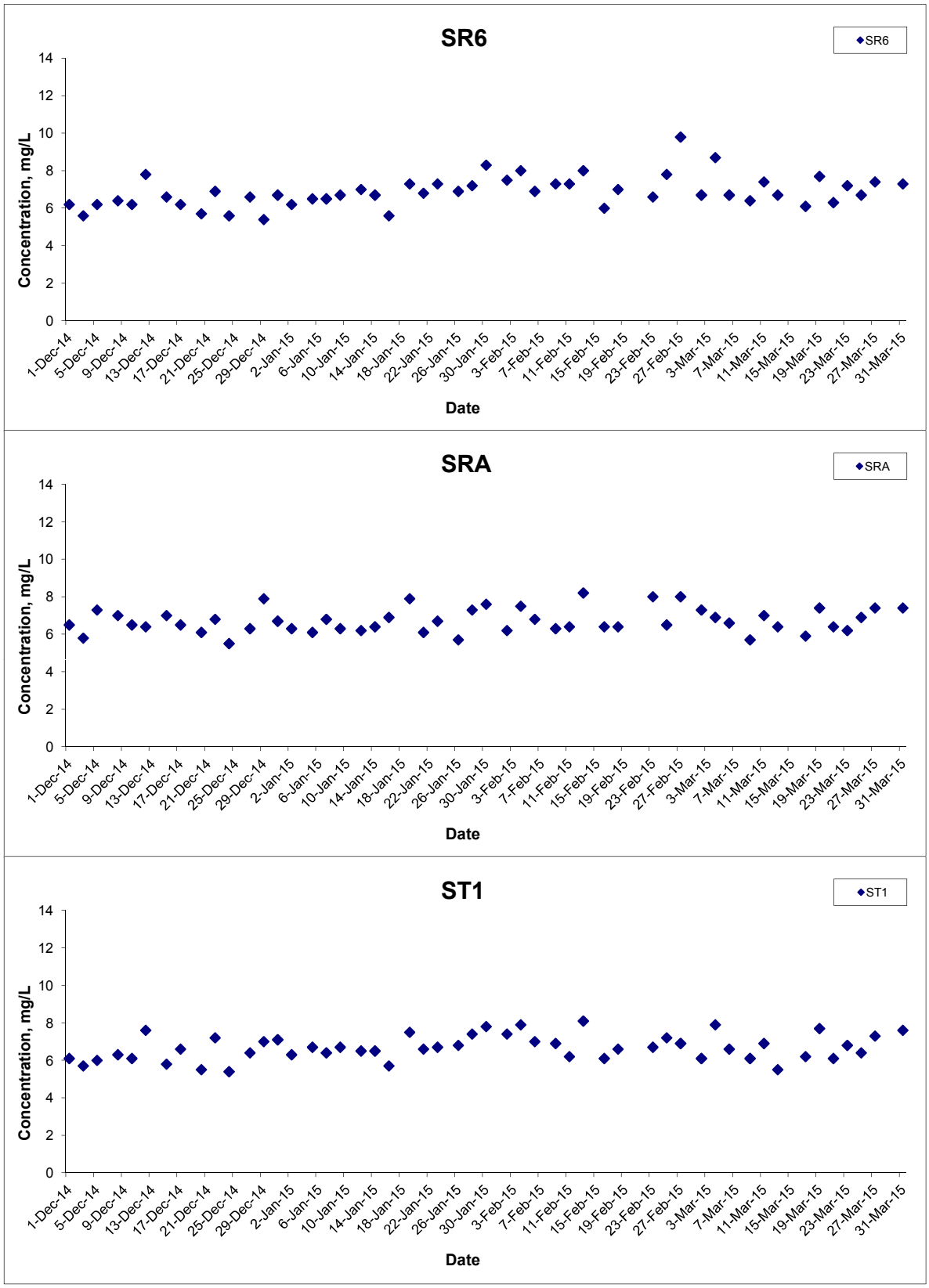
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



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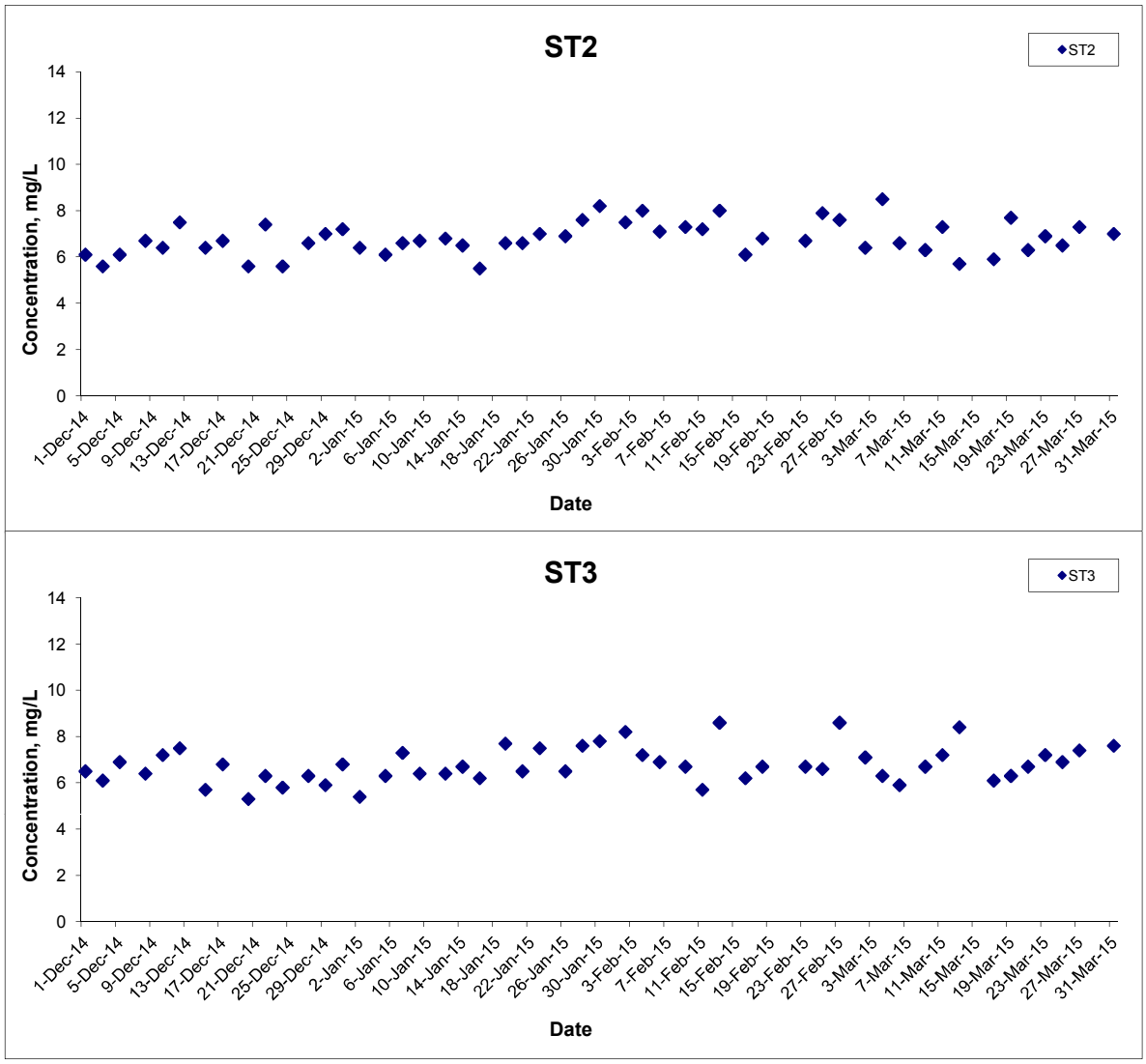
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



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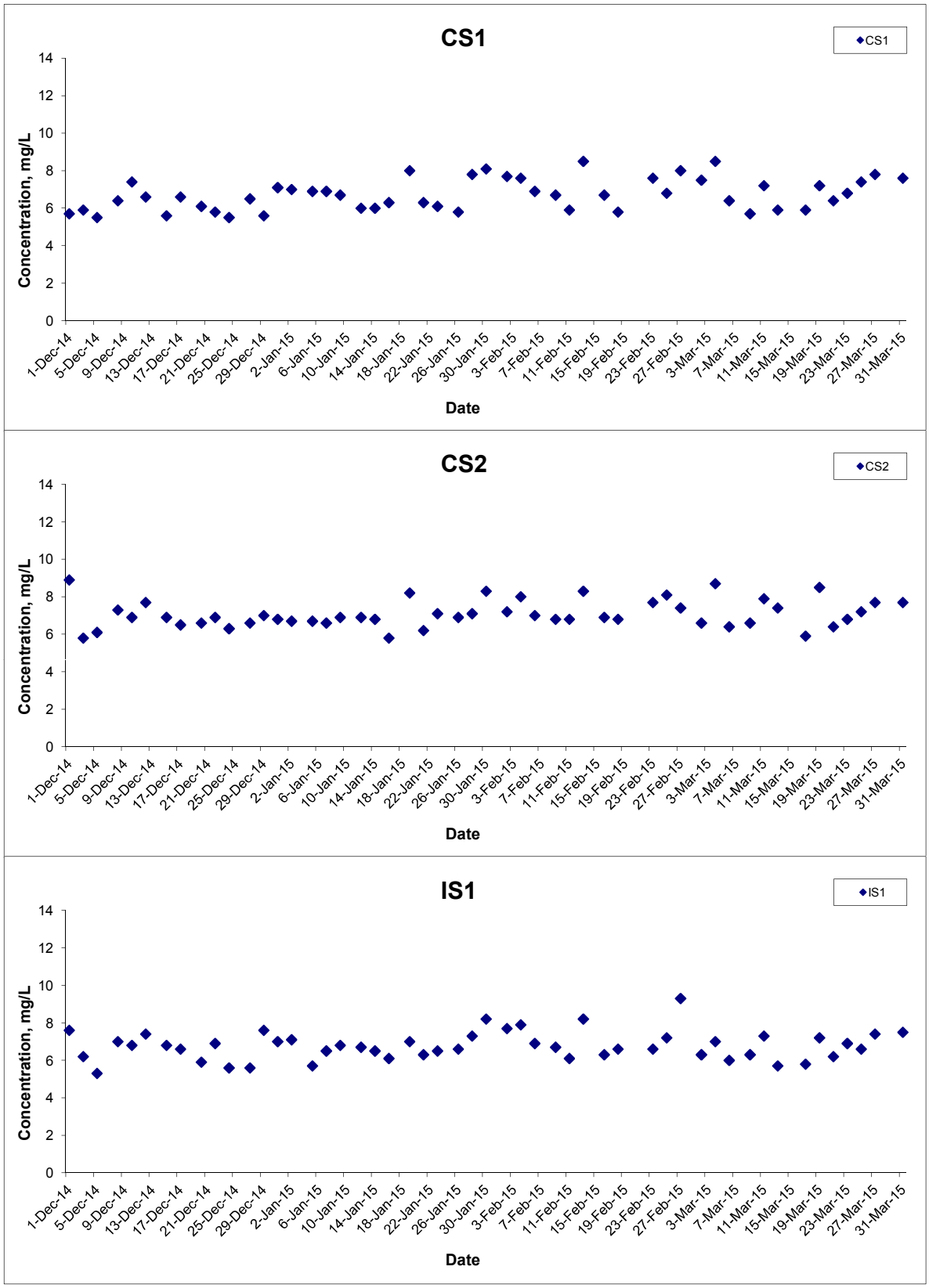
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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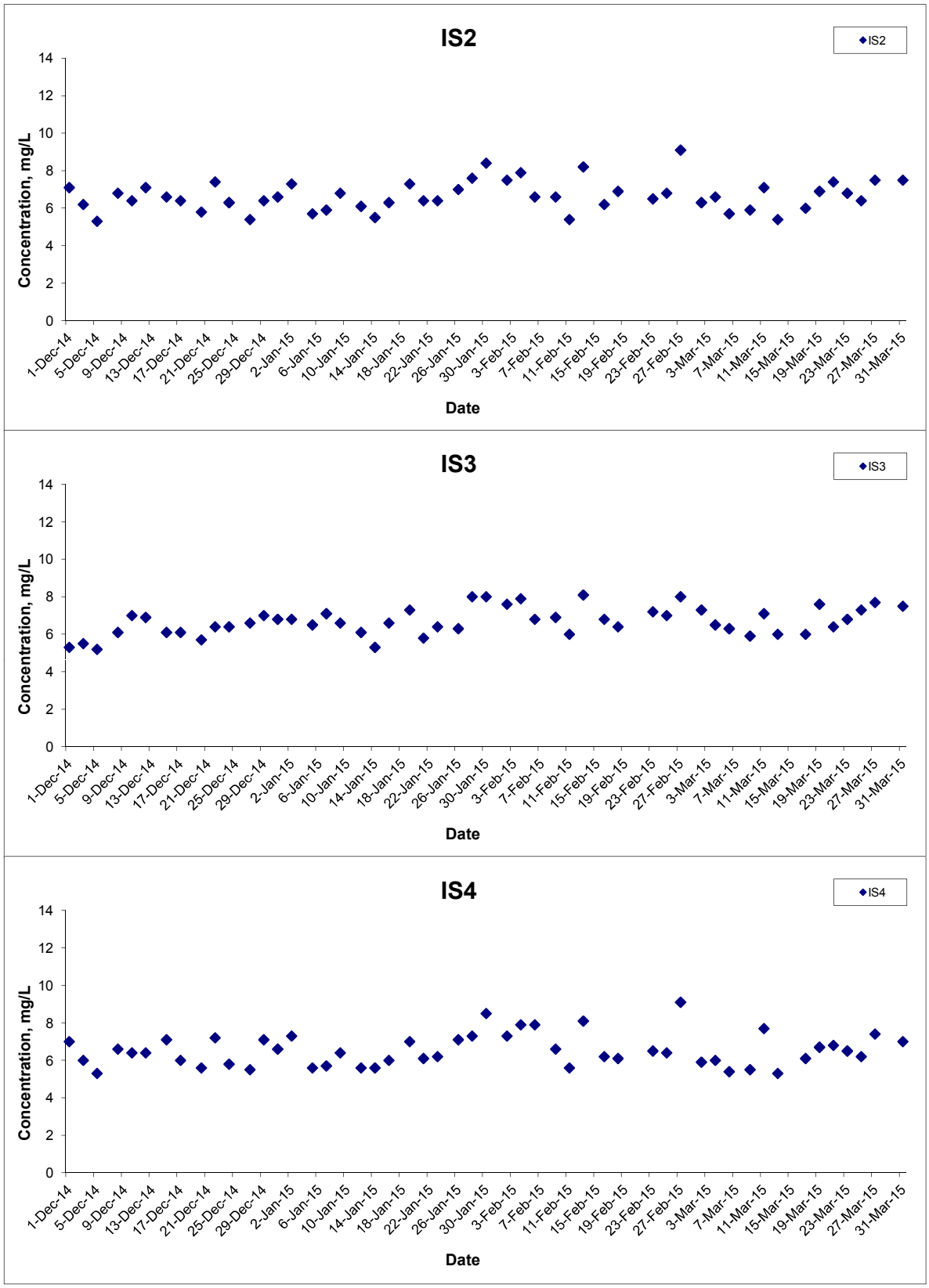
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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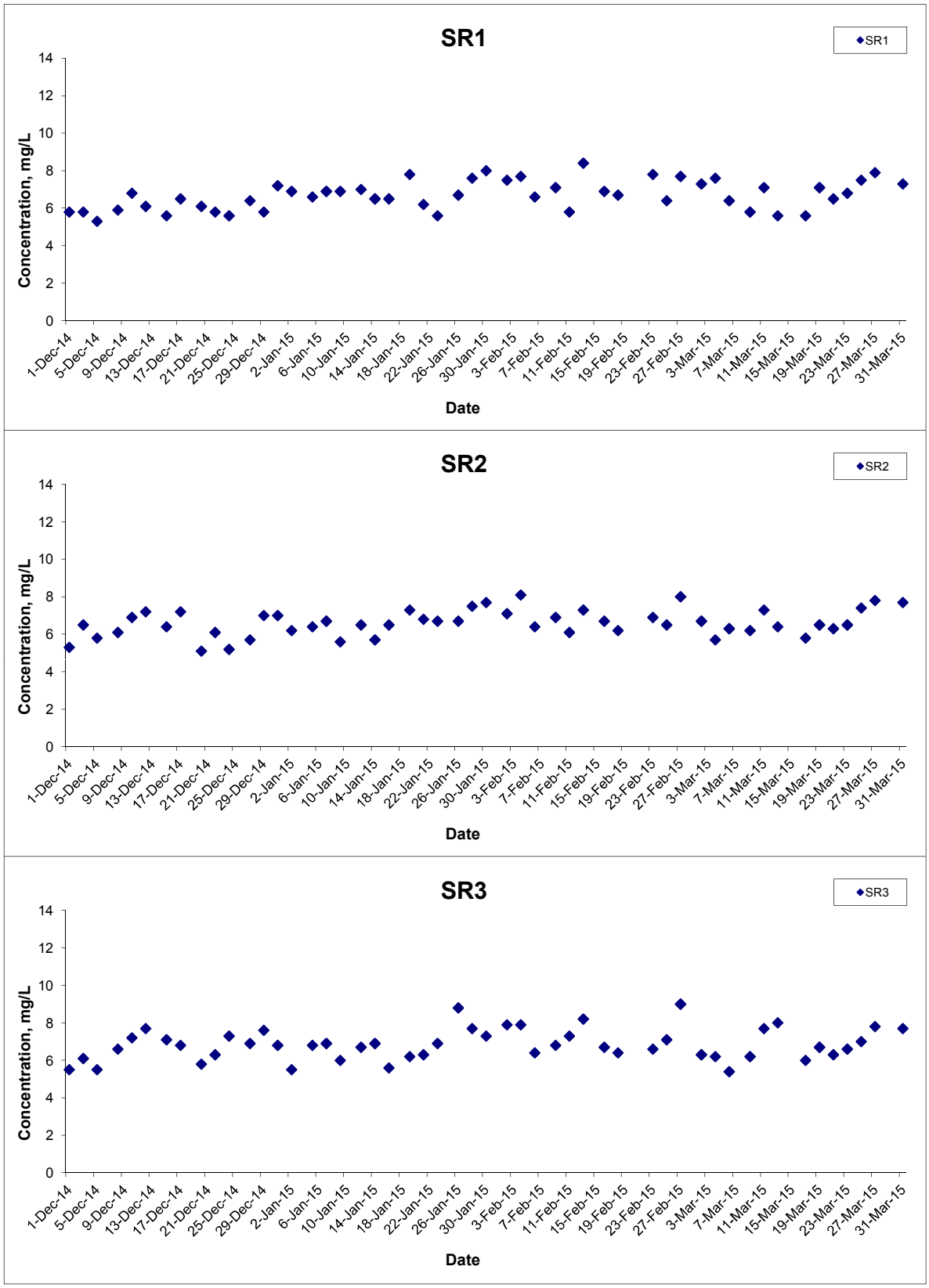
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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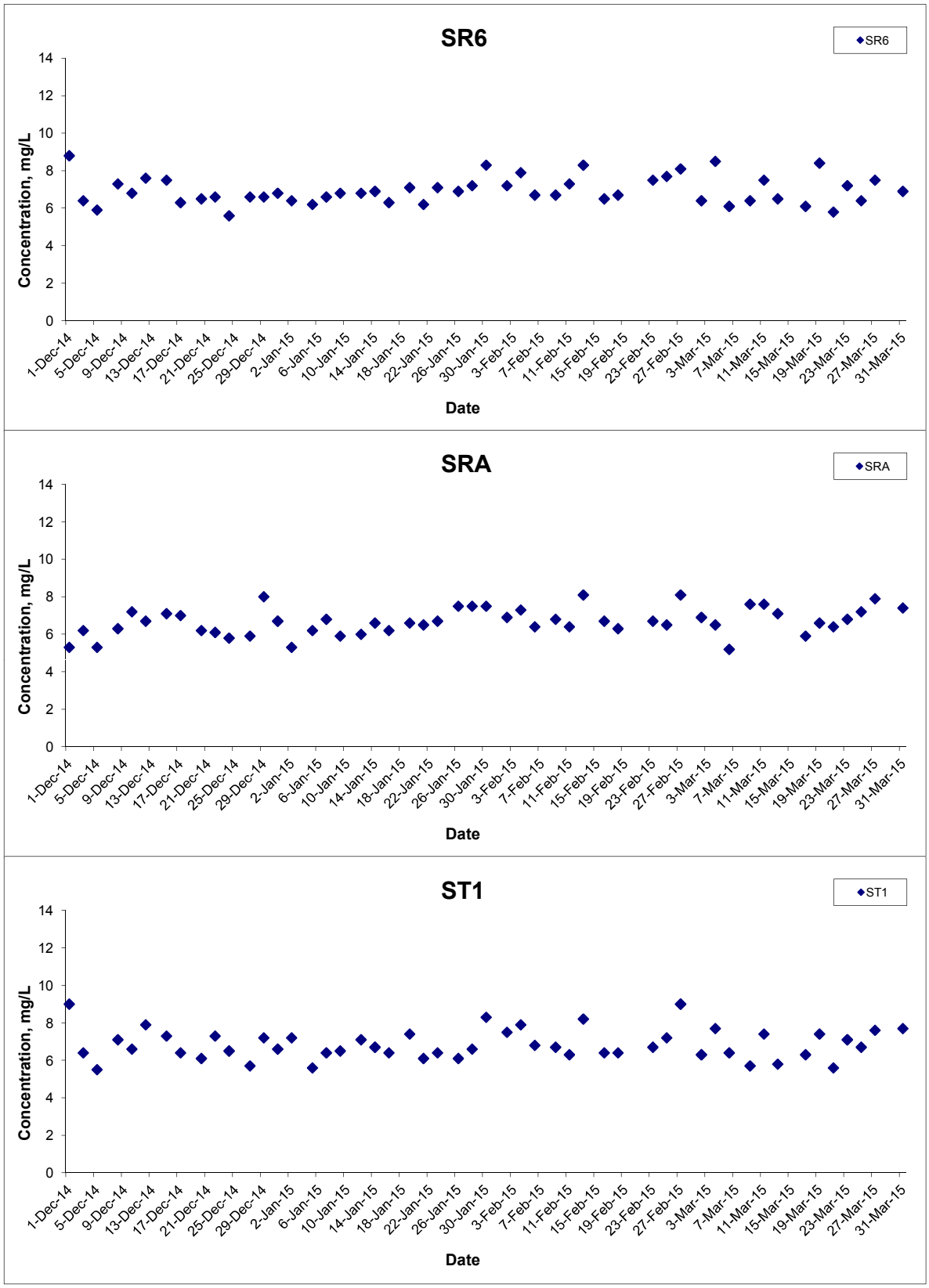
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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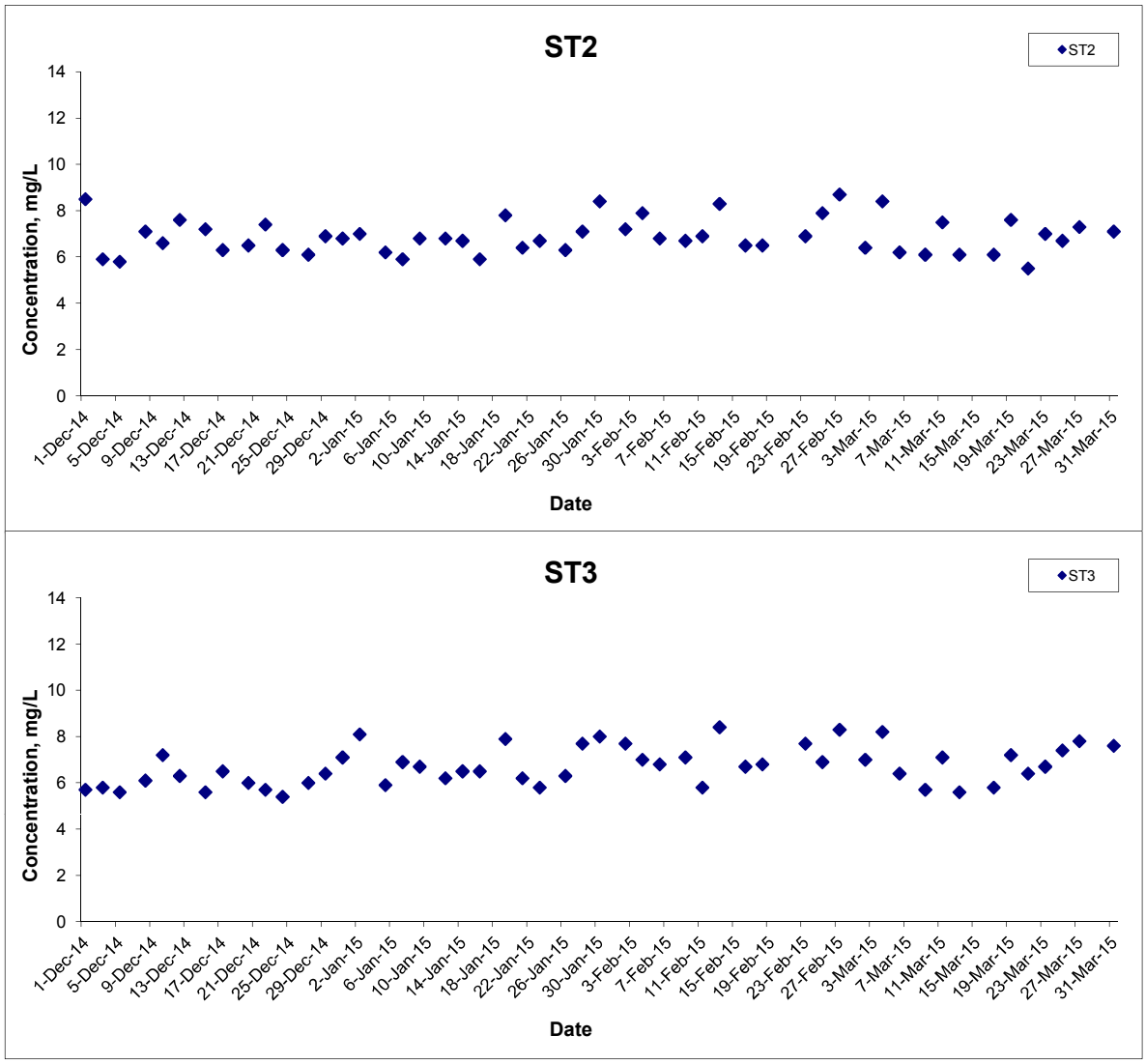
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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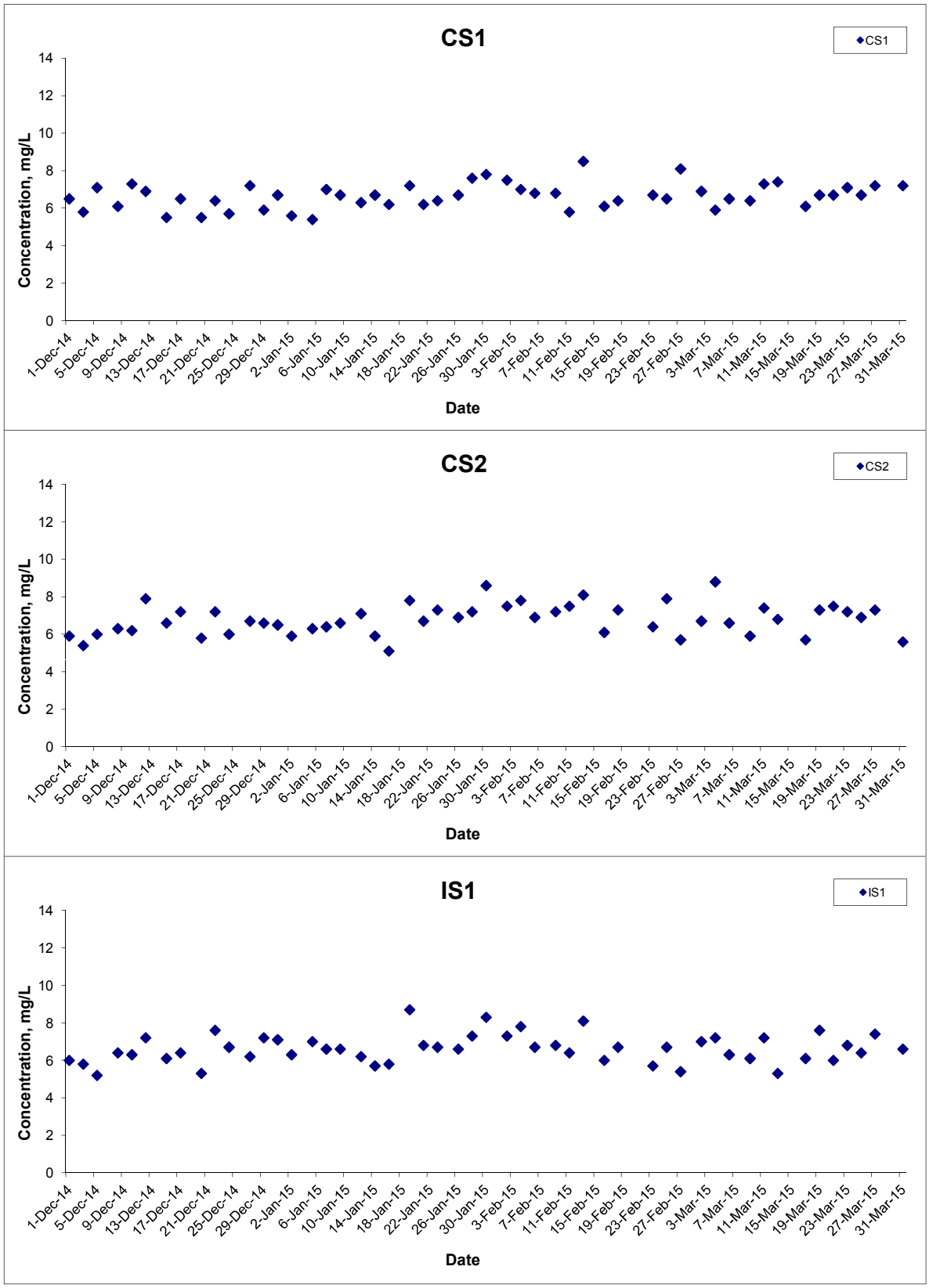
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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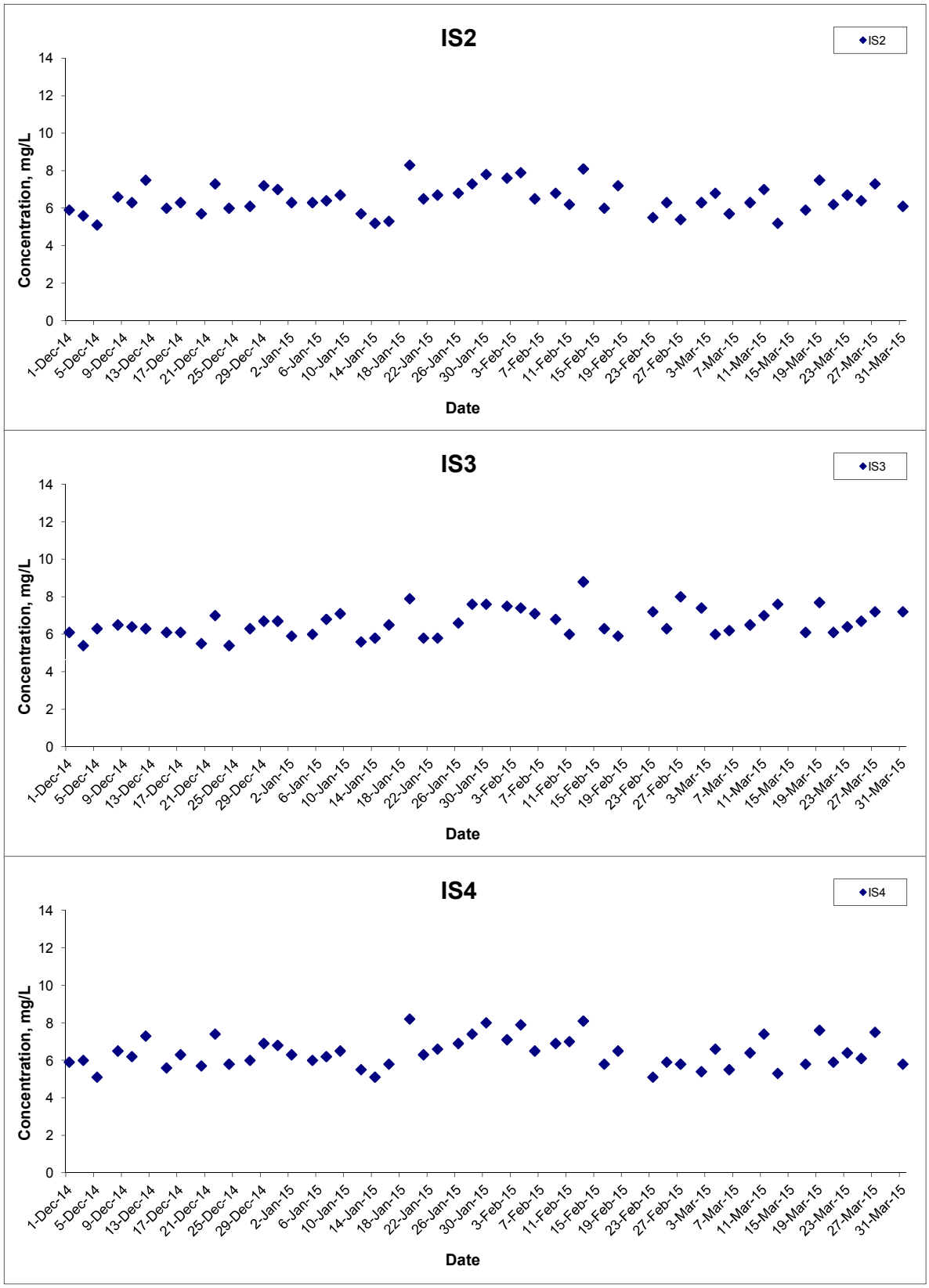
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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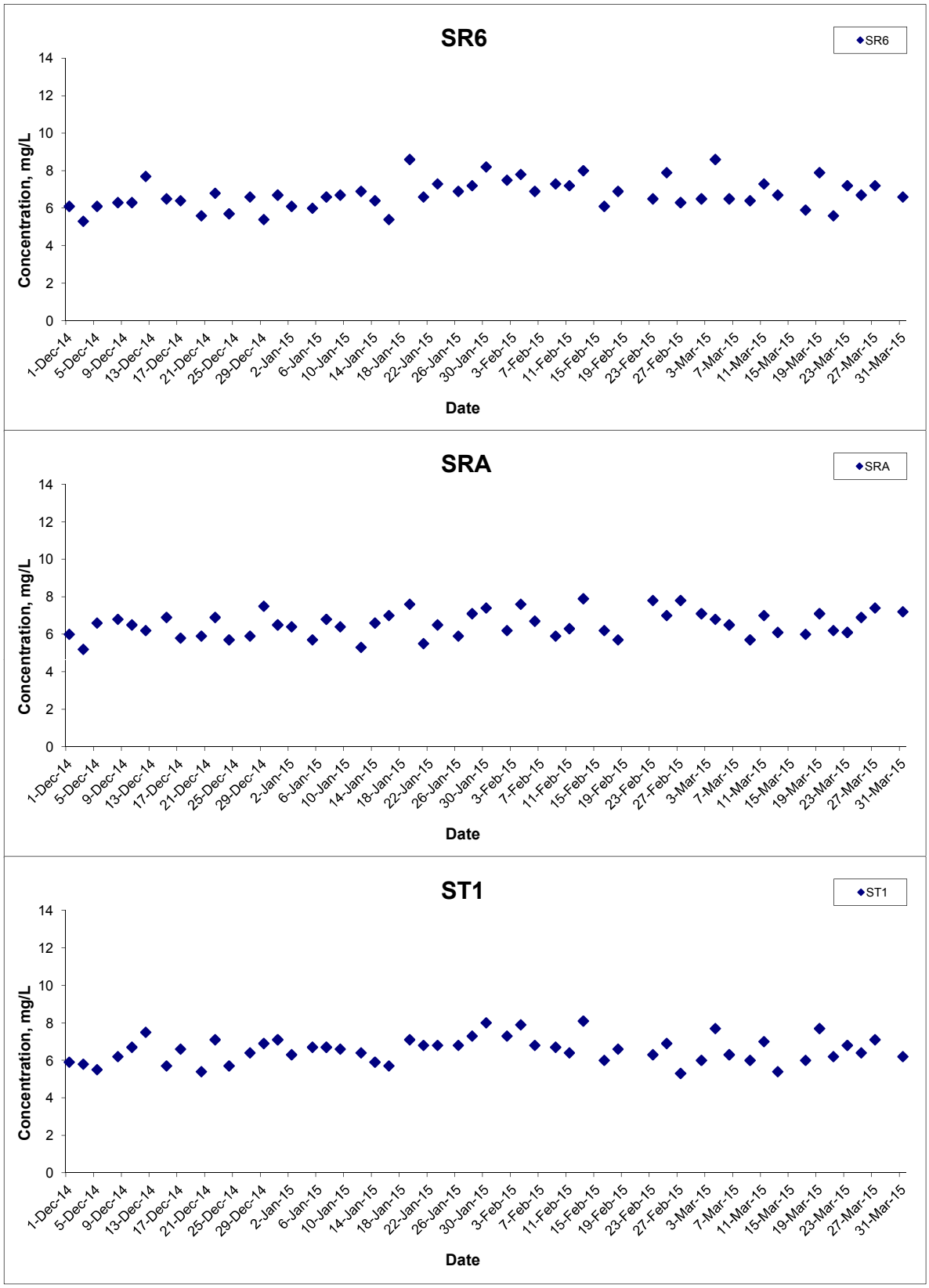
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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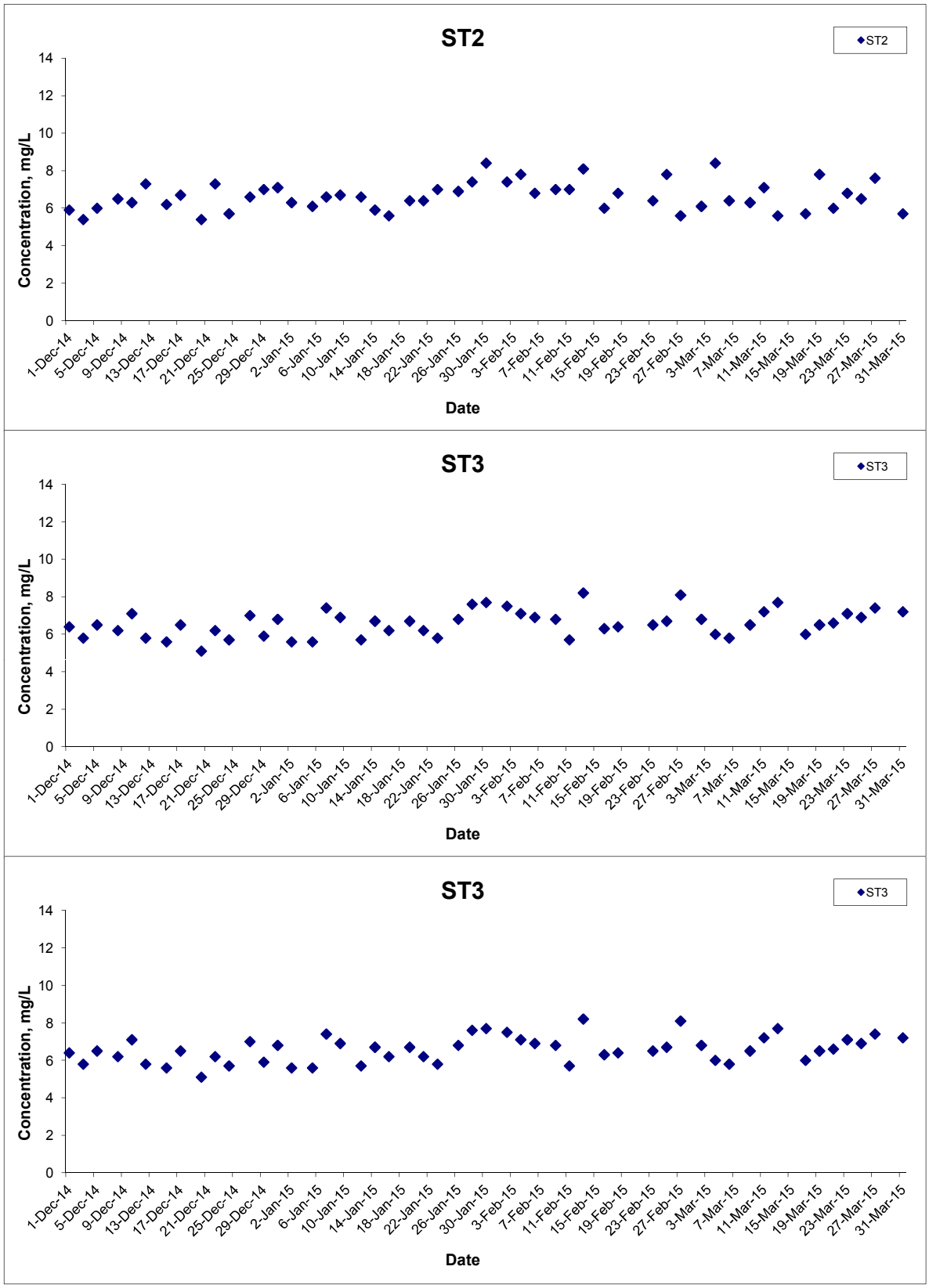

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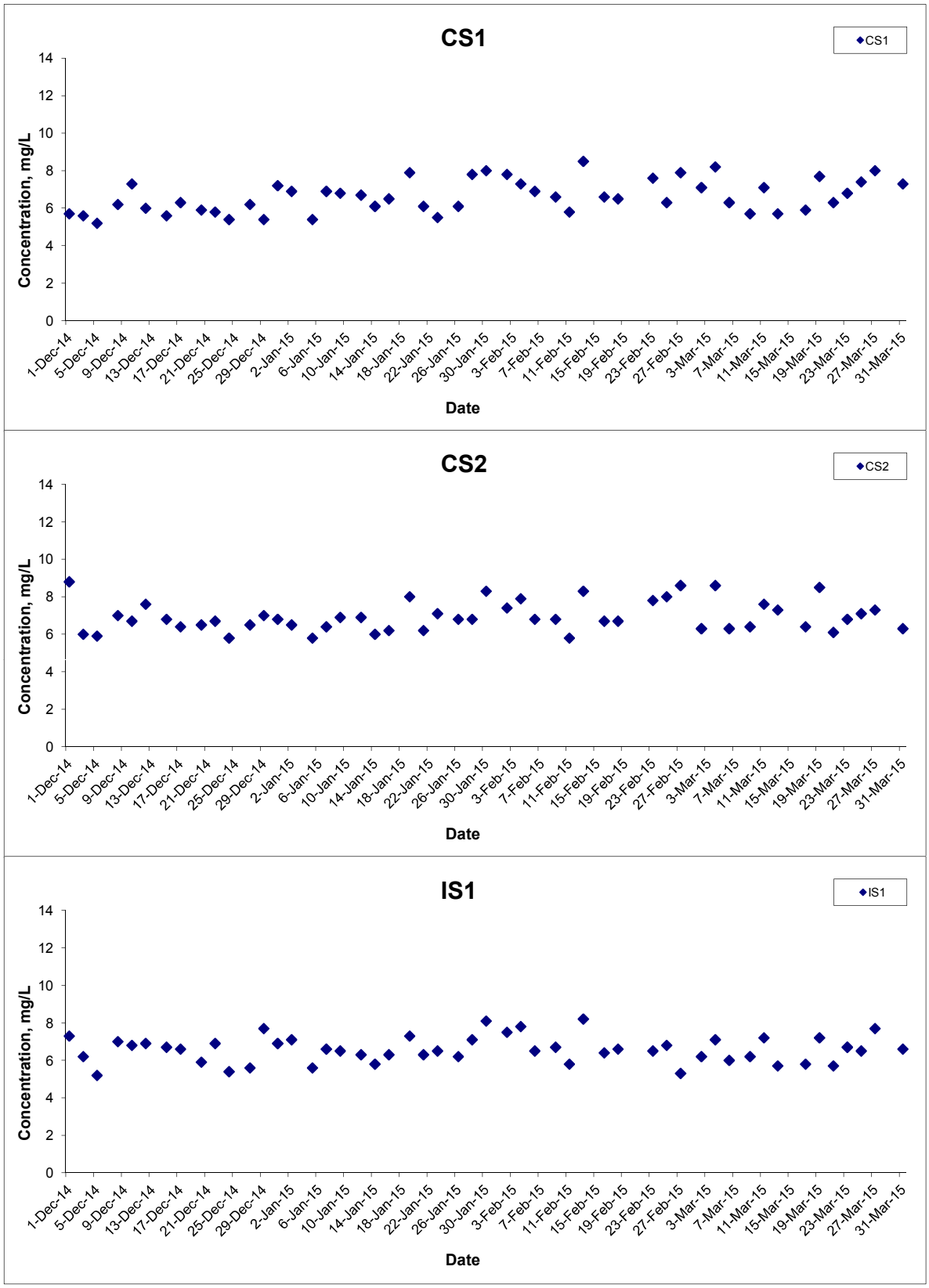
Dissolved Oxygen (Bottom) at Mid-Flood Tide



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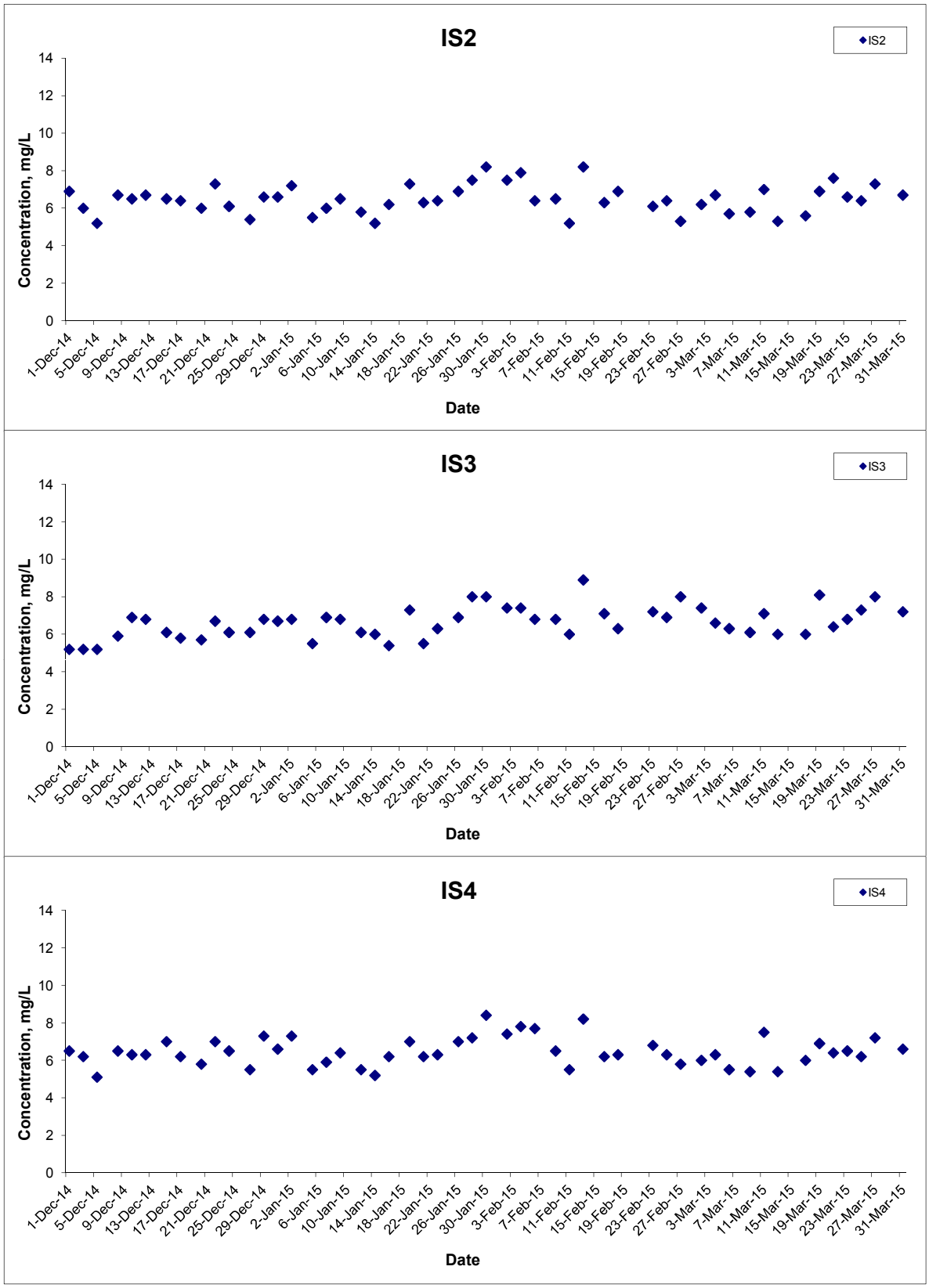

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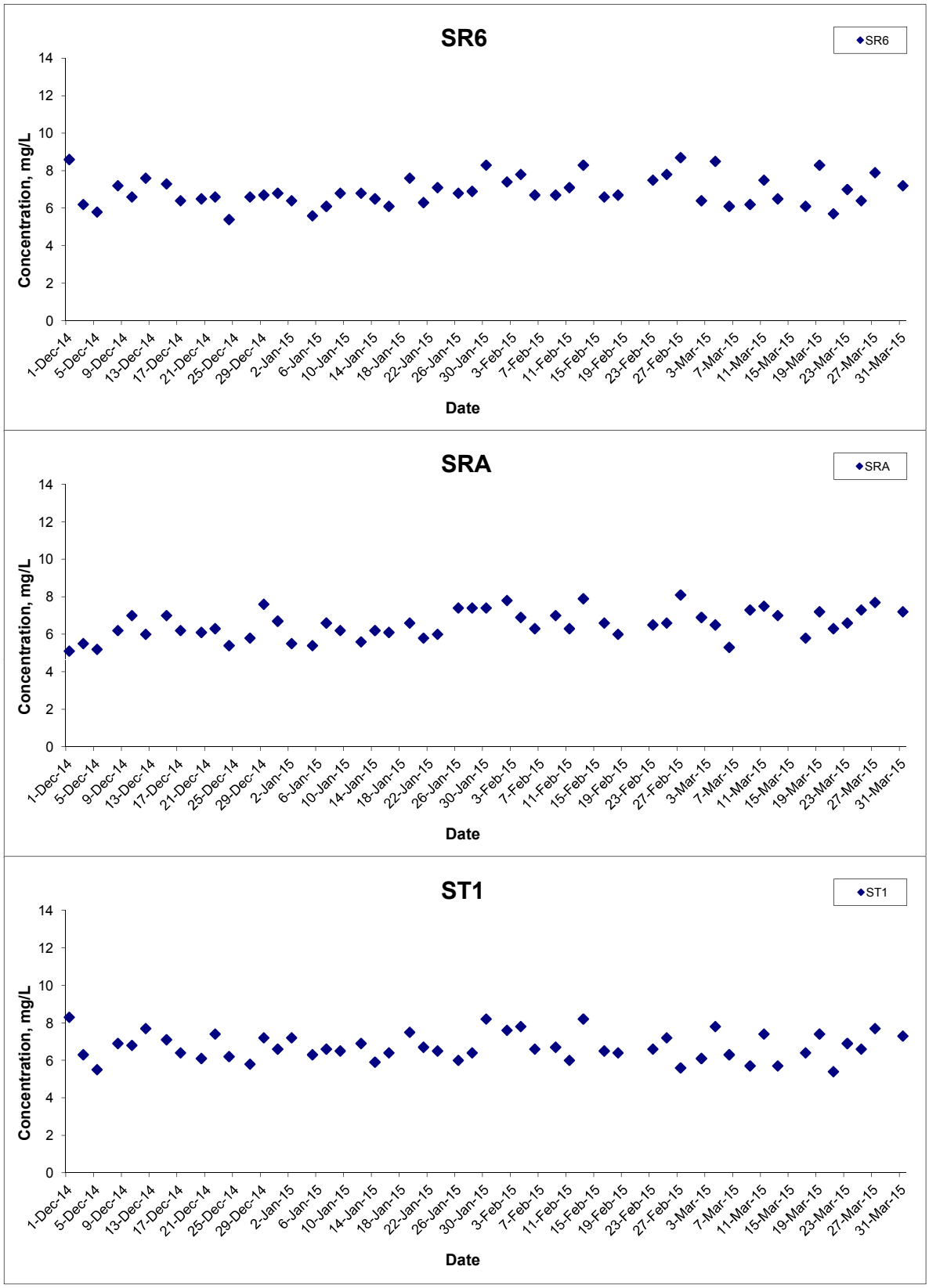

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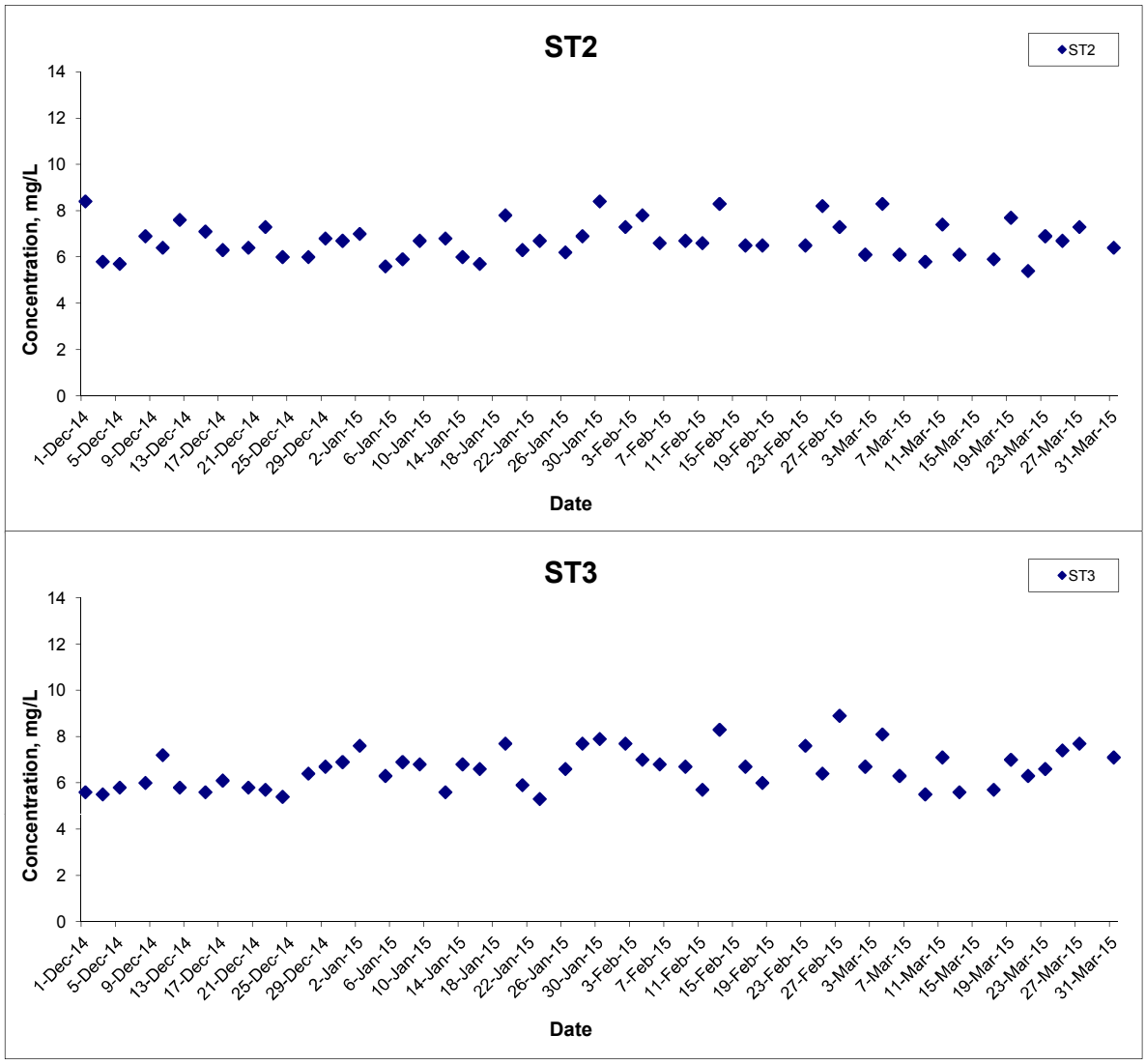

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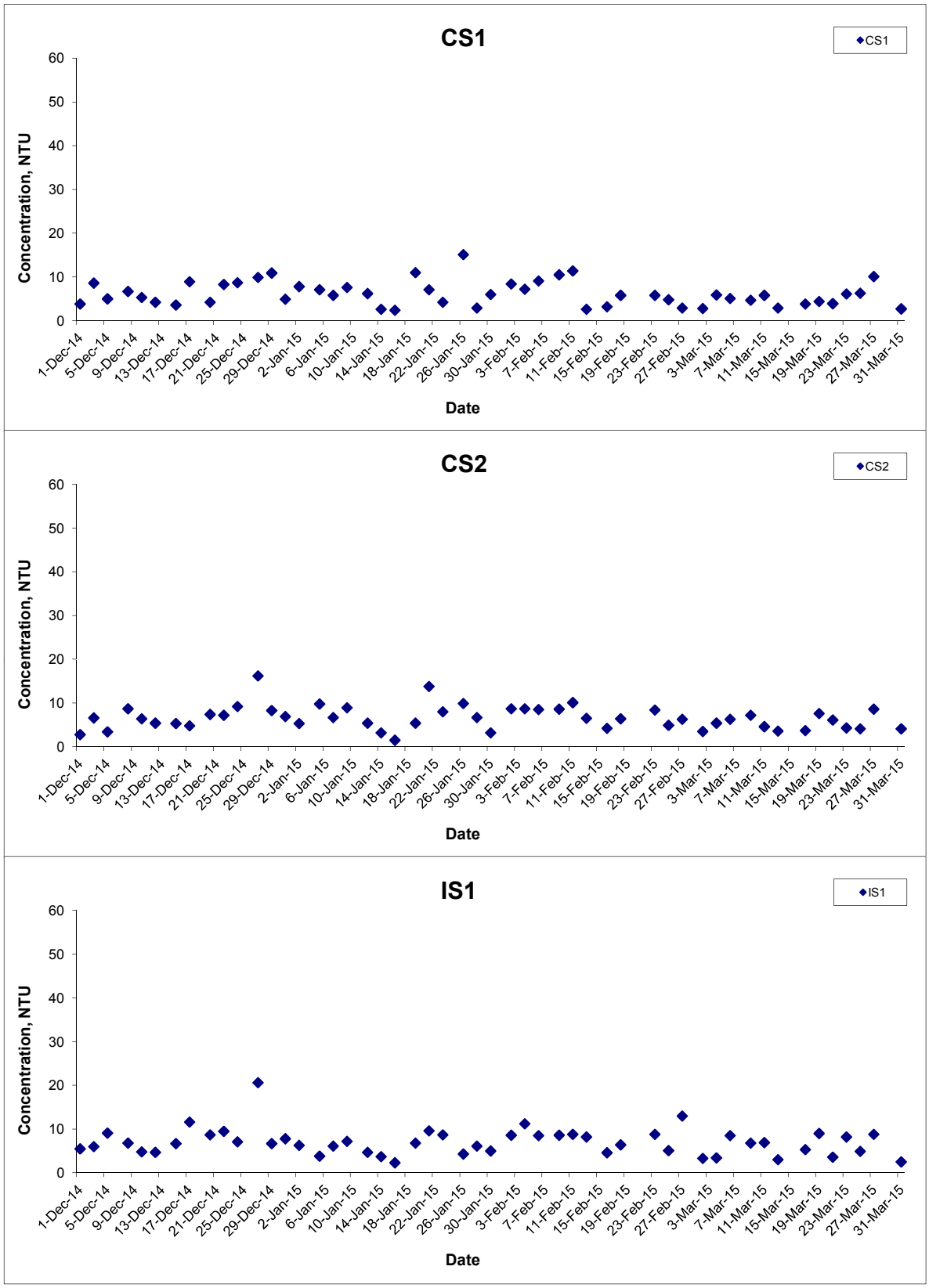
Turbidity (Depth-averaged) at Mid-Ebb Tide



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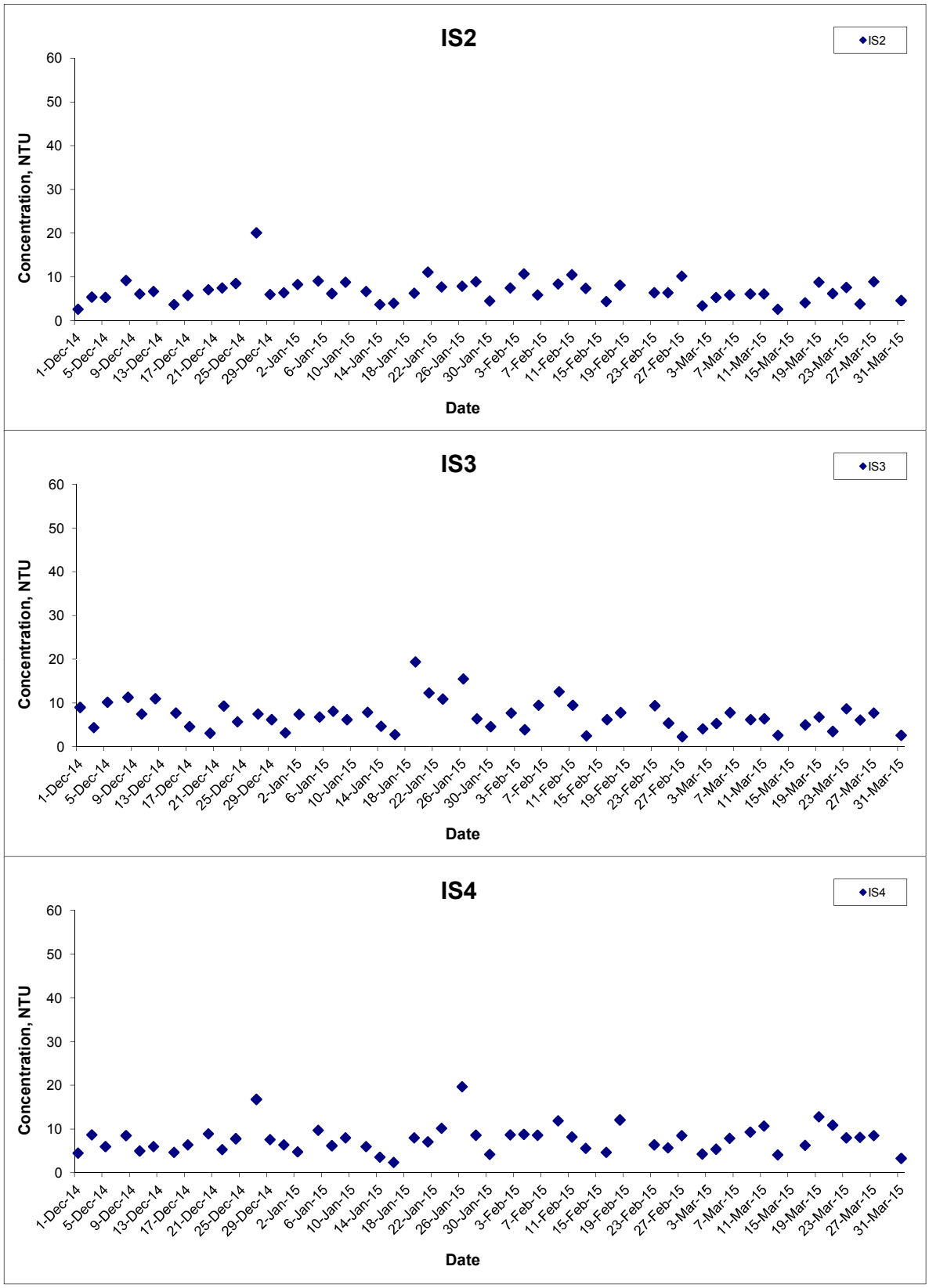
Turbidity (Depth-averaged) at Mid-Ebb Tide



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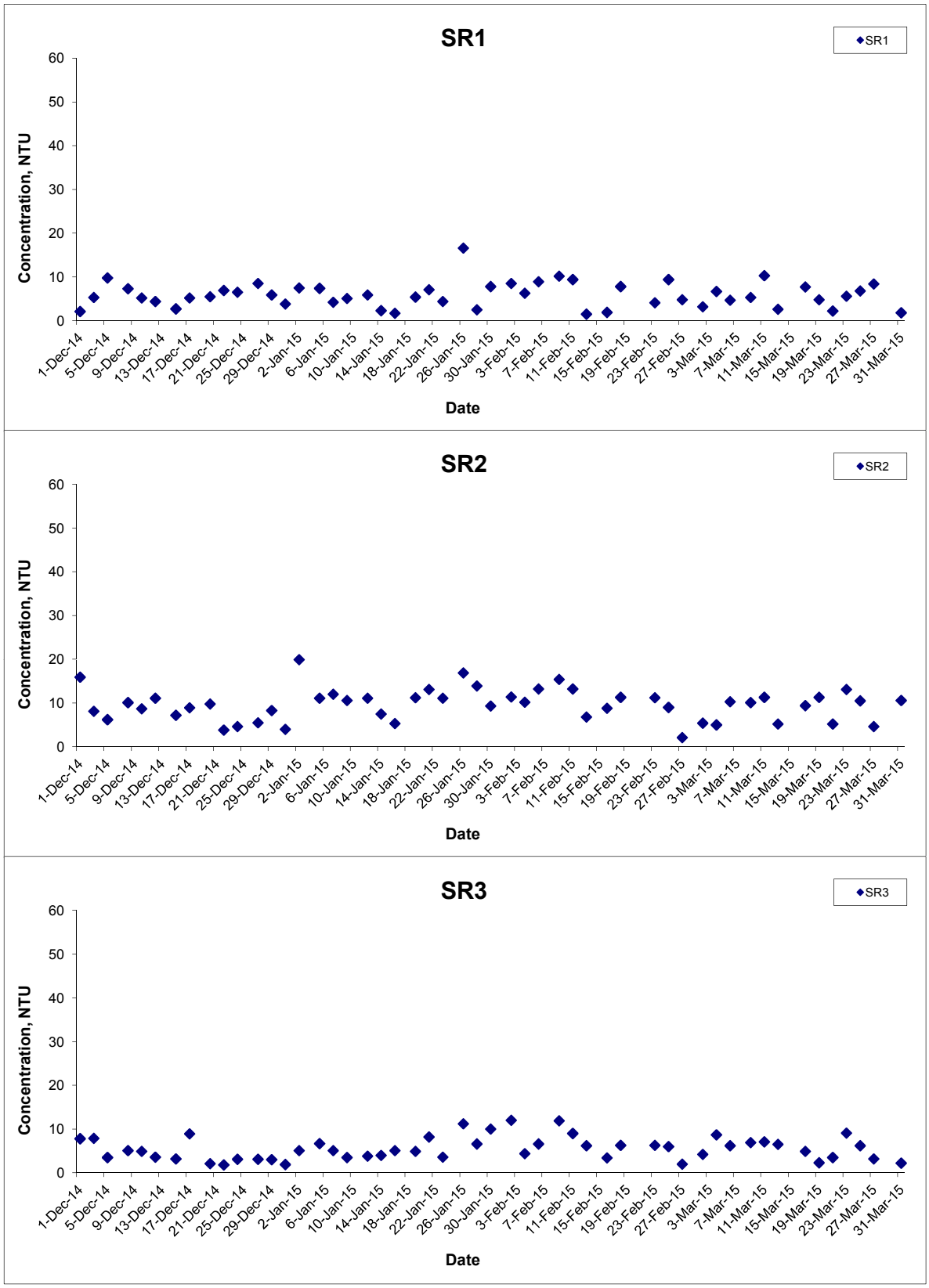
Turbidity (Depth-averaged) at Mid-Ebb Tide



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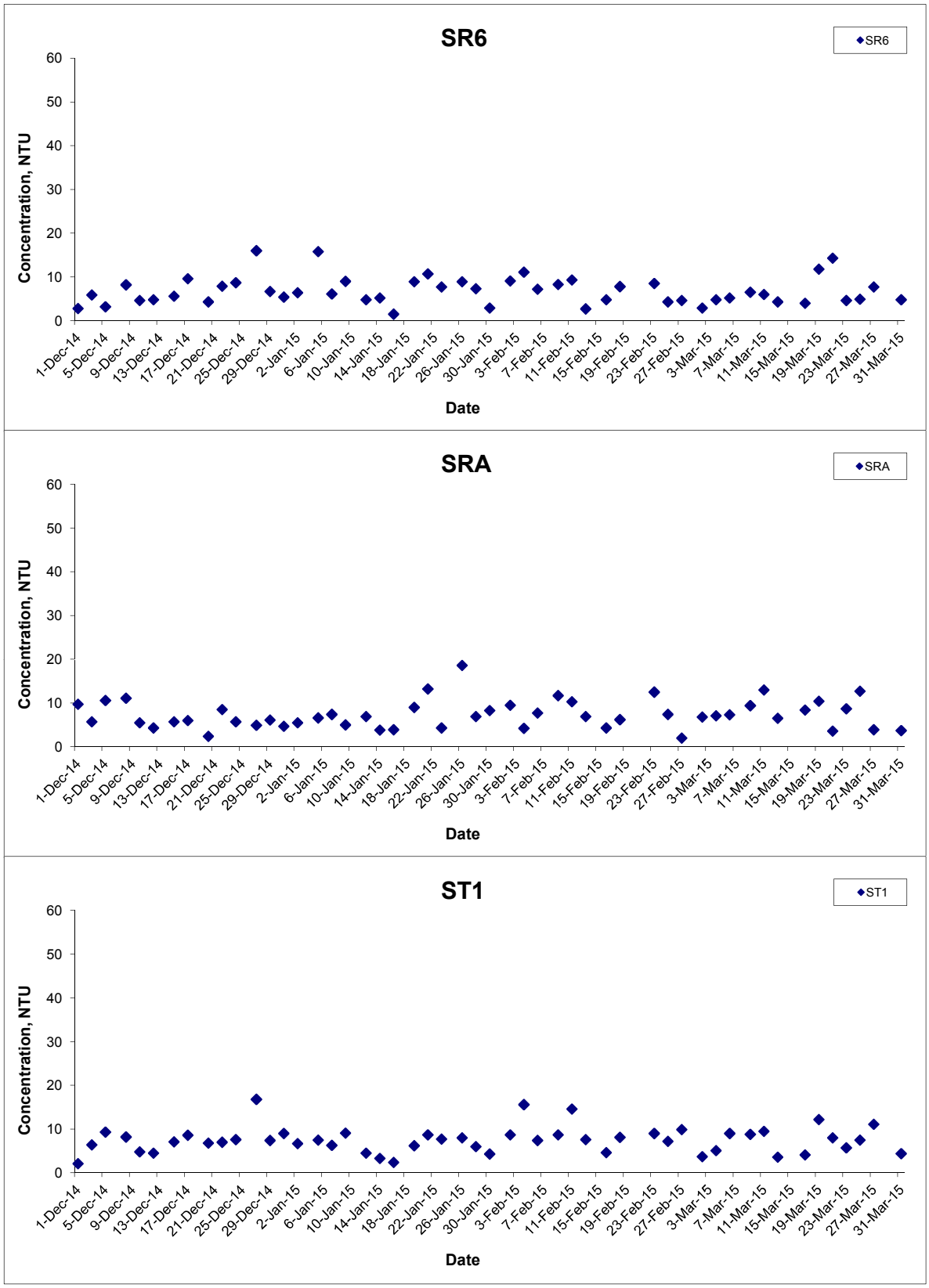

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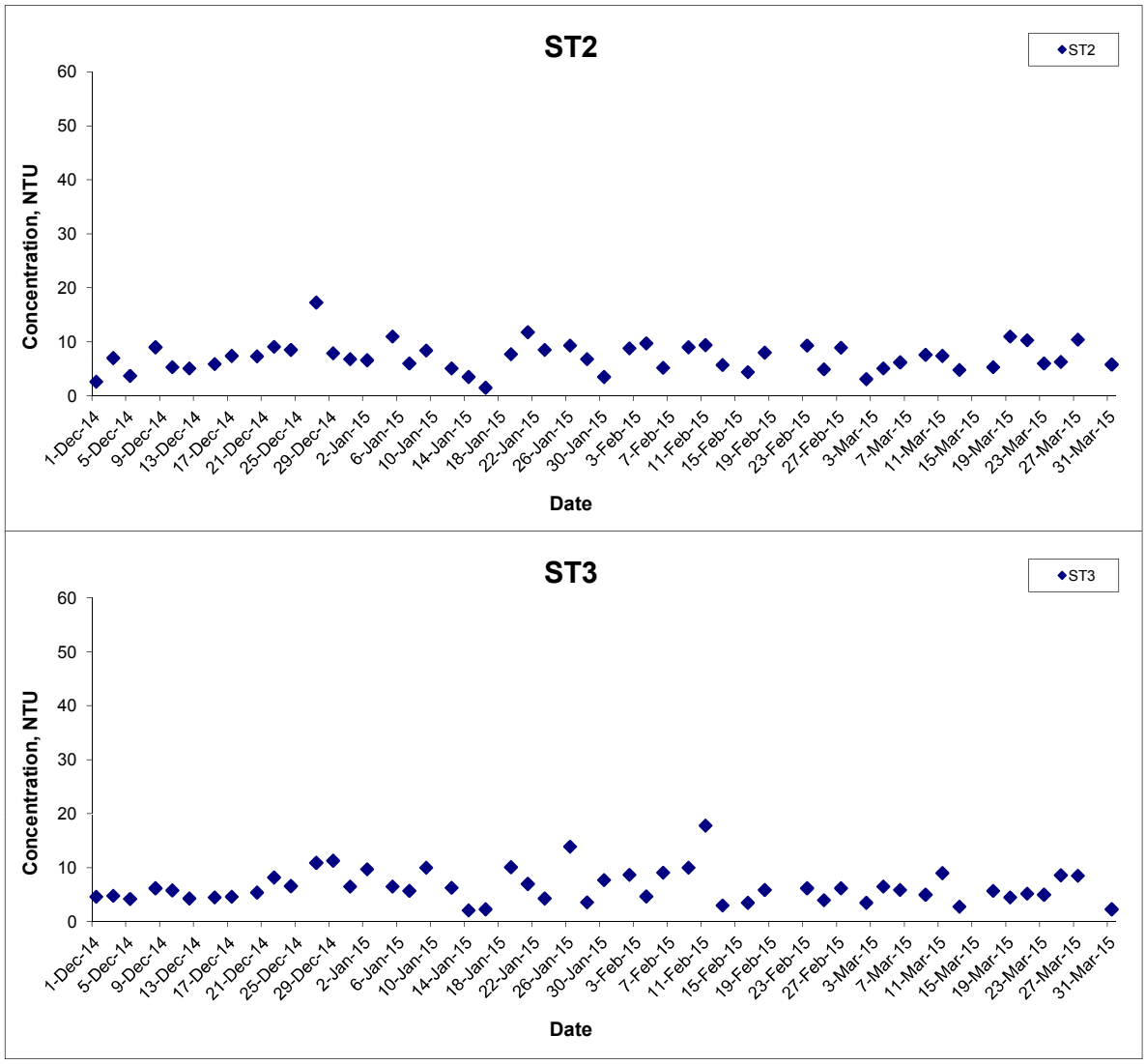

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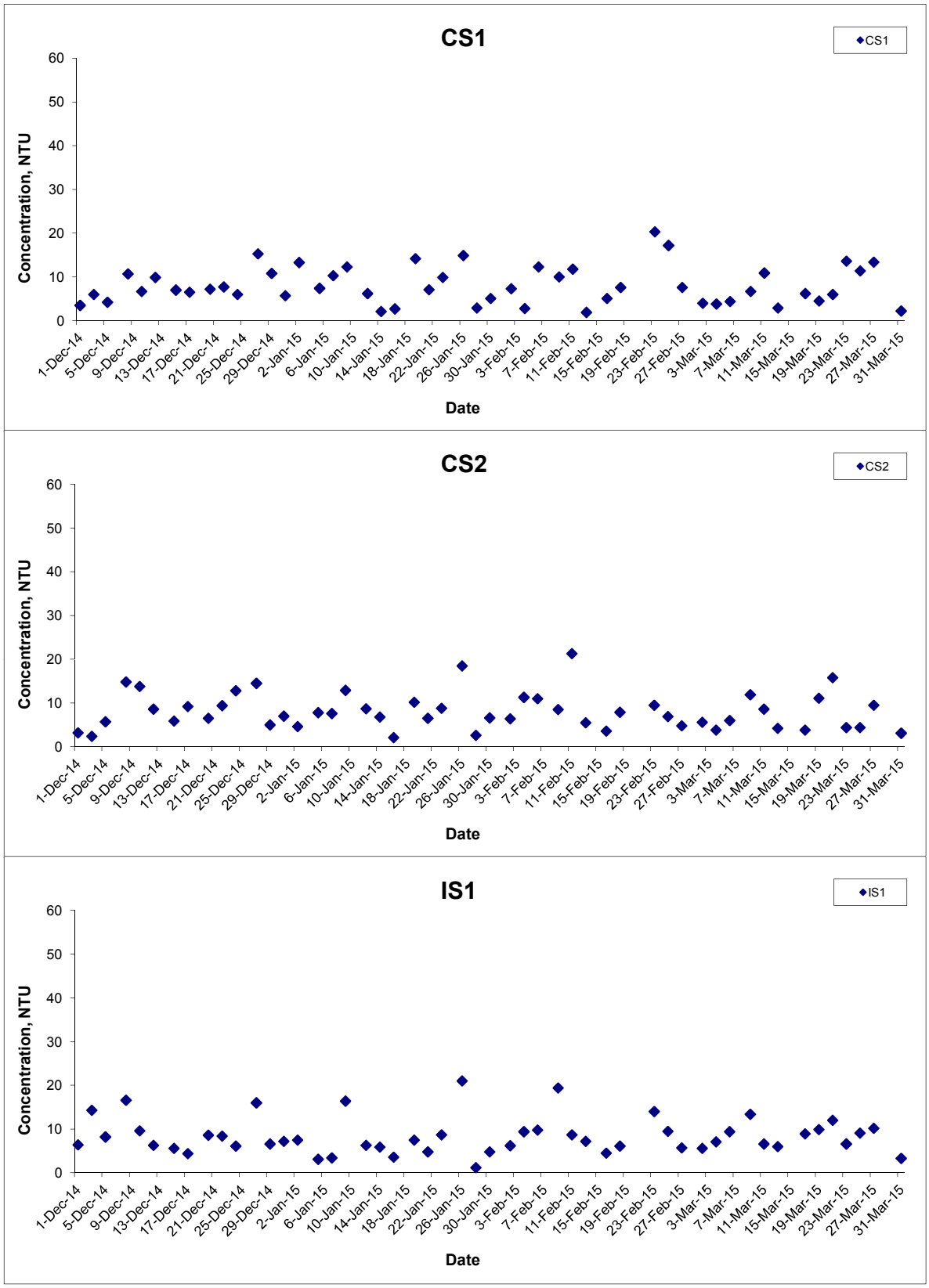
Turbidity (Depth-averaged) at Mid-Flood Tide



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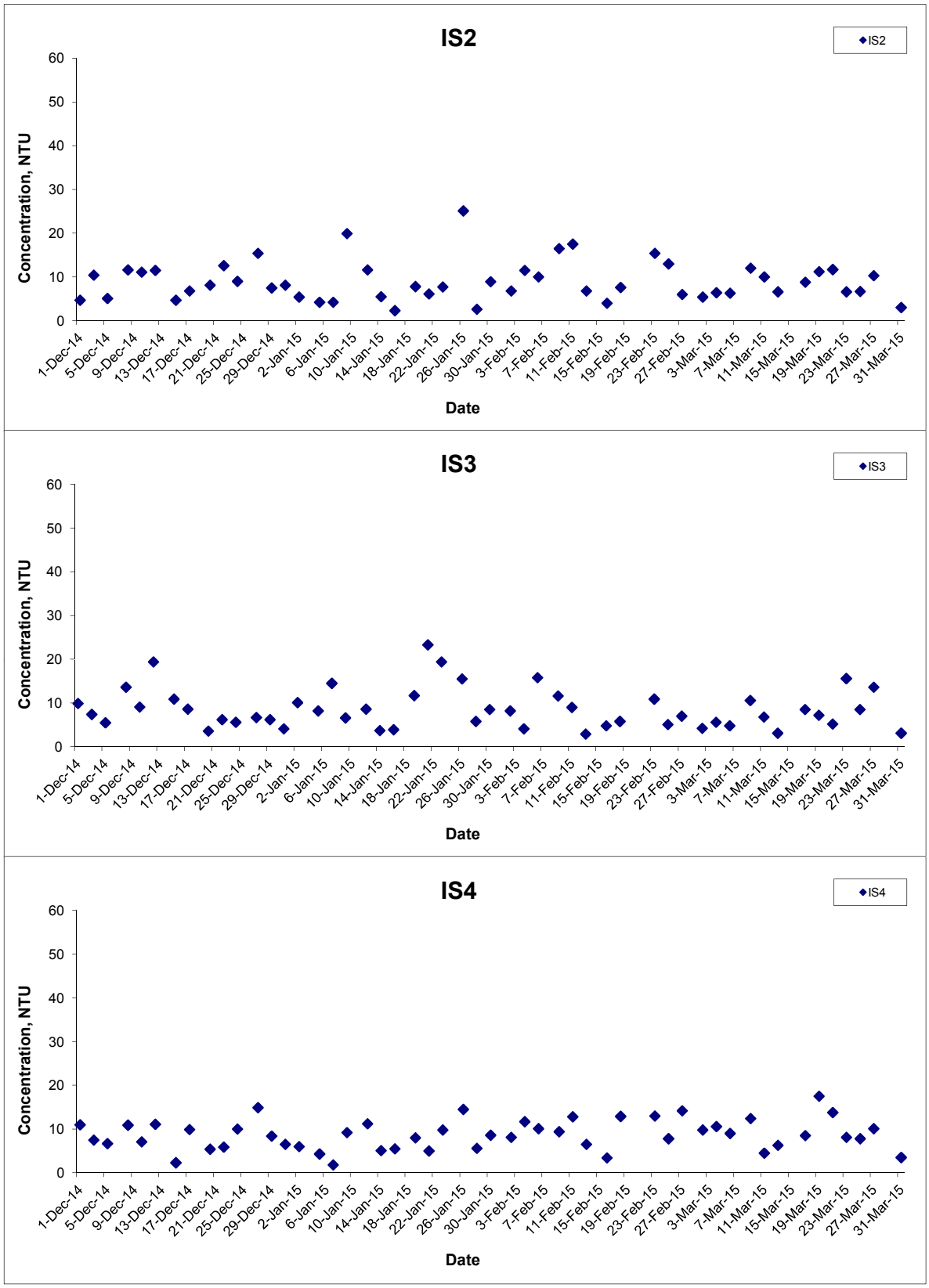
Turbidity (Depth-averaged) at Mid-Flood Tide



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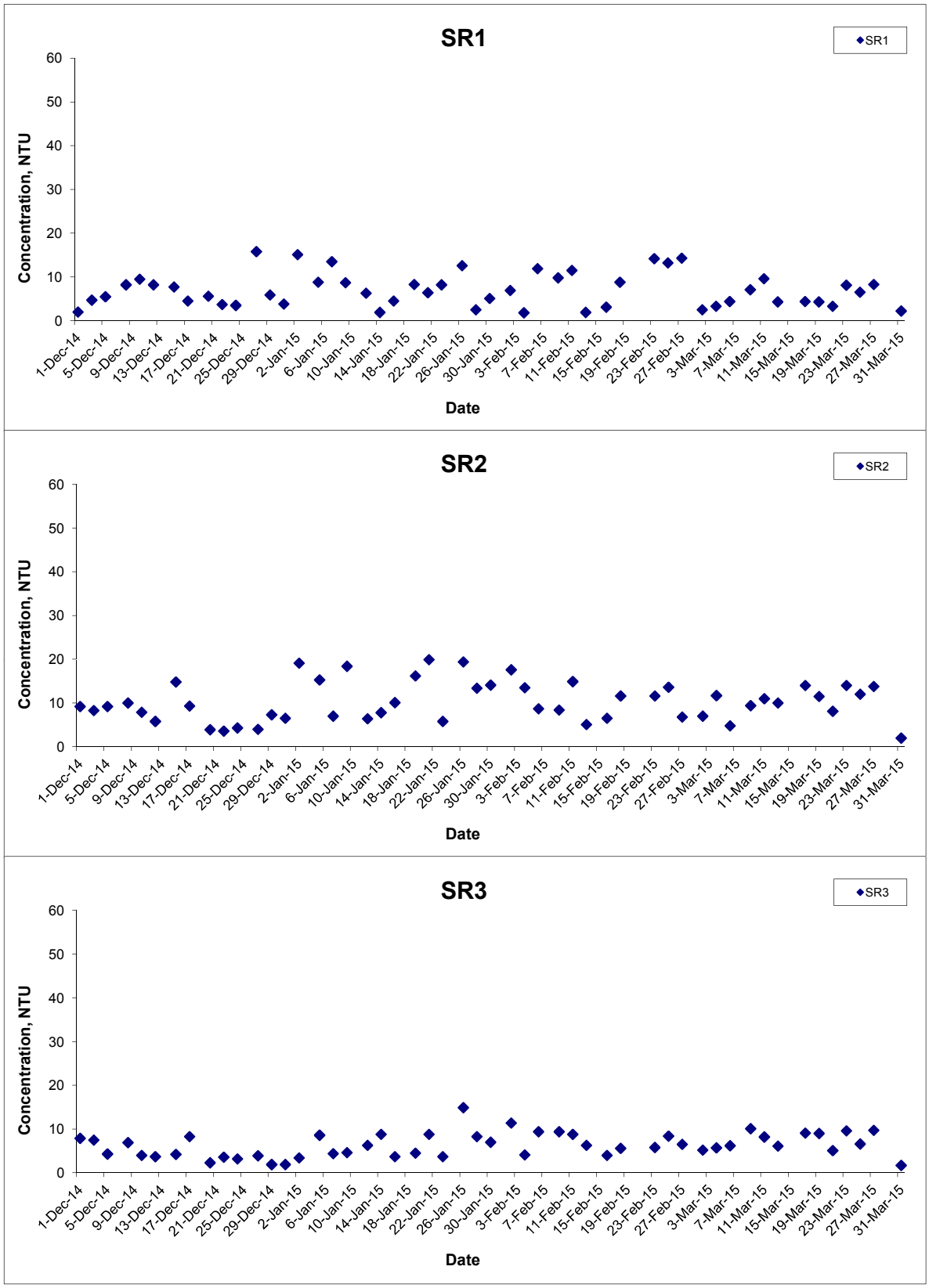
Turbidity (Depth-averaged) at Mid-Flood Tide



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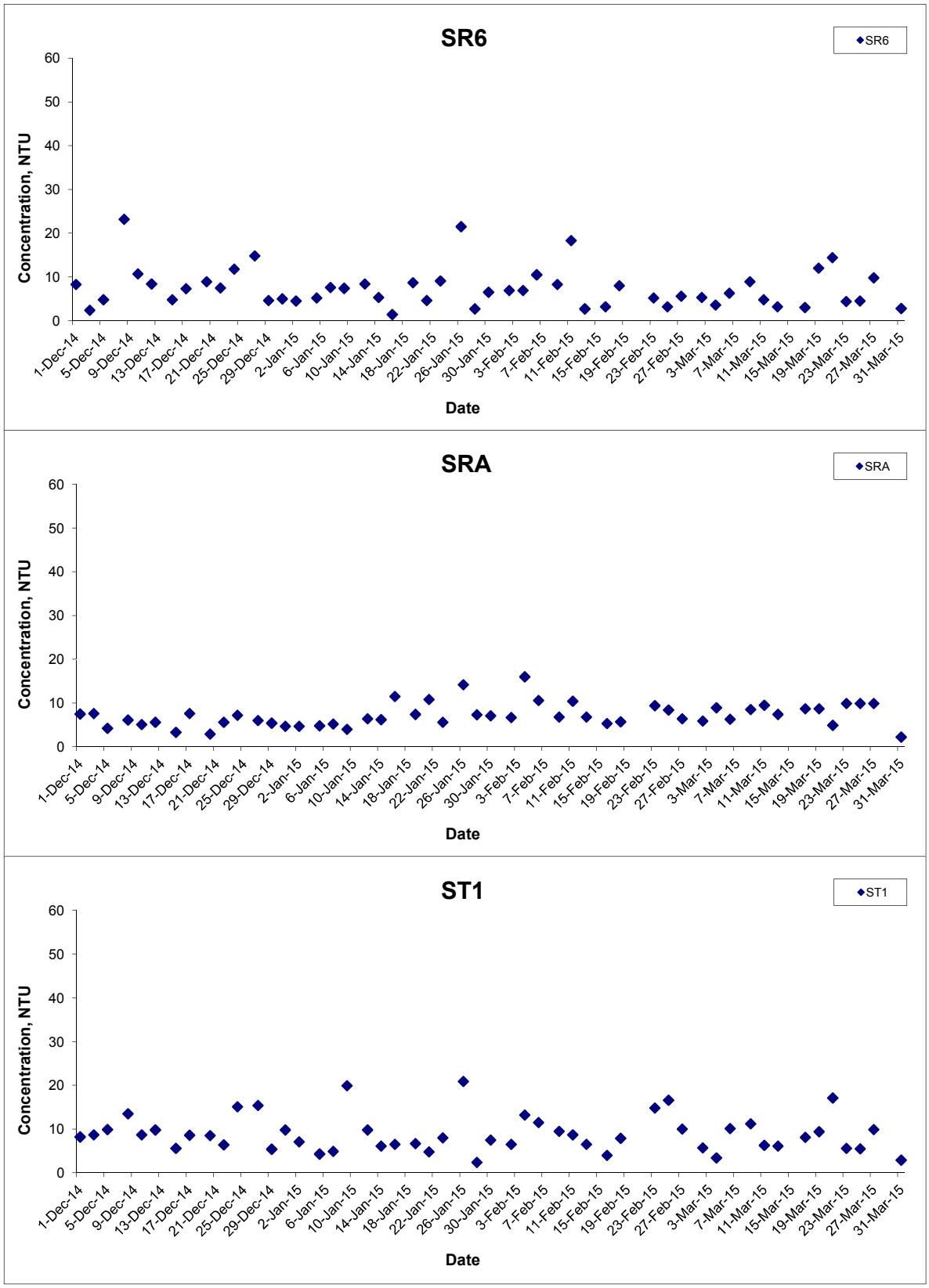

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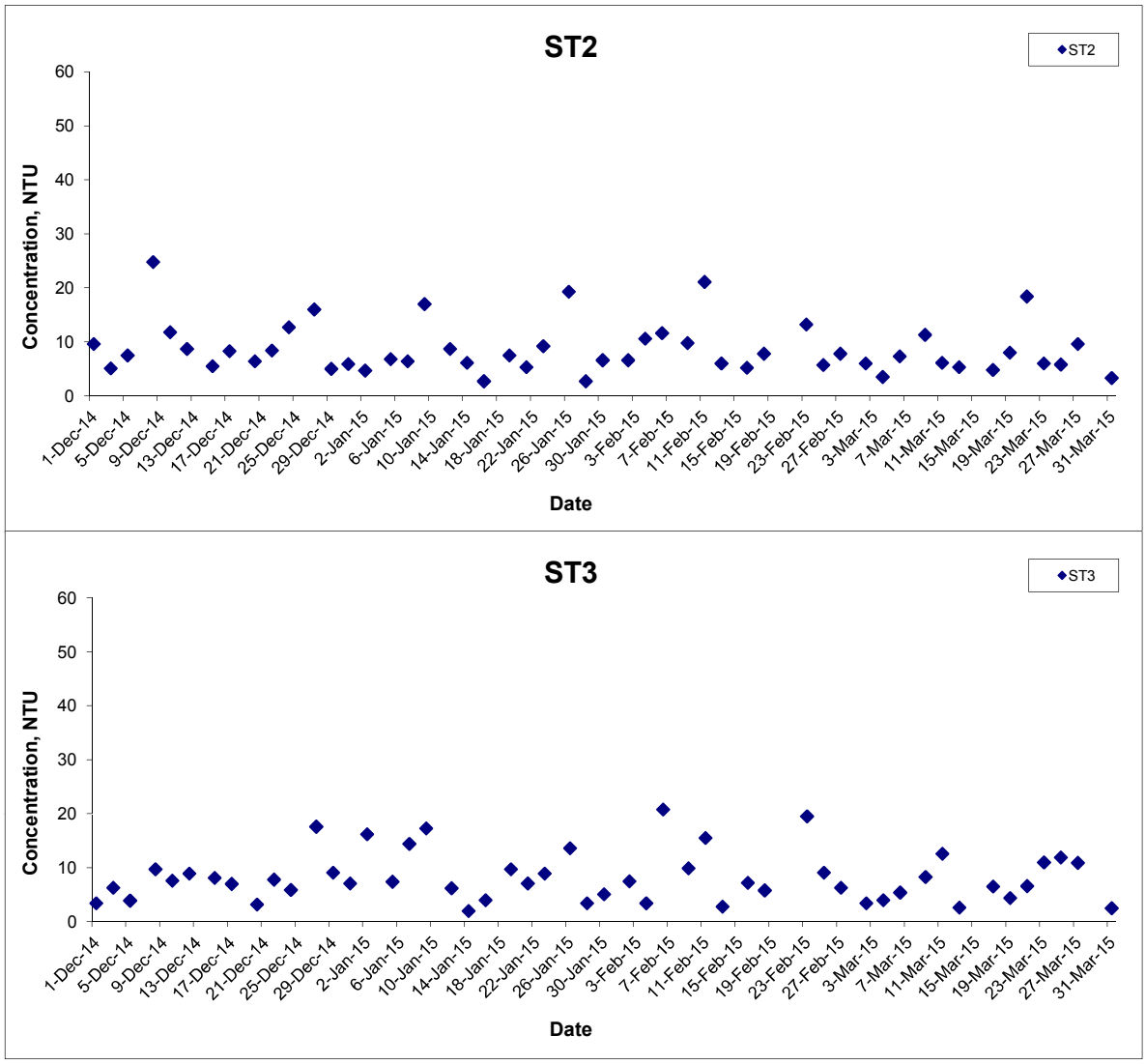

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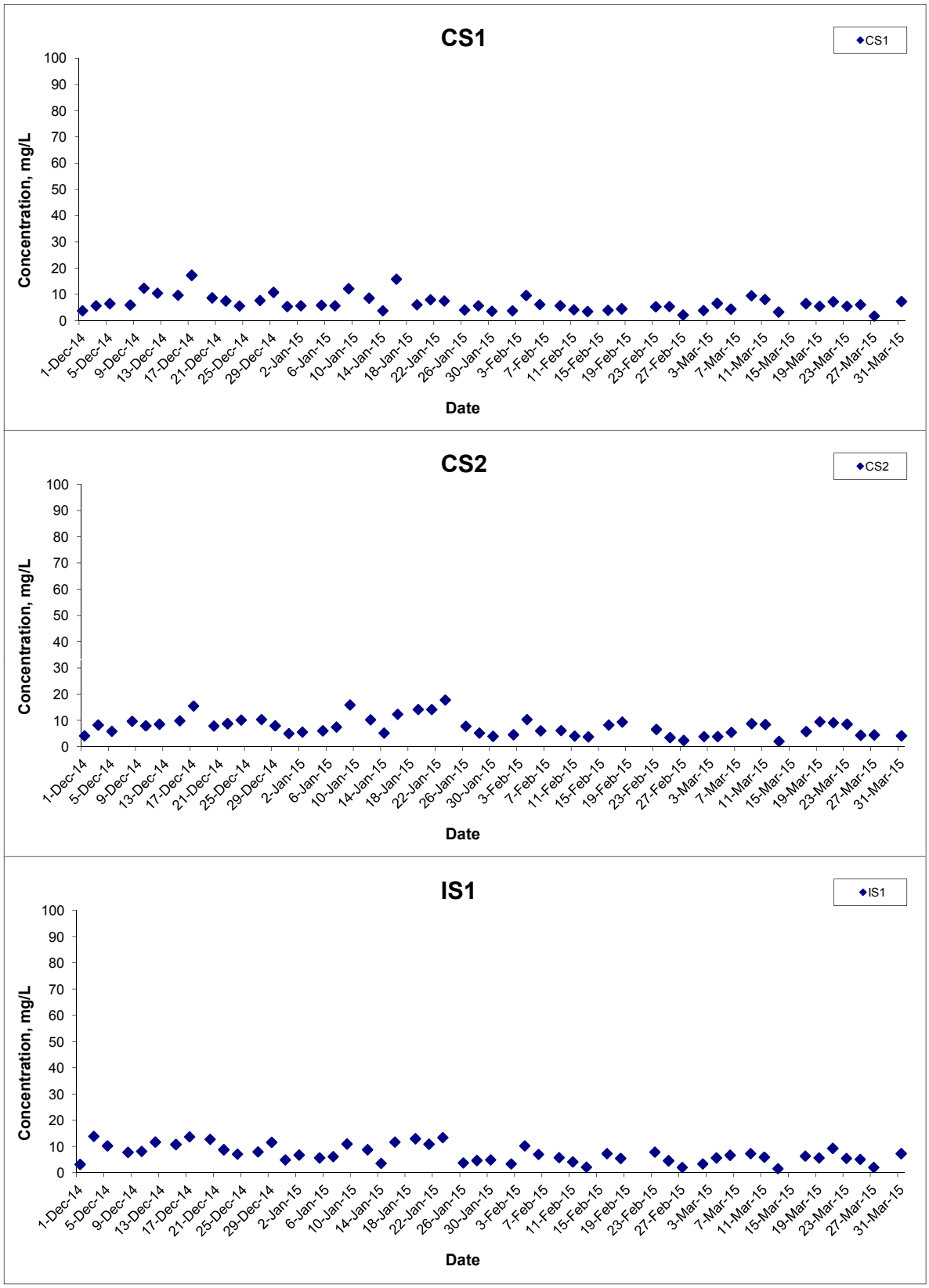
Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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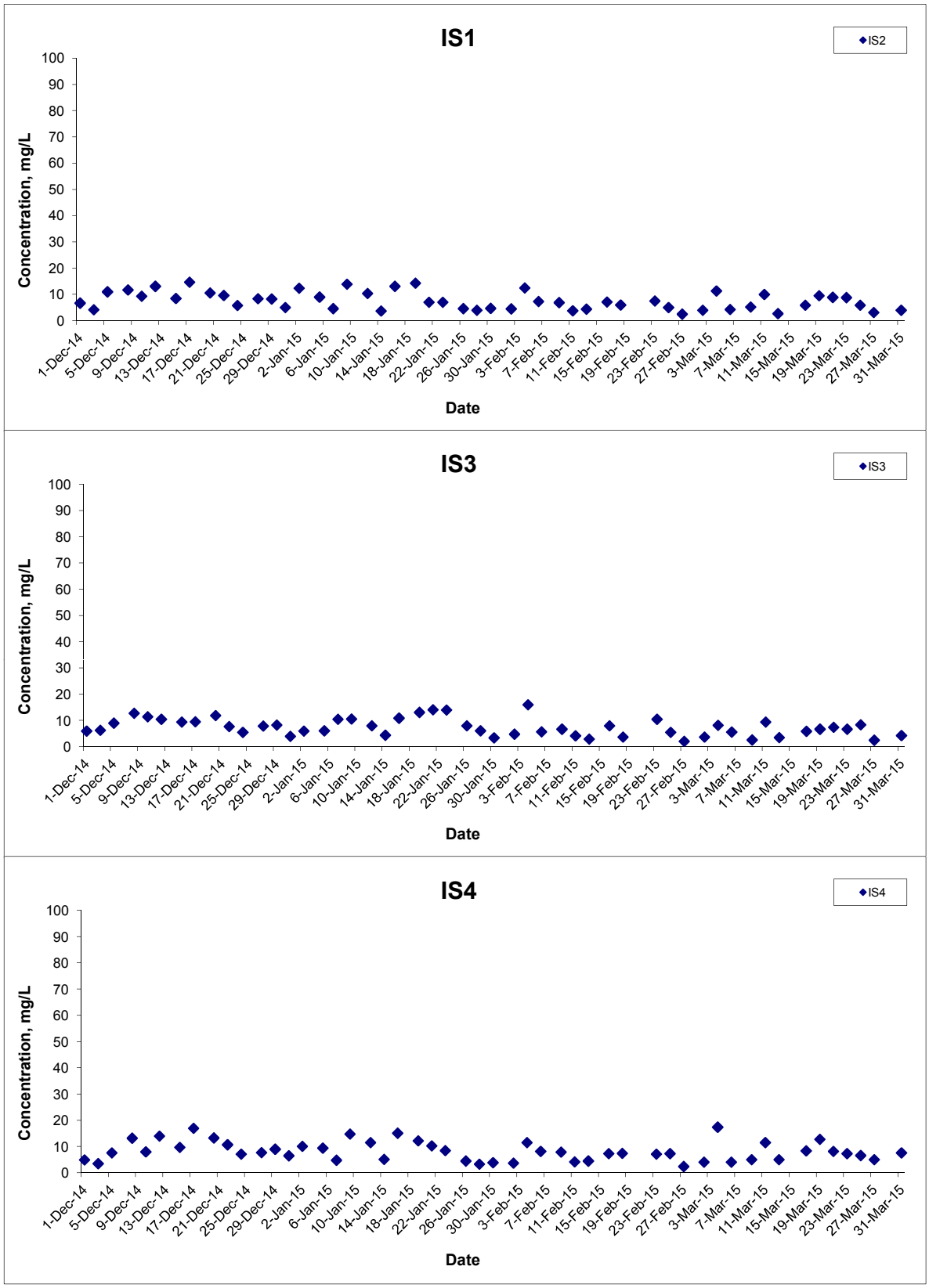
Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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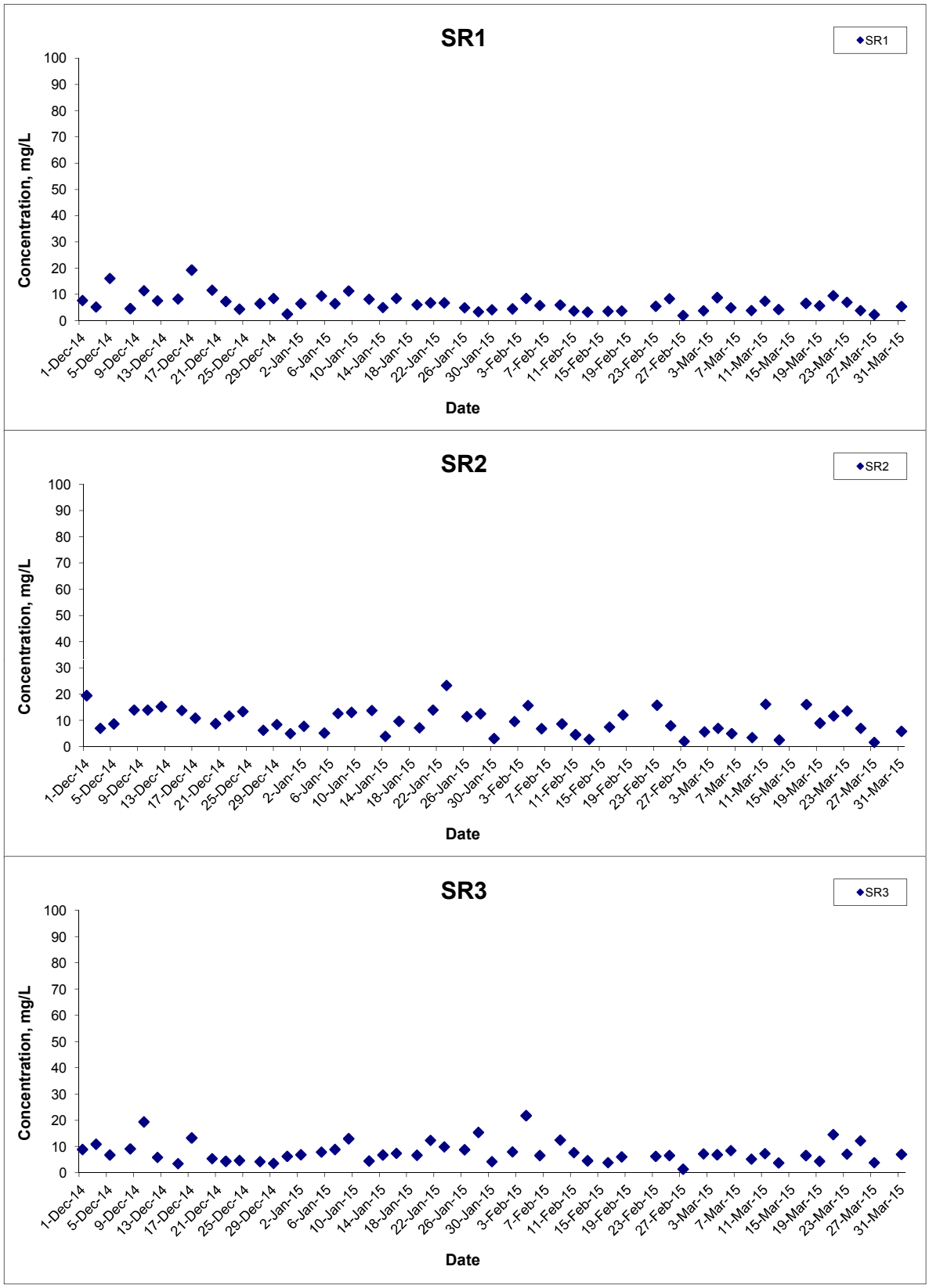

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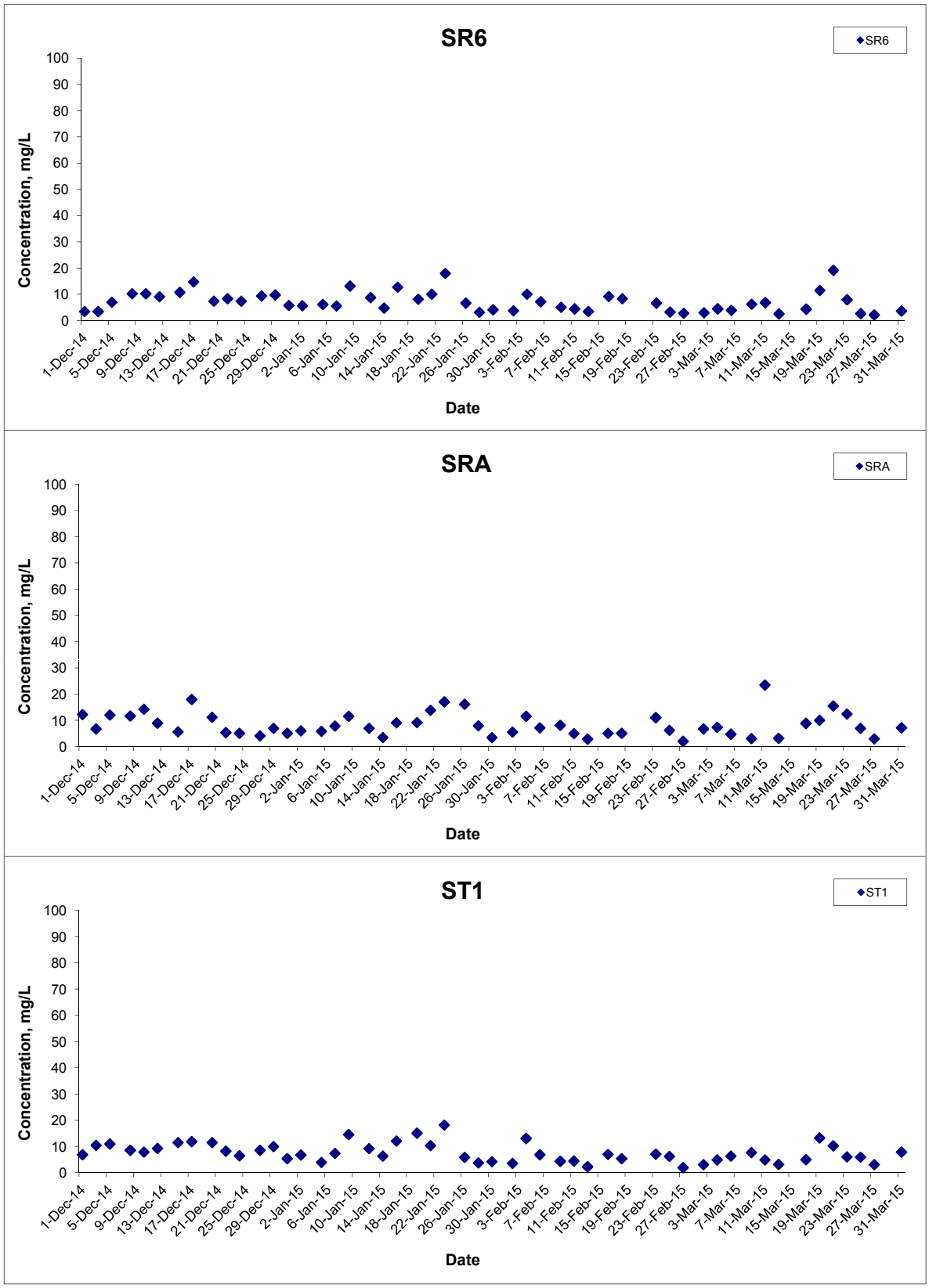

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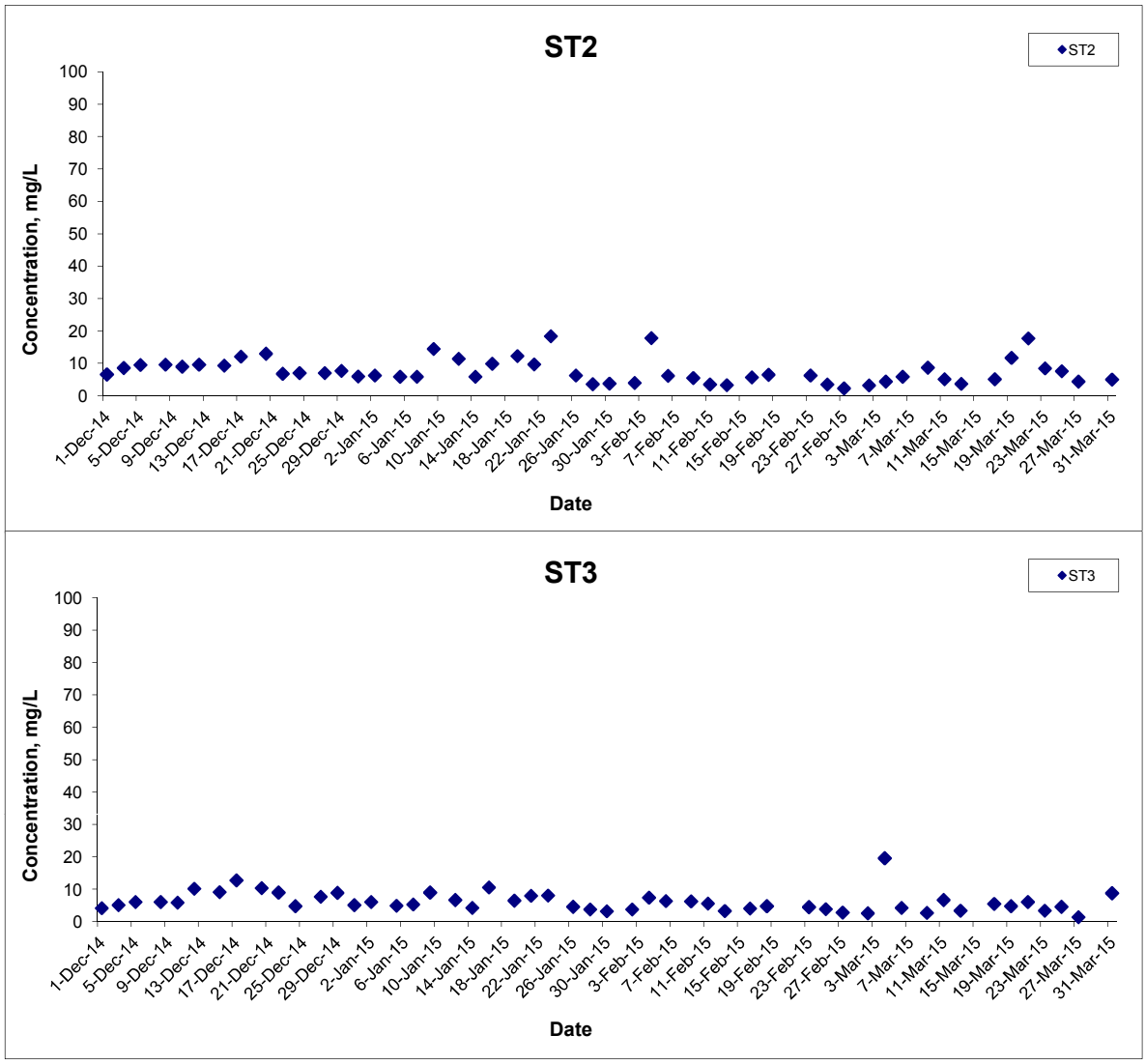
Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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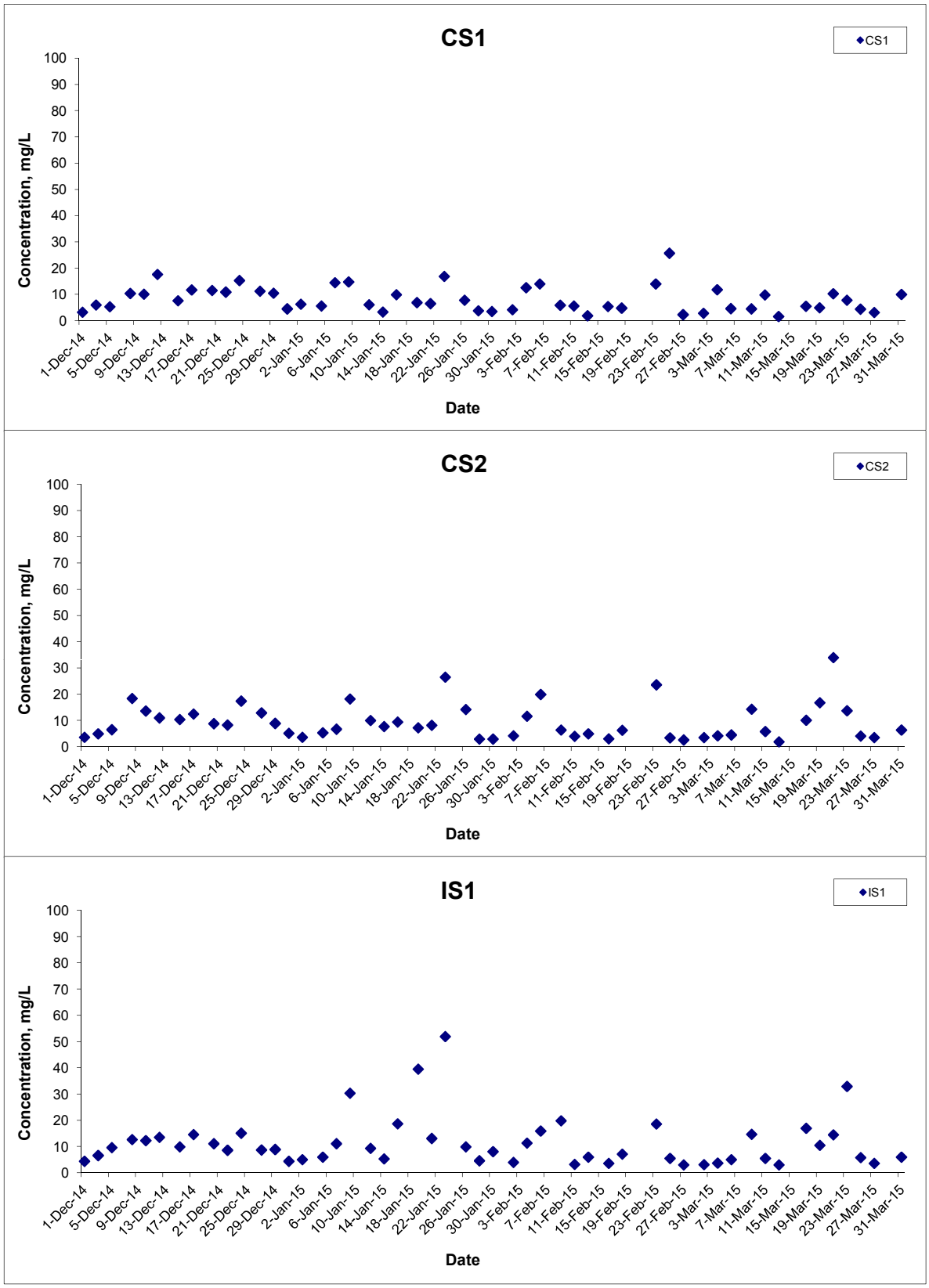
Suspended Solids (Depth-averaged) at Mid-Flood Tide



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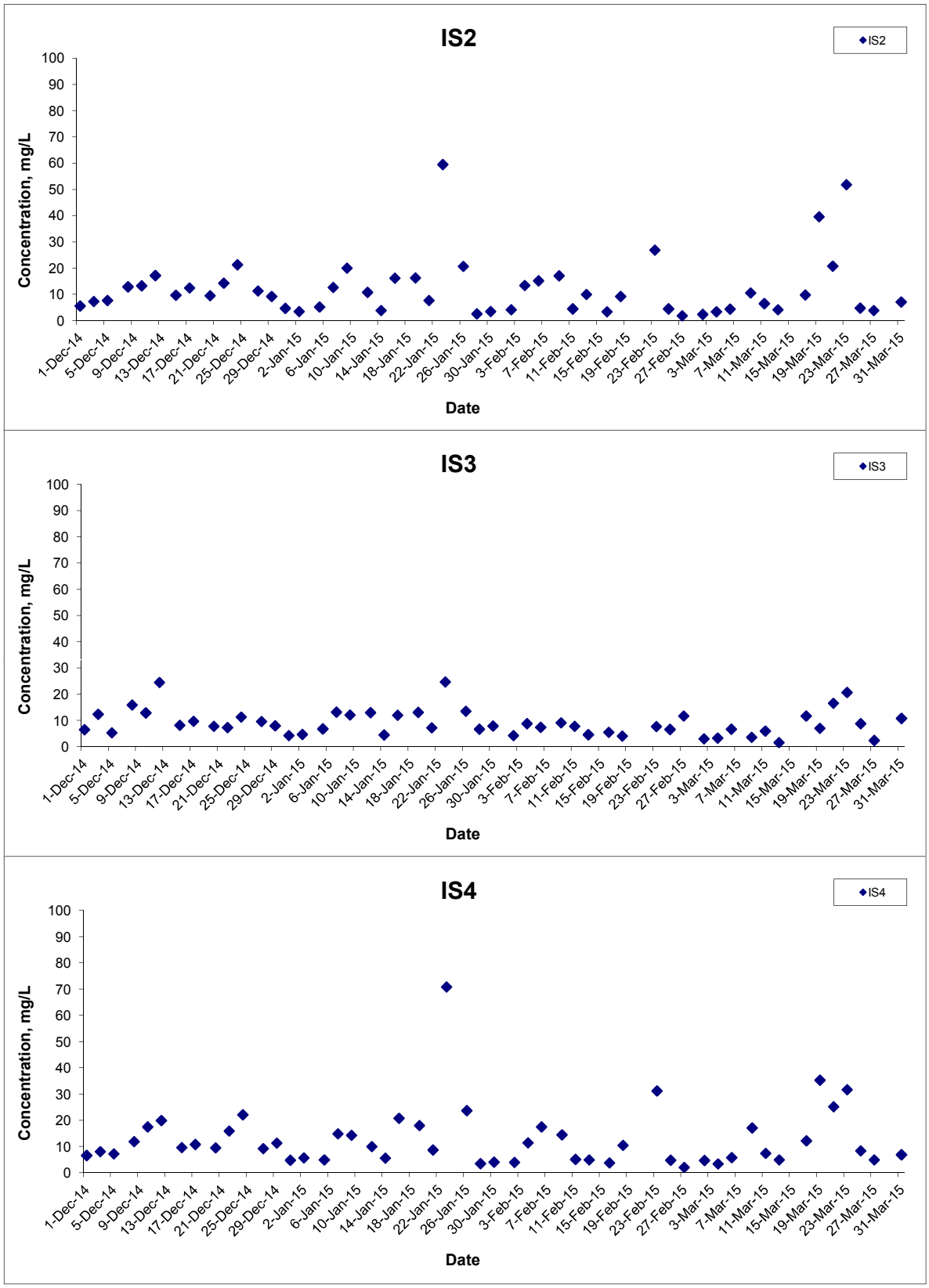

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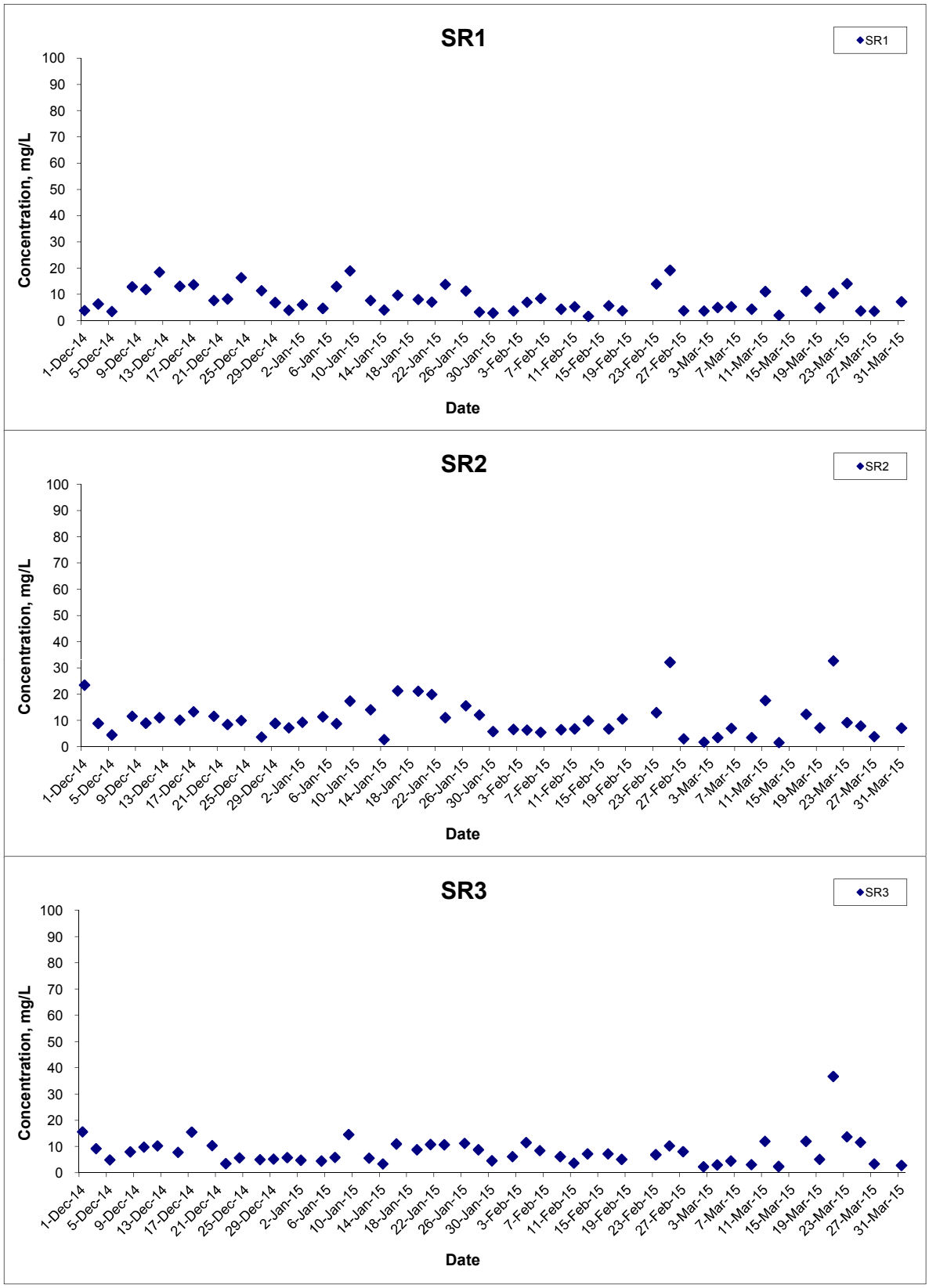
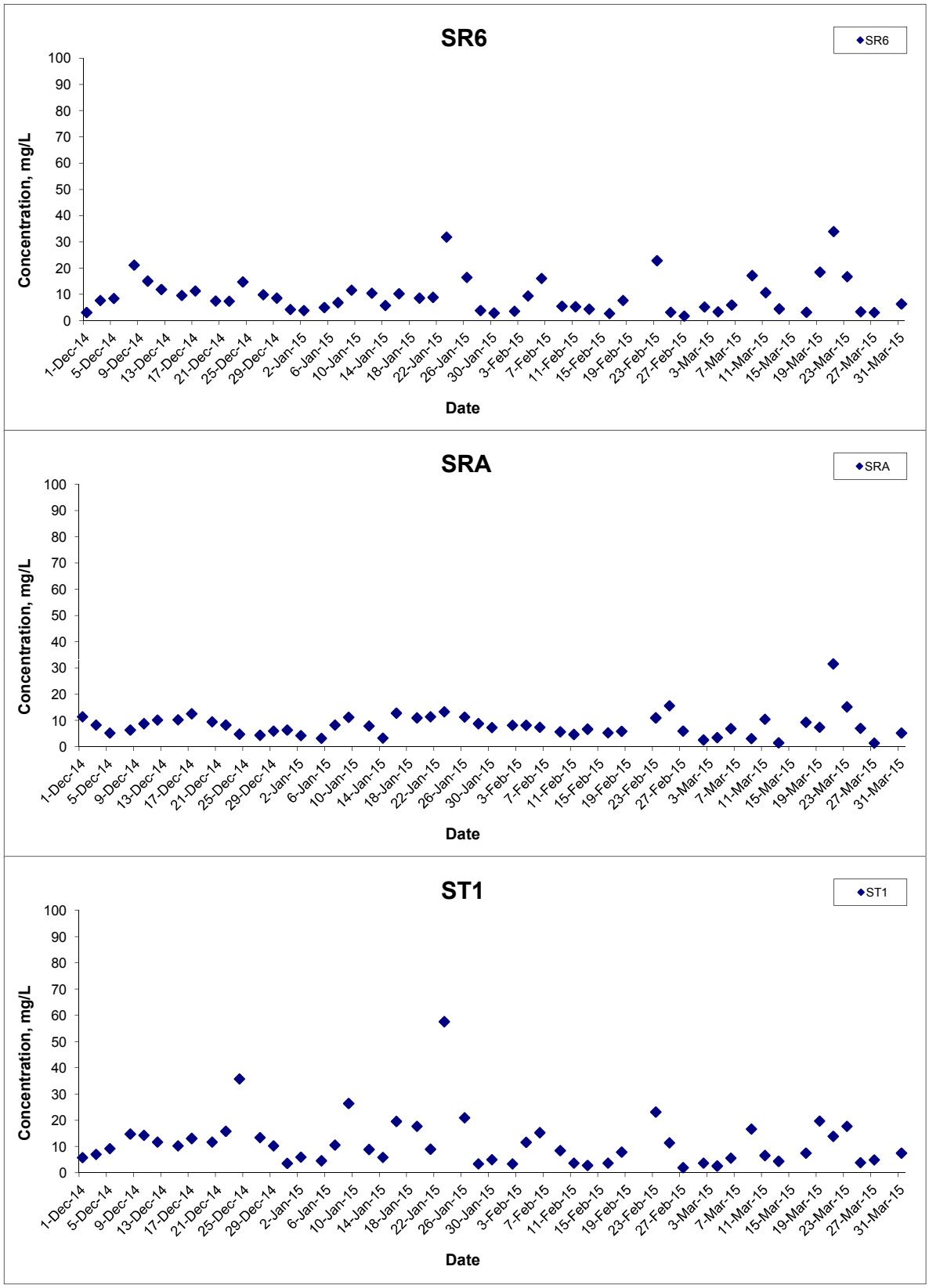
Suspended Solids (Depth-averaged) at Mid-Flood Tide



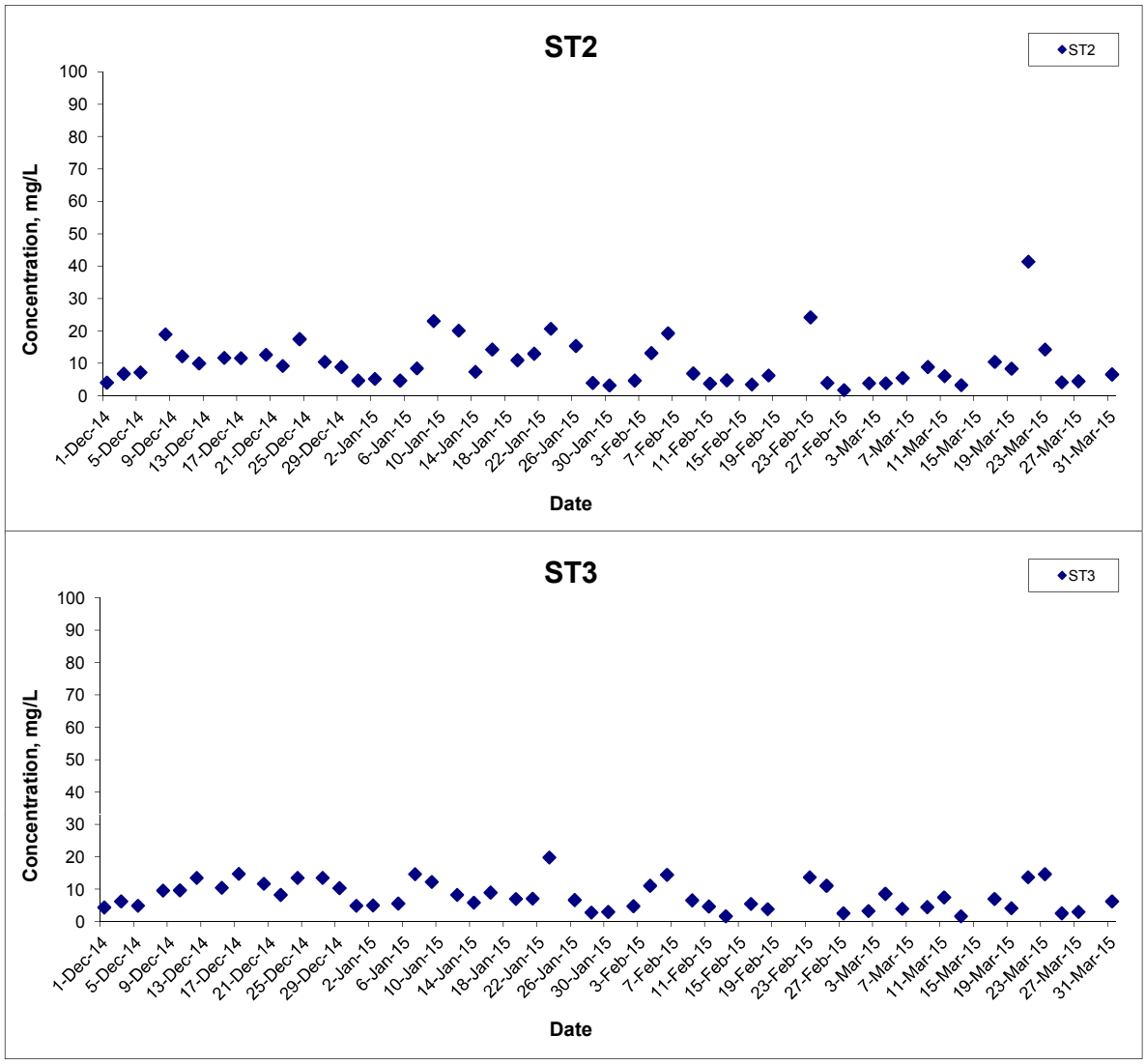
Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
		Date: Mar 15	Appendix: H	

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



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
		Date: Mar 15	Appendix: H	

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



Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA12014	CINOTECH
		Date Mar 15	Appendix H	

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

26th Monthly Progress Report (March 2015)

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

1 April 2015

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 26th monthly progress report under the HKLR09 construction phase dolphin monitoring programme, summarizing the results of the survey findings during the month of March 2015.

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^{o} and 90^{o} (in relation to the bow, which is defined as 0^{o}). 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 March 2015, two complete sets of systematic line-transect vessel surveys were conducted on the 19th 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 64.91 km of survey effort was collected, with 100% 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 42.07 km, while the effort on secondary lines (the lines connecting the primary lines) was 22.84 km.

3.1.3. During the monitoring surveys conducted in March 2015, seven groups of 37 Chinese White Dolphins were sighted. All sightings were made during on-effort search, and six of the seven on-effort sightings were made on primary lines (Appendix II). None of the dolphin groups was associated with any operating fishing vessel.

3.1.4. Distribution of the seven dolphin sightings made during March's surveys is shown in Figure 4. These sightings were mainly concentrated in the central portion of West Lantau survey area (i.e. near Kai Kung Shan and Peaked Hill, especially in the offshore waters; Figure 4). Notably, these dolphin groups were located far away from the HKLR09 alignment (Figure 4).

3.1.5. During the March'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 March'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: March 19th	9.7	106.4
	Set 2: March 27th	18.7	56.1

Table 3. Overall dolphin encounter rates (sightings per 100 km of survey effort) in March'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	14.3	10.8	80.8	57.0

3.1.6. The average group size of Chinese White Dolphins was 5.29 individuals per group during the March's surveys, which was much higher than the ones in previous months of monitoring surveys. This was mainly due to the one very large group of 20 dolphins sighted on March 19th, but the rest were mostly composed of 1-3 animals per group during this month of monitoring surveys.

3.2. Photo-identification Work

3.2.1. A total of 18 different individual Chinese White Dolphins were identified 21 times during the March's surveys. Only three of these individuals (i.e. NL188, WL171 and WL233) were sighted more than once (Appendices III and IV).

3.2.2. Notably, four of the 18 individuals (NL188, WL44, WL118 and WL171) were associated with their calves during their re-sighting in March'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. March-May 2015) 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.

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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.

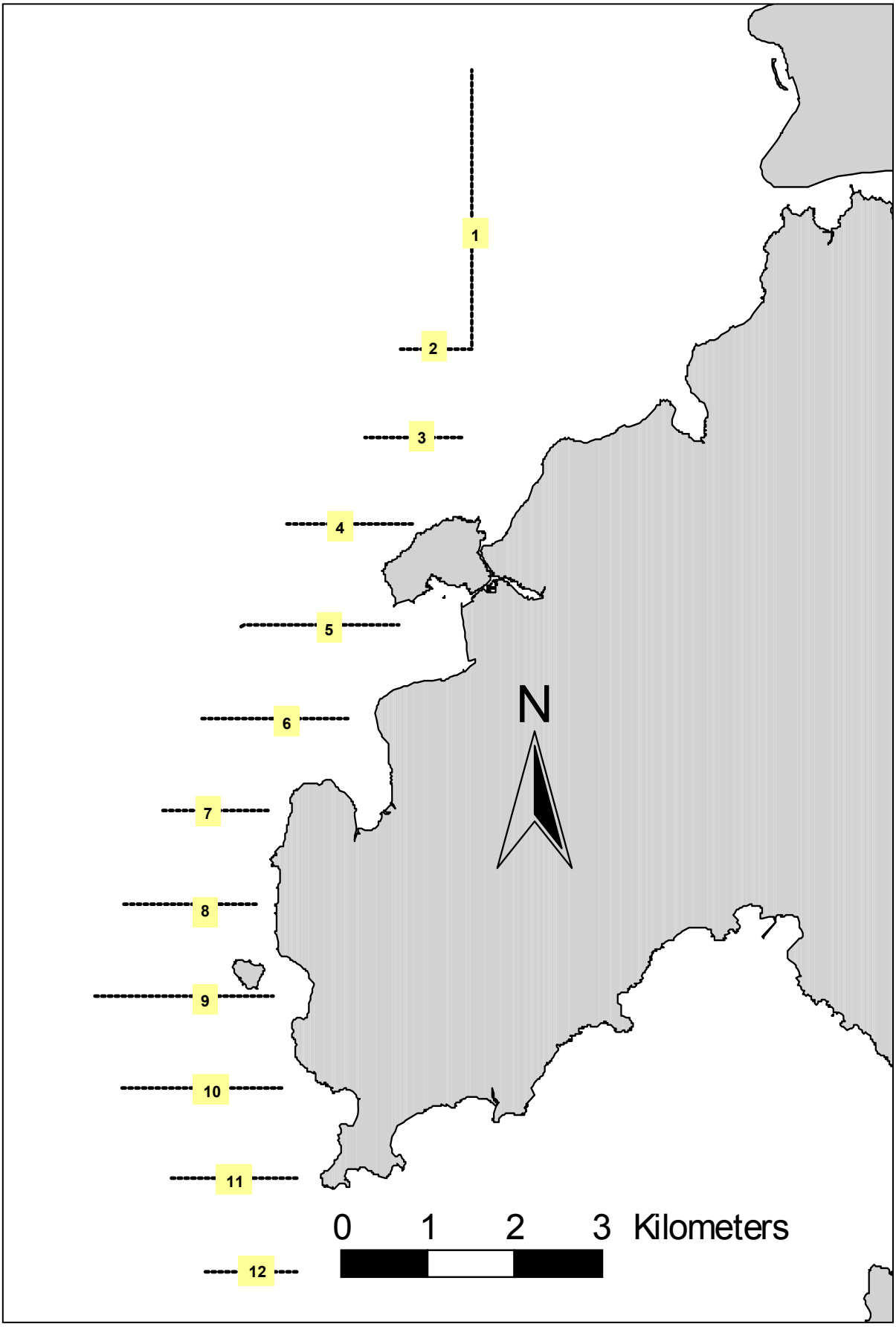


Figure 1. Transect Line Layout in West Lantau Survey Areas

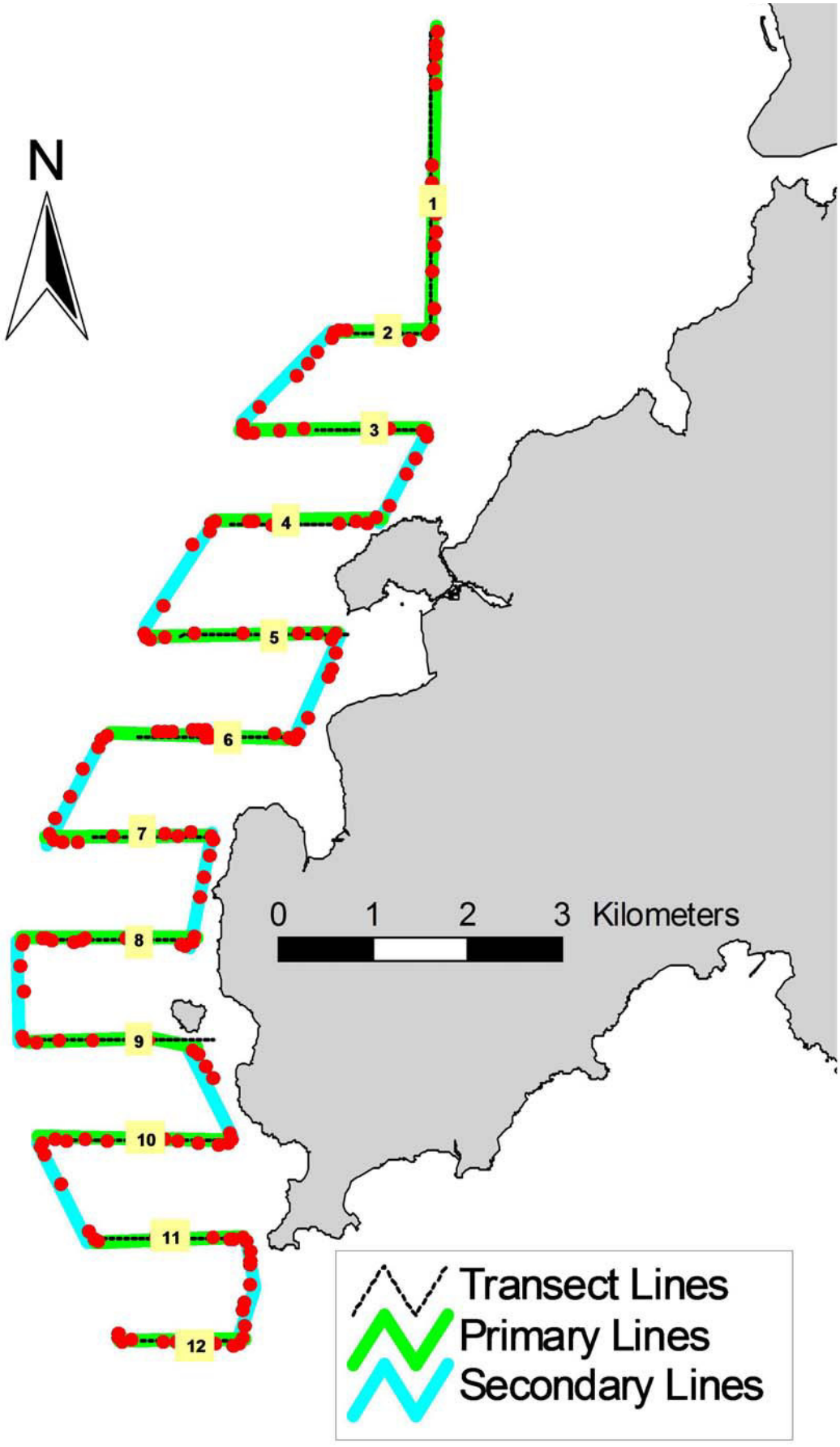


Figure 2. Survey Route on March 19th, 2015 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

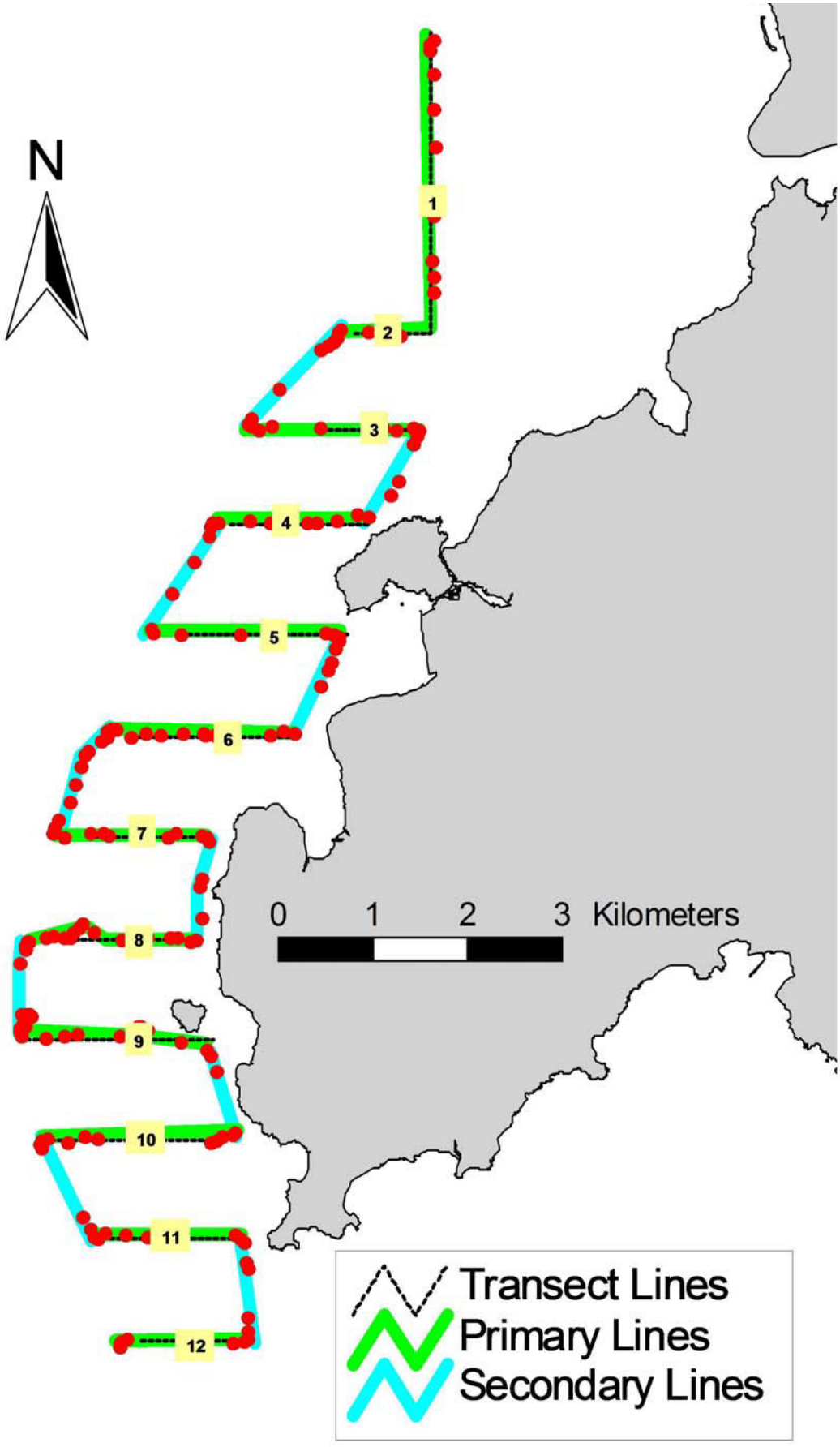


Figure 3. Survey Route on March 27th, 2015 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

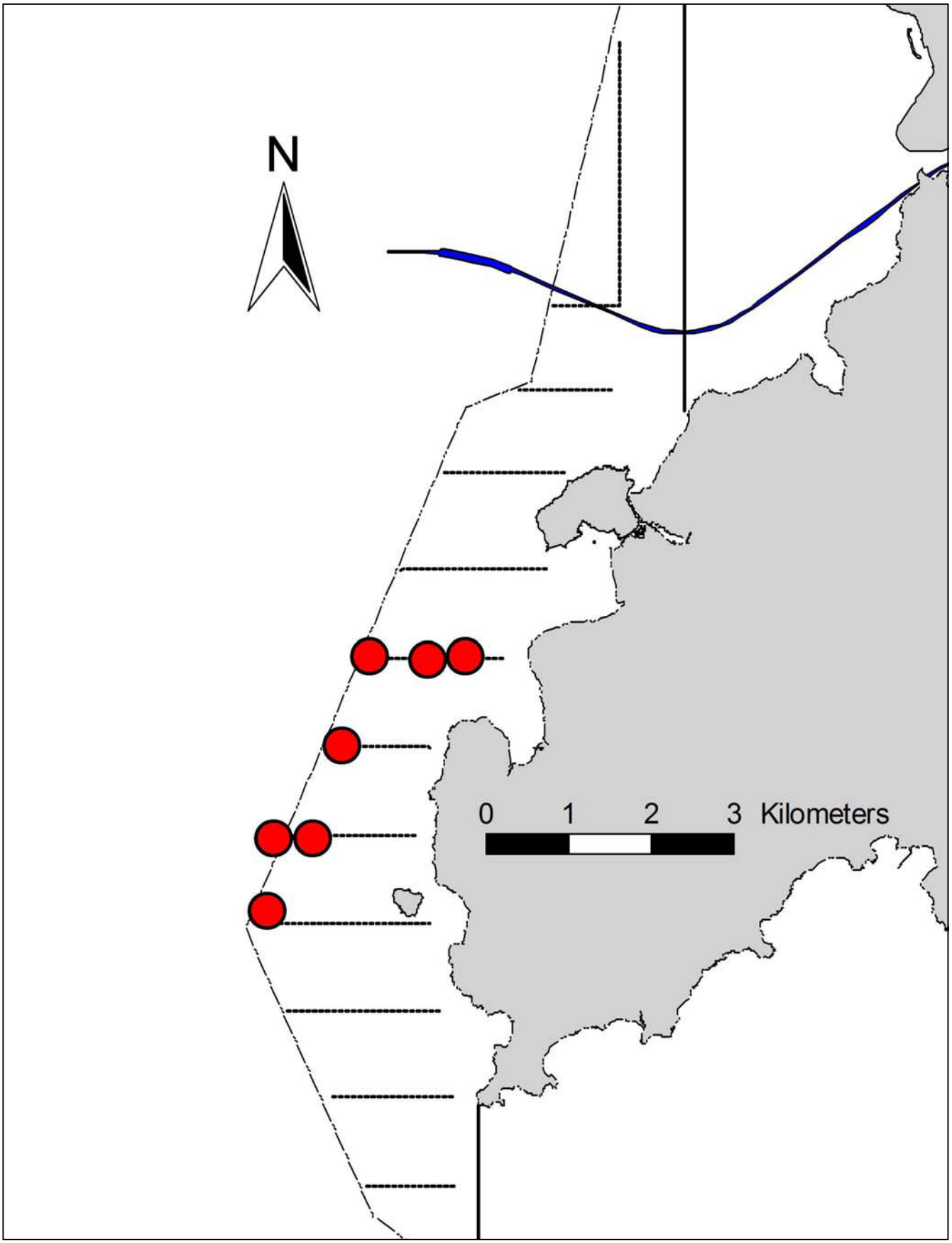


Figure 4. Distribution of Chinese White Dolphin Sighting during March 2015 HKLR09 Monitoring Surveys

Appendix I. HKLR09 Survey Effort Database (March 2015)

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

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
19-Mar-15	W LANTAU	1	1.61	SPRING	STANDARD31516	HKLR	P
19-Mar-15	W LANTAU	2	11.36	SPRING	STANDARD31516	HKLR	P
19-Mar-15	W LANTAU	3	7.7	SPRING	STANDARD31516	HKLR	P
19-Mar-15	W LANTAU	1	1.12	SPRING	STANDARD31516	HKLR	S
19-Mar-15	W LANTAU	2	6.08	SPRING	STANDARD31516	HKLR	S
19-Mar-15	W LANTAU	3	4.44	SPRING	STANDARD31516	HKLR	S
27-Mar-15	W LANTAU	2	20.06	SPRING	STANDARD31516	HKLR	P
27-Mar-15	W LANTAU	3	1.34	SPRING	STANDARD31516	HKLR	P
27-Mar-15	W LANTAU	2	11.2	SPRING	STANDARD31516	HKLR	S

Appendix II. HKLR09 Chinese White Dolphin Sighting Database (March 2015)

(Abberviations: 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 Lines)

DATE	STG #	TIME	HRD SZ	AREA	BEAU	PSD	EFFORT	TYPE	NORTHING	EASTING	SEASON	BOAT ASSOC.	P/S
19-Mar-15	1	1130	20	W LANTAU	2	590	ON	HKLR	811467	801880	SPRING	NONE	P
19-Mar-15	2	1218	2	W LANTAU	3	242	ON	HKLR	809411	800040	SPRING	NONE	P
27-Mar-15	1	1119	1	W LANTAU	2	97	ON	HKLR	811446	801416	SPRING	NONE	P
27-Mar-15	2	1128	2	W LANTAU	2	70	ON	HKLR	811469	800715	SPRING	NONE	P
27-Mar-15	3	1149	6	W LANTAU	2	178	ON	HKLR	810462	800393	SPRING	NONE	P
27-Mar-15	4	1218	3	W LANTAU	2	179	ON	HKLR	809412	799566	SPRING	NONE	P
27-Mar-15	5	1226	3	W LANTAU	2	94	ON	HKLR	808582	799481	SPRING	NONE	S

Appendix III. Individual dolphins identified during HKLR09 monitoring surveys in March 2015

ID#	DATE	STG#	AREA
CH38	27/03/15	5	W LANTAU
CH108	19/03/15	1	W LANTAU
NL188	27/03/15	2	W LANTAU
	27/03/15	3	W LANTAU
NL296	19/03/15	1	W LANTAU
SL44	19/03/15	1	W LANTAU
WL42	19/03/15	1	W LANTAU
WL44	19/03/15	1	W LANTAU
WL47	19/03/15	1	W LANTAU
WL61	19/03/15	1	W LANTAU
WL72	19/03/15	1	W LANTAU
WL92	19/03/15	1	W LANTAU
WL114	19/03/15	1	W LANTAU
WL118	19/03/15	1	W LANTAU
WL131	19/03/15	1	W LANTAU
WL142	19/03/15	1	W LANTAU
WL171	19/03/15	1	W LANTAU
	19/03/15	2	W LANTAU
WL191	19/03/15	1	W LANTAU
WL233	19/03/15	1	W LANTAU
	27/03/15	3	W LANTAU

Appendix IV. Photographs of Identified Individual Dolphins in March 2015 (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-Mar-2015	00:00	1.5	N
1-Mar-2015	01:00	1.2	NNE
1-Mar-2015	02:00	1.5	NNE
1-Mar-2015	03:00	1.3	N
1-Mar-2015	04:00	1.4	N
1-Mar-2015	05:00	1.8	N
1-Mar-2015	06:00	1.4	N
1-Mar-2015	07:00	1.8	N
1-Mar-2015	08:00	2.1	N
1-Mar-2015	09:00	2.9	N
1-Mar-2015	10:00	3	N
1-Mar-2015	11:00	3.2	NW
1-Mar-2015	12:00	4	W
1-Mar-2015	13:00	3.6	NE
1-Mar-2015	14:00	3.2	N
1-Mar-2015	15:00	3.1	NW
1-Mar-2015	16:00	2.4	ESE
1-Mar-2015	17:00	2.5	SW
1-Mar-2015	18:00	2.2	NE
1-Mar-2015	19:00	1.8	WNW
1-Mar-2015	20:00	1.6	N
1-Mar-2015	21:00	1.9	N
1-Mar-2015	22:00	2	WNW
1-Mar-2015	23:00	2.1	E
2-Mar-2015	00:00	1.8	ENE
2-Mar-2015	01:00	1.2	ENE
2-Mar-2015	02:00	1.9	ENE
2-Mar-2015	03:00	1.9	ENE
2-Mar-2015	04:00	1.8	WNW
2-Mar-2015	05:00	2	NE
2-Mar-2015	06:00	1.6	ESE
2-Mar-2015	07:00	1.9	NE
2-Mar-2015	08:00	1.9	NNE
2-Mar-2015	09:00	2.6	NNE
2-Mar-2015	10:00	3	NE
2-Mar-2015	11:00	3.2	NE
2-Mar-2015	12:00	3.1	NE
2-Mar-2015	13:00	3.2	ENE
2-Mar-2015	14:00	2.9	NE
2-Mar-2015	15:00	2.6	E
2-Mar-2015	16:00	2.4	NE
2-Mar-2015	17:00	2.5	NE
2-Mar-2015	18:00	1.7	N
2-Mar-2015	19:00	1.6	NNE
2-Mar-2015	20:00	1.6	ENE
2-Mar-2015	21:00	2.1	E
2-Mar-2015	22:00	2.5	ENE
2-Mar-2015	23:00	2.1	ENE
3-Mar-2015	00:00	1.7	ENE
3-Mar-2015	01:00	1.5	E
3-Mar-2015	02:00	1.3	E
3-Mar-2015	03:00	1.2	WSW
3-Mar-2015	04:00	1	WSW
3-Mar-2015	05:00	1.2	S

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
3-Mar-2015	06:00	1.3	ESE
3-Mar-2015	07:00	1.1	ESE
3-Mar-2015	08:00	1.2	ESE
3-Mar-2015	09:00	1.9	WSW
3-Mar-2015	10:00	1.9	NNE
3-Mar-2015	11:00	2.4	NNE
3-Mar-2015	12:00	2.2	ENE
3-Mar-2015	13:00	2.6	ENE
3-Mar-2015	14:00	2.8	ENE
3-Mar-2015	15:00	3	ENE
3-Mar-2015	16:00	2.9	N
3-Mar-2015	17:00	2.8	NNE
3-Mar-2015	18:00	2.4	NE
3-Mar-2015	19:00	2.1	NE
3-Mar-2015	20:00	1.7	ENE
3-Mar-2015	21:00	1.5	ENE
3-Mar-2015	22:00	1.2	ENE
3-Mar-2015	23:00	1.3	ENE
4-Mar-2015	00:00	1.3	ENE
4-Mar-2015	01:00	2.2	NNE
4-Mar-2015	02:00	1.9	NNE
4-Mar-2015	03:00	2.4	NNE
4-Mar-2015	04:00	2.1	NE
4-Mar-2015	05:00	2.4	NE
4-Mar-2015	06:00	2	NE
4-Mar-2015	07:00	2.2	NE
4-Mar-2015	08:00	2.2	NE
4-Mar-2015	09:00	2.6	ENE
4-Mar-2015	10:00	3.1	ENE
4-Mar-2015	11:00	3.2	NE
4-Mar-2015	12:00	3.3	NE
4-Mar-2015	13:00	3.2	NNE
4-Mar-2015	14:00	3.1	NNE
4-Mar-2015	15:00	3.1	ESE
4-Mar-2015	16:00	3.2	ENE
4-Mar-2015	17:00	3	ENE
4-Mar-2015	18:00	3	NNE
4-Mar-2015	19:00	2.7	NNE
4-Mar-2015	20:00	1.9	NNE
4-Mar-2015	21:00	2.1	NNE
4-Mar-2015	22:00	2.4	NNE
4-Mar-2015	23:00	2.2	NNE
5-Mar-2015	00:00	2.5	NNE
5-Mar-2015	01:00	2.8	NNE
5-Mar-2015	02:00	2.4	NNE
5-Mar-2015	03:00	2.6	NE
5-Mar-2015	04:00	2.4	NE
5-Mar-2015	05:00	2.7	NE
5-Mar-2015	06:00	2.5	NE
5-Mar-2015	07:00	2.3	NNE
5-Mar-2015	08:00	2.7	NNE
5-Mar-2015	09:00	3	NNE
5-Mar-2015	10:00	3.1	NNE
5-Mar-2015	11:00	3.8	NNE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
5-Mar-2015	12:00	3.5	NNE
5-Mar-2015	13:00	3.5	NNE
5-Mar-2015	14:00	3.4	N
5-Mar-2015	15:00	4.1	NNE
5-Mar-2015	16:00	3.4	N
5-Mar-2015	17:00	2.9	NNE
5-Mar-2015	18:00	2.8	NNE
5-Mar-2015	19:00	2.4	NNE
5-Mar-2015	20:00	2.2	NE
5-Mar-2015	21:00	1.7	NE
5-Mar-2015	22:00	1.6	NNE
5-Mar-2015	23:00	1.6	NNE
6-Mar-2015	00:00	1.5	NNE
6-Mar-2015	01:00	1.3	NNE
6-Mar-2015	02:00	1.3	N
6-Mar-2015	03:00	1.6	NNE
6-Mar-2015	04:00	1.3	NNE
6-Mar-2015	05:00	1	NE
6-Mar-2015	06:00	1.3	NNE
6-Mar-2015	07:00	1.2	NNE
6-Mar-2015	08:00	1.2	NE
6-Mar-2015	09:00	2.3	NE
6-Mar-2015	10:00	2.1	NNE
6-Mar-2015	11:00	2.2	NNE
6-Mar-2015	12:00	2.3	NE
6-Mar-2015	13:00	2.5	NNE
6-Mar-2015	14:00	2.6	NE
6-Mar-2015	15:00	2.7	NNE
6-Mar-2015	16:00	3	NNE
6-Mar-2015	17:00	2.4	NE
6-Mar-2015	18:00	1.8	NE
6-Mar-2015	19:00	1.7	ENE
6-Mar-2015	20:00	1.4	NNE
6-Mar-2015	21:00	1.1	NE
6-Mar-2015	22:00	1.5	NNE
6-Mar-2015	23:00	1.3	E
7-Mar-2015	00:00	1.2	E
7-Mar-2015	01:00	1.2	ENE
7-Mar-2015	02:00	1.1	ENE
7-Mar-2015	03:00	1.2	NNE
7-Mar-2015	04:00	0.9	ENE
7-Mar-2015	05:00	0.9	NE
7-Mar-2015	06:00	1	ENE
7-Mar-2015	07:00	0.9	ENE
7-Mar-2015	08:00	1	E
7-Mar-2015	09:00	1.5	NE
7-Mar-2015	10:00	1.6	NE
7-Mar-2015	11:00	1.9	NE
7-Mar-2015	12:00	2.5	NNE
7-Mar-2015	13:00	2.4	NNE
7-Mar-2015	14:00	2.7	NNE
7-Mar-2015	15:00	2.4	NE
7-Mar-2015	16:00	2	NE
7-Mar-2015	17:00	1.3	E

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
7-Mar-2015	18:00	1.4	NE
7-Mar-2015	19:00	1.4	NE
7-Mar-2015	20:00	1.4	NNE
7-Mar-2015	21:00	1.6	NE
7-Mar-2015	22:00	2.3	NNE
7-Mar-2015	23:00	2	NNE
8-Mar-2015	00:00	1.4	NNE
8-Mar-2015	01:00	1.5	NNE
8-Mar-2015	02:00	1.4	NNE
8-Mar-2015	03:00	1.5	NNE
8-Mar-2015	04:00	1.3	NNE
8-Mar-2015	05:00	1	ENE
8-Mar-2015	06:00	0.9	E
8-Mar-2015	07:00	0.7	ENE
8-Mar-2015	08:00	1.2	NE
8-Mar-2015	09:00	1.6	ENE
8-Mar-2015	10:00	2.3	NE
8-Mar-2015	11:00	1.9	ENE
8-Mar-2015	12:00	2	ENE
8-Mar-2015	13:00	3.1	NE
8-Mar-2015	14:00	2.9	NNE
8-Mar-2015	15:00	2.6	NE
8-Mar-2015	16:00	2.5	NNE
8-Mar-2015	17:00	2	ENE
8-Mar-2015	18:00	2.2	E
8-Mar-2015	19:00	2	E
8-Mar-2015	20:00	1.5	E
8-Mar-2015	21:00	0.9	E
8-Mar-2015	22:00	0.9	E
8-Mar-2015	23:00	0.8	NNE
9-Mar-2015	00:00	0.7	NNE
9-Mar-2015	01:00	1	NE
9-Mar-2015	02:00	0.9	NE
9-Mar-2015	03:00	1.3	ENE
9-Mar-2015	04:00	1.3	ENE
9-Mar-2015	05:00	1	ENE
9-Mar-2015	06:00	1.2	E
9-Mar-2015	07:00	1.5	E
9-Mar-2015	08:00	1.7	NW
9-Mar-2015	09:00	1.4	WNW
9-Mar-2015	10:00	2.2	E
9-Mar-2015	11:00	2.5	NNE
9-Mar-2015	12:00	2.4	ENE
9-Mar-2015	13:00	2.2	WSW
9-Mar-2015	14:00	2.1	WNW
9-Mar-2015	15:00	2.2	W
9-Mar-2015	16:00	2.5	WNW
9-Mar-2015	17:00	2.4	WNW
9-Mar-2015	18:00	1.9	SSW
9-Mar-2015	19:00	1.3	SSW
9-Mar-2015	20:00	1.9	NNE
9-Mar-2015	21:00	1.7	ENE
9-Mar-2015	22:00	2	ENE
9-Mar-2015	23:00	1.9	N

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
10-Mar-2015	00:00	1.9	NE
10-Mar-2015	01:00	1.9	NNW
10-Mar-2015	02:00	1.8	ENE
10-Mar-2015	03:00	2.3	E
10-Mar-2015	04:00	2.5	N
10-Mar-2015	05:00	2	NE
10-Mar-2015	06:00	1.7	NNE
10-Mar-2015	07:00	1.7	SSE
10-Mar-2015	08:00	2.1	ENE
10-Mar-2015	09:00	3	NNE
10-Mar-2015	10:00	3.7	NE
10-Mar-2015	11:00	3.3	N
10-Mar-2015	12:00	3.6	SSW
10-Mar-2015	13:00	3.6	WSW
10-Mar-2015	14:00	3.3	SW
10-Mar-2015	15:00	3.1	SW
10-Mar-2015	16:00	3.3	W
10-Mar-2015	17:00	2.5	WSW
10-Mar-2015	18:00	2.5	W
10-Mar-2015	19:00	1.9	W
10-Mar-2015	20:00	1.9	SE
10-Mar-2015	21:00	1.5	NNW
10-Mar-2015	22:00	1.5	WSW
10-Mar-2015	23:00	1.2	WSW
11-Mar-2015	00:00	1.6	SW
11-Mar-2015	01:00	1.3	SSW
11-Mar-2015	02:00	1.6	SW
11-Mar-2015	03:00	1.2	SSW
11-Mar-2015	04:00	1.2	WSW
11-Mar-2015	05:00	0.3	SW
11-Mar-2015	06:00	0.5	N
11-Mar-2015	07:00	0.5	ENE
11-Mar-2015	08:00	0.9	SW
11-Mar-2015	09:00	1.4	SW
11-Mar-2015	10:00	1.5	SW
11-Mar-2015	11:00	1.7	ENE
11-Mar-2015	12:00	1.6	ENE
11-Mar-2015	13:00	1.5	ENE
11-Mar-2015	14:00	1.3	ENE
11-Mar-2015	15:00	1.4	NE
11-Mar-2015	16:00	1.2	E
11-Mar-2015	17:00	0.9	ENE
11-Mar-2015	18:00	0.4	ESE
11-Mar-2015	19:00	0.4	ENE
11-Mar-2015	20:00	0.4	ENE
11-Mar-2015	21:00	0.6	ENE
11-Mar-2015	22:00	0.7	SW
11-Mar-2015	23:00	0.9	SW
12-Mar-2015	00:00	0.8	SSW
12-Mar-2015	01:00	0.7	ENE
12-Mar-2015	02:00	0.7	S
12-Mar-2015	03:00	0.4	NE
12-Mar-2015	04:00	0.4	NE
12-Mar-2015	05:00	0.5	NE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
12-Mar-2015	06:00	0.8	NE
12-Mar-2015	07:00	0.5	NE
12-Mar-2015	08:00	0.6	ENE
12-Mar-2015	09:00	1.1	ENE
12-Mar-2015	10:00	1.4	ENE
12-Mar-2015	11:00	1.9	NE
12-Mar-2015	12:00	2.4	NE
12-Mar-2015	13:00	1.9	ENE
12-Mar-2015	14:00	1.7	NE
12-Mar-2015	15:00	1.6	ENE
12-Mar-2015	16:00	1.8	ENE
12-Mar-2015	17:00	1.7	ENE
12-Mar-2015	18:00	1.6	NE
12-Mar-2015	19:00	1.2	ENE
12-Mar-2015	20:00	0.8	ENE
12-Mar-2015	21:00	0.7	NE
12-Mar-2015	22:00	1.2	NE
12-Mar-2015	23:00	1.1	NE
13-Mar-2015	00:00	1	NE
13-Mar-2015	01:00	0.7	NE
13-Mar-2015	02:00	1	NE
13-Mar-2015	03:00	0.5	ENE
13-Mar-2015	04:00	1	NE
13-Mar-2015	05:00	1.2	NE
13-Mar-2015	06:00	0.8	NE
13-Mar-2015	07:00	1.1	ENE
13-Mar-2015	08:00	1	ENE
13-Mar-2015	09:00	1.4	ENE
13-Mar-2015	10:00	2	NE
13-Mar-2015	11:00	2.5	NE
13-Mar-2015	12:00	1.9	NE
13-Mar-2015	13:00	2	NE
13-Mar-2015	14:00	2.1	NE
13-Mar-2015	15:00	1.8	NE
13-Mar-2015	16:00	1.7	NE
13-Mar-2015	17:00	1.9	NE
13-Mar-2015	18:00	1.5	NE
13-Mar-2015	19:00	1.6	NE
13-Mar-2015	20:00	1.1	ENE
13-Mar-2015	21:00	0.9	NE
13-Mar-2015	22:00	0.8	ENE
13-Mar-2015	23:00	0.9	NNE
14-Mar-2015	00:00	0.7	NE
14-Mar-2015	01:00	0.6	NE
14-Mar-2015	02:00	0.8	NE
14-Mar-2015	03:00	1.1	NE
14-Mar-2015	04:00	1	NE
14-Mar-2015	05:00	1.1	ENE
14-Mar-2015	06:00	1.3	ENE
14-Mar-2015	07:00	1.4	NE
14-Mar-2015	08:00	2.2	ENE
14-Mar-2015	09:00	2.6	ENE
14-Mar-2015	10:00	2.9	ENE
14-Mar-2015	11:00	2.8	NE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
14-Mar-2015	12:00	2.9	N
14-Mar-2015	13:00	2.9	N
14-Mar-2015	14:00	1.9	N
14-Mar-2015	15:00	1.8	N
14-Mar-2015	16:00	2.1	W
14-Mar-2015	17:00	1.8	WSW
14-Mar-2015	18:00	1.3	W
14-Mar-2015	19:00	1.2	SSW
14-Mar-2015	20:00	1.1	SW
14-Mar-2015	21:00	1	SW
14-Mar-2015	22:00	1	SW
14-Mar-2015	23:00	1.4	SW
15-Mar-2015	00:00	1.3	SW
15-Mar-2015	01:00	1.7	SSW
15-Mar-2015	02:00	1.5	SSW
15-Mar-2015	03:00	1.2	SW
15-Mar-2015	04:00	1.1	S
15-Mar-2015	05:00	1.2	WSW
15-Mar-2015	06:00	1.2	SW
15-Mar-2015	07:00	1.4	SW
15-Mar-2015	08:00	1.3	SW
15-Mar-2015	09:00	1.4	SSW
15-Mar-2015	10:00	1.6	SW
15-Mar-2015	11:00	1.9	WNW
15-Mar-2015	12:00	1.9	NE
15-Mar-2015	13:00	2.3	ENE
15-Mar-2015	14:00	2.4	ENE
15-Mar-2015	15:00	2.2	SW
15-Mar-2015	16:00	2.3	SW
15-Mar-2015	17:00	1.9	WSW
15-Mar-2015	18:00	2	SW
15-Mar-2015	19:00	1.9	SSW
15-Mar-2015	20:00	2.1	SSW
15-Mar-2015	21:00	2	SSW
15-Mar-2015	22:00	1.9	SSW
15-Mar-2015	23:00	2.1	W
16-Mar-2015	00:00	2.2	W
16-Mar-2015	01:00	2.2	ENE
16-Mar-2015	02:00	1.6	NE
16-Mar-2015	03:00	1.7	SSW
16-Mar-2015	04:00	1.6	WNW
16-Mar-2015	05:00	1.5	WNW
16-Mar-2015	06:00	1.4	WNW
16-Mar-2015	07:00	1.4	WNW
16-Mar-2015	08:00	1.6	WNW
16-Mar-2015	09:00	1.7	SW
16-Mar-2015	10:00	1.8	SSW
16-Mar-2015	11:00	2.2	WNW
16-Mar-2015	12:00	2.3	W
16-Mar-2015	13:00	2.6	WSW
16-Mar-2015	14:00	2.4	WSW
16-Mar-2015	15:00	2.4	WSW
16-Mar-2015	16:00	2.3	WSW
16-Mar-2015	17:00	1.8	WSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
16-Mar-2015	18:00	1.3	WSW
16-Mar-2015	19:00	1.3	SW
16-Mar-2015	20:00	1.2	S
16-Mar-2015	21:00	1.3	ENE
16-Mar-2015	22:00	1.6	S
16-Mar-2015	23:00	1.2	SW
17-Mar-2015	00:00	1.1	SW
17-Mar-2015	01:00	0.9	SW
17-Mar-2015	02:00	0.7	SW
17-Mar-2015	03:00	0.5	SSE
17-Mar-2015	04:00	0.3	SSE
17-Mar-2015	05:00	0.2	SSE
17-Mar-2015	06:00	0.1	SW
17-Mar-2015	07:00	0.2	WSW
17-Mar-2015	08:00	0.3	SW
17-Mar-2015	09:00	1.1	ENE
17-Mar-2015	10:00	1	NE
17-Mar-2015	11:00	2	WSW
17-Mar-2015	12:00	2.3	WSW
17-Mar-2015	13:00	2.2	WSW
17-Mar-2015	14:00	2.7	WSW
17-Mar-2015	15:00	2.4	W
17-Mar-2015	16:00	2.1	W
17-Mar-2015	17:00	1.6	SE
17-Mar-2015	18:00	1.2	NE
17-Mar-2015	19:00	1.1	SW
17-Mar-2015	20:00	1	SW
17-Mar-2015	21:00	0.9	SW
17-Mar-2015	22:00	0.9	SW
17-Mar-2015	23:00	0.4	SSW
18-Mar-2015	00:00	0.5	SSE
18-Mar-2015	01:00	1.1	SSE
18-Mar-2015	02:00	1.3	SSE
18-Mar-2015	03:00	1.8	NNE
18-Mar-2015	04:00	1.5	SW
18-Mar-2015	05:00	1.2	SW
18-Mar-2015	06:00	1	SW
18-Mar-2015	07:00	1.3	SW
18-Mar-2015	08:00	1.7	SW
18-Mar-2015	09:00	2.2	SSW
18-Mar-2015	10:00	2.8	W
18-Mar-2015	11:00	2.9	SSW
18-Mar-2015	12:00	2.9	SW
18-Mar-2015	13:00	2.9	SW
18-Mar-2015	14:00	2.9	S
18-Mar-2015	15:00	3.2	SE
18-Mar-2015	16:00	2.8	SSE
18-Mar-2015	17:00	2.7	ENE
18-Mar-2015	18:00	2.6	ENE
18-Mar-2015	19:00	2.4	WSW
18-Mar-2015	20:00	2	E
18-Mar-2015	21:00	2	E
18-Mar-2015	22:00	2.5	E
18-Mar-2015	23:00	2.2	E

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
19-Mar-2015	00:00	2.4	E
19-Mar-2015	01:00	2.3	SSW
19-Mar-2015	02:00	2.4	SSW
19-Mar-2015	03:00	2	NE
19-Mar-2015	04:00	2.3	NE
19-Mar-2015	05:00	2.1	NE
19-Mar-2015	06:00	2.6	NE
19-Mar-2015	07:00	2	SW
19-Mar-2015	08:00	2.1	SSW
19-Mar-2015	09:00	2.6	W
19-Mar-2015	10:00	2.7	SW
19-Mar-2015	11:00	2.9	E
19-Mar-2015	12:00	2.9	E
19-Mar-2015	13:00	2.9	SW
19-Mar-2015	14:00	3.1	NNE
19-Mar-2015	15:00	2.8	WSW
19-Mar-2015	16:00	2.2	SSE
19-Mar-2015	17:00	1.9	E
19-Mar-2015	18:00	2	E
19-Mar-2015	19:00	1.5	W
19-Mar-2015	20:00	1.4	W
19-Mar-2015	21:00	1.6	W
19-Mar-2015	22:00	1.8	W
19-Mar-2015	23:00	1.6	W
20-Mar-2015	00:00	1.6	N
20-Mar-2015	01:00	1.5	N
20-Mar-2015	02:00	1.6	NE
20-Mar-2015	03:00	1.6	E
20-Mar-2015	04:00	1.3	NE
20-Mar-2015	05:00	1.4	SSW
20-Mar-2015	06:00	1.2	SSW
20-Mar-2015	07:00	1.4	SW
20-Mar-2015	08:00	1.2	WSW
20-Mar-2015	09:00	1.5	SSW
20-Mar-2015	10:00	1.6	WNW
20-Mar-2015	11:00	1.9	SW
20-Mar-2015	12:00	2.2	SW
20-Mar-2015	13:00	2.4	SW
20-Mar-2015	14:00	2.3	SW
20-Mar-2015	15:00	2.2	W
20-Mar-2015	16:00	2.3	W
20-Mar-2015	17:00	2.1	S
20-Mar-2015	18:00	1.6	SW
20-Mar-2015	19:00	1.1	S
20-Mar-2015	20:00	0.9	SW
20-Mar-2015	21:00	1.1	S
20-Mar-2015	22:00	0.9	SSW
20-Mar-2015	23:00	0.6	SW
21-Mar-2015	00:00	0.5	NW
21-Mar-2015	01:00	0.7	ENE
21-Mar-2015	02:00	0.6	SW
21-Mar-2015	03:00	0.5	SSE
21-Mar-2015	04:00	0.1	SW
21-Mar-2015	05:00	0.1	SSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
21-Mar-2015	06:00	0.1	SSW
21-Mar-2015	07:00	0.9	S
21-Mar-2015	08:00	1.1	SSW
21-Mar-2015	09:00	2	SSW
21-Mar-2015	10:00	2.9	SSW
21-Mar-2015	11:00	2.6	SSW
21-Mar-2015	12:00	2.9	SSW
21-Mar-2015	13:00	3.1	SSW
21-Mar-2015	14:00	2.8	SW
21-Mar-2015	15:00	2.7	SW
21-Mar-2015	16:00	2.6	S
21-Mar-2015	17:00	2.6	SE
21-Mar-2015	18:00	2.2	SSE
21-Mar-2015	19:00	1.7	ENE
21-Mar-2015	20:00	1.8	WNW
21-Mar-2015	21:00	1.5	WSW
21-Mar-2015	22:00	1.4	ENE
21-Mar-2015	23:00	1.5	E
22-Mar-2015	00:00	1.8	E
22-Mar-2015	01:00	2.6	E
22-Mar-2015	02:00	2.2	E
22-Mar-2015	03:00	1.9	SW
22-Mar-2015	04:00	1.6	SSW
22-Mar-2015	05:00	2	SW
22-Mar-2015	06:00	1.9	SW
22-Mar-2015	07:00	2.1	SW
22-Mar-2015	08:00	2.2	SSW
22-Mar-2015	09:00	2.4	SW
22-Mar-2015	10:00	2.4	SSW
22-Mar-2015	11:00	2.6	SE
22-Mar-2015	12:00	3.1	SSW
22-Mar-2015	13:00	2.8	SSE
22-Mar-2015	14:00	2.6	SW
22-Mar-2015	15:00	2.3	SW
22-Mar-2015	16:00	2.4	SW
22-Mar-2015	17:00	2	SW
22-Mar-2015	18:00	1.6	N
22-Mar-2015	19:00	1.2	NNW
22-Mar-2015	20:00	1.6	SW
22-Mar-2015	21:00	1.5	N
22-Mar-2015	22:00	1.2	NNE
22-Mar-2015	23:00	1.3	E
23-Mar-2015	00:00	1.4	NNW
23-Mar-2015	01:00	1.6	N
23-Mar-2015	02:00	1.5	NNE
23-Mar-2015	03:00	1.5	N
23-Mar-2015	04:00	1.8	ESE
23-Mar-2015	05:00	1.4	E
23-Mar-2015	06:00	1.2	NE
23-Mar-2015	07:00	0.8	SW
23-Mar-2015	08:00	1.3	SSW
23-Mar-2015	09:00	2.3	SSW
23-Mar-2015	10:00	2.7	S
23-Mar-2015	11:00	3	SW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
23-Mar-2015	12:00	2.9	SE
23-Mar-2015	13:00	2.7	S
23-Mar-2015	14:00	2.6	SSE
23-Mar-2015	15:00	2.2	S
23-Mar-2015	16:00	1.6	SSW
23-Mar-2015	17:00	1.9	SSW
23-Mar-2015	18:00	1.4	SSW
23-Mar-2015	19:00	1.1	SSW
23-Mar-2015	20:00	0.9	SSW
23-Mar-2015	21:00	1.1	SW
23-Mar-2015	22:00	1.6	SSW
23-Mar-2015	23:00	2.1	SSW
24-Mar-2015	00:00	2	SE
24-Mar-2015	01:00	1.3	S
24-Mar-2015	02:00	1.3	SSE
24-Mar-2015	03:00	1.6	SSW
24-Mar-2015	04:00	1.4	SSW
24-Mar-2015	05:00	1.5	WSW
24-Mar-2015	06:00	1.5	SSW
24-Mar-2015	07:00	1.5	SSW
24-Mar-2015	08:00	1.9	S
24-Mar-2015	09:00	2.2	SE
24-Mar-2015	10:00	2.9	SW
24-Mar-2015	11:00	2.5	SW
24-Mar-2015	12:00	2.4	SSW
24-Mar-2015	13:00	2.5	SSW
24-Mar-2015	14:00	2.6	S
24-Mar-2015	15:00	2.6	SSW
24-Mar-2015	16:00	1.9	SSW
24-Mar-2015	17:00	1.4	SW
24-Mar-2015	18:00	1	SW
24-Mar-2015	19:00	0.9	SW
24-Mar-2015	20:00	0.9	SW
24-Mar-2015	21:00	0.8	SSW
24-Mar-2015	22:00	1.1	SW
24-Mar-2015	23:00	1.2	ENE
25-Mar-2015	00:00	1.2	SW
25-Mar-2015	01:00	1.2	SW
25-Mar-2015	02:00	1.3	SW
25-Mar-2015	03:00	0.9	SW
25-Mar-2015	04:00	1.1	SW
25-Mar-2015	05:00	1.2	SSW
25-Mar-2015	06:00	1.2	SSW
25-Mar-2015	07:00	1.3	SSW
25-Mar-2015	08:00	2.2	S
25-Mar-2015	09:00	2.5	S
25-Mar-2015	10:00	2.9	S
25-Mar-2015	11:00	2.8	S
25-Mar-2015	12:00	2.4	WSW
25-Mar-2015	13:00	1.9	WSW
25-Mar-2015	14:00	2.2	WSW
25-Mar-2015	15:00	1.8	WSW
25-Mar-2015	16:00	1.5	SSE
25-Mar-2015	17:00	1.6	SE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
25-Mar-2015	18:00	0.9	SSE
25-Mar-2015	19:00	0.7	NNE
25-Mar-2015	20:00	0.6	NNE
25-Mar-2015	21:00	0.4	SSE
25-Mar-2015	22:00	0.4	SSW
25-Mar-2015	23:00	0.4	S
26-Mar-2015	00:00	0.3	W
26-Mar-2015	01:00	0.6	SW
26-Mar-2015	02:00	0.4	WSW
26-Mar-2015	03:00	0.6	SW
26-Mar-2015	04:00	0.6	SSW
26-Mar-2015	05:00	0.5	ENE
26-Mar-2015	06:00	0.7	NNE
26-Mar-2015	07:00	0.8	SE
26-Mar-2015	08:00	0.8	SE
26-Mar-2015	09:00	1.1	SE
26-Mar-2015	10:00	2	WSW
26-Mar-2015	11:00	2	SSW
26-Mar-2015	12:00	2.1	ESE
26-Mar-2015	13:00	2.4	NNE
26-Mar-2015	14:00	2.6	SW
26-Mar-2015	15:00	2.8	SSW
26-Mar-2015	16:00	1.9	SW
26-Mar-2015	17:00	2.1	SW
26-Mar-2015	18:00	1.7	WSW
26-Mar-2015	19:00	1.4	SW
26-Mar-2015	20:00	1	S
26-Mar-2015	21:00	1.1	SE
26-Mar-2015	22:00	0.9	SW
26-Mar-2015	23:00	0.6	SW
27-Mar-2015	00:00	0.4	SW
27-Mar-2015	01:00	0.4	SW
27-Mar-2015	02:00	0.4	SW
27-Mar-2015	03:00	0.4	SW
27-Mar-2015	04:00	0.5	SW
27-Mar-2015	05:00	0.5	SW
27-Mar-2015	06:00	0.5	SW
27-Mar-2015	07:00	0.5	SSW
27-Mar-2015	08:00	1.1	SSW
27-Mar-2015	09:00	1.6	S
27-Mar-2015	10:00	2.2	S
27-Mar-2015	11:00	2.8	NNW
27-Mar-2015	12:00	2.4	NW
27-Mar-2015	13:00	2.4	WSW
27-Mar-2015	14:00	2.3	SW
27-Mar-2015	15:00	2.6	SW
27-Mar-2015	16:00	2.5	SW
27-Mar-2015	17:00	2.8	SSW
27-Mar-2015	18:00	2.2	SSW
27-Mar-2015	19:00	1.7	SW
27-Mar-2015	20:00	1.4	SSE
27-Mar-2015	21:00	1.1	SSE
27-Mar-2015	22:00	0.9	ESE
27-Mar-2015	23:00	1	SSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
28-Mar-2015	00:00	1	SSW
28-Mar-2015	01:00	1.5	SSW
28-Mar-2015	02:00	1.1	SW
28-Mar-2015	03:00	1.4	NE
28-Mar-2015	04:00	1.2	SSE
28-Mar-2015	05:00	0.8	SE
28-Mar-2015	06:00	0.6	SSE
28-Mar-2015	07:00	1.2	SSE
28-Mar-2015	08:00	0.5	S
28-Mar-2015	09:00	1.3	SSW
28-Mar-2015	10:00	1.7	SW
28-Mar-2015	11:00	2.2	WSW
28-Mar-2015	12:00	2.4	SW
28-Mar-2015	13:00	2.4	SW
28-Mar-2015	14:00	2.4	SW
28-Mar-2015	15:00	2.3	WSW
28-Mar-2015	16:00	2.3	WSW
28-Mar-2015	17:00	2	SW
28-Mar-2015	18:00	1.3	SW
28-Mar-2015	19:00	1	S
28-Mar-2015	20:00	1	SW
28-Mar-2015	21:00	0.6	SSE
28-Mar-2015	22:00	0.9	SW
28-Mar-2015	23:00	0.9	WSW
29-Mar-2015	00:00	0.7	SW
29-Mar-2015	01:00	0.8	SW
29-Mar-2015	02:00	0.8	SW
29-Mar-2015	03:00	0.6	SW
29-Mar-2015	04:00	0.7	SW
29-Mar-2015	05:00	1	SW
29-Mar-2015	06:00	0.4	SW
29-Mar-2015	07:00	0.3	SW
29-Mar-2015	08:00	0.8	SW
29-Mar-2015	09:00	1.6	SW
29-Mar-2015	10:00	2.1	SW
29-Mar-2015	11:00	1.7	SW
29-Mar-2015	12:00	1.6	SSE
29-Mar-2015	13:00	1.8	S
29-Mar-2015	14:00	1.6	S
29-Mar-2015	15:00	1.8	SW
29-Mar-2015	16:00	2.1	SW
29-Mar-2015	17:00	1.6	SW
29-Mar-2015	18:00	0.9	WSW
29-Mar-2015	19:00	0.9	WSW
29-Mar-2015	20:00	0.6	WSW
29-Mar-2015	21:00	0.5	SW
29-Mar-2015	22:00	0.6	SSE
29-Mar-2015	23:00	0.4	NNE
30-Mar-2015	00:00	0.9	SSW
30-Mar-2015	01:00	0.7	SW
30-Mar-2015	02:00	0.5	SW
30-Mar-2015	03:00	0.5	SW
30-Mar-2015	04:00	0.5	SSW
30-Mar-2015	05:00	0.4	SW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
30-Mar-2015	06:00	0.6	SSW
30-Mar-2015	07:00	0.7	SSW
30-Mar-2015	08:00	1.4	SW
30-Mar-2015	09:00	2.1	SW
30-Mar-2015	10:00	2.9	SW
30-Mar-2015	11:00	2.9	SSW
30-Mar-2015	12:00	2.5	SW
30-Mar-2015	13:00	2.6	SSW
30-Mar-2015	14:00	2.5	SW
30-Mar-2015	15:00	2.2	SSW
30-Mar-2015	16:00	2.1	SSW
30-Mar-2015	17:00	1.8	SSW
30-Mar-2015	18:00	1.8	SW
30-Mar-2015	19:00	1.4	SSW
30-Mar-2015	20:00	1.3	S
30-Mar-2015	21:00	1.1	SSW
30-Mar-2015	22:00	1.3	SSW
30-Mar-2015	23:00	1.7	SSW
31-Mar-2015	00:00	0.8	SW
31-Mar-2015	01:00	0.9	SSW
31-Mar-2015	02:00	0.9	SSW
31-Mar-2015	03:00	0.6	SW
31-Mar-2015	04:00	0.5	SW
31-Mar-2015	05:00	0.7	SW
31-Mar-2015	06:00	0.8	WSW
31-Mar-2015	07:00	1	SW
31-Mar-2015	08:00	0.8	SSE
31-Mar-2015	09:00	0.9	WSW
31-Mar-2015	10:00	1.4	S
31-Mar-2015	11:00	1.4	S
31-Mar-2015	12:00	1.3	SW
31-Mar-2015	13:00	1.8	SW
31-Mar-2015	14:00	1.4	SW
31-Mar-2015	15:00	1.6	WSW
31-Mar-2015	16:00	1.1	SW
31-Mar-2015	17:00	0.8	SW
31-Mar-2015	18:00	0.9	SW
31-Mar-2015	19:00	0.6	SW
31-Mar-2015	20:00	0.6	SW
31-Mar-2015	21:00	0.6	SE
31-Mar-2015	22:00	0.7	SSE
31-Mar-2015	23:00	0.8	WSW

APPENDIX K
EVENT ACTION PLANS

Event / Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	SO	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	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.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2.Exceedance for two or more consecutive samples	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.	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.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor;	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				
1.Exceedance for one sample	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.	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.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	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.
2.Exceedance for two or more consecutive samples	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	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	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;	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

	be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results; 8. If exceedance stops, cease additional monitoring.	measures.	5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	abated.

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

Event / Action Plan for Construction Noise

EVENT	ACTION			
	ET	**IEC**	**SO**	**CONTRACTOR**
Action Level	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.	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.	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	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	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	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	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise	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**
	the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results; 8. If exceedance stops, cease additional monitoring.	remedial measures.	problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	5. Stop the relevant portion of works as determined by the SO until the exceedance is abated.

Event and Action Plan for Water Quality

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

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

APPENDIX L
SUMMARY OF EXCEEDANCE

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

Exceedance Report

(A) Exceedance Report for Air Quality

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)	6	5	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: 19 March 2015

Part A – Exceedance Summary Tables

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

Station(s)	Tide	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	Control Station(s)	Depth-average Value at Control Stations (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Depth-average Measured Value (mg/L)	Justification*	Validity (Yes/No)
IS2	Mid-flood	23.5	34.4	CS1	4.9	5.9	6.4	***39.6***	(2) & (6)	No
IS4								***35.3***	(2) & (6)	No

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

*Remarks (1) – No major marine construction activity was conducted.
(2) – No pollution discharge from construction activity was observed.
(3) – Control Station value already exceeded either the Baseline Action or Limit Levels.
(4) – The exceeded results were similar or within the ranges baseline monitoring results.
(5) – Monitoring station is situated at the upstream of the construction sites.
(6) – Other(s): Please specify – No activity touching the sea was carried at near the monitoring stations in which exceedances were recorded.

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 exeedances 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. Priscilla Choy

Title: Environmental Team Leader

Date: 10 April 2015

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 March 2015

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)
IS4	Mid-flood	23.5	34.4	CS1	10.3	12.4	13.4	***25.2***	(2) & (6a)	No
SR2								***32.7***	(2) & (6b)	No
SR3								***36.7***	(2) & (6b)	No
SR6								***34.0***	(2) & (6c)	No
SRA								***31.6***	(2) & (6a)	No
ST2								***41.4***	(2) & (6c)	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 site activity was carried at near the monitoring stations in which exceedance was recorded.
b) Sediment plume due to natural fluctuation of shallow water was observed.
c) No exceedances were recorded at the impact stations (i.e. IS1 to IS3) which are close to construction works.

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 exeedances 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. Priscilla Choy

Title: Environmental Team Leader

Date: 10 April 2015

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: 23 March 2015

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)
IS1	Mid-flood	23.5	34.4	CS1	7.8	9.4	10.1	***32.9***	(2) & (6)	No
IS2								***51.8***	(2) & (6)	No
IS4								***31.7***	(2) & (6)	No

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

*Remarks (1) – No major marine construction activity was conducted.
(2) – No pollution discharge from construction activity was observed.
(3) – Control Station value already exceeded either the Baseline Action or Limit Levels.
(4) – The exceeded results were similar or within the ranges baseline monitoring results.
(5) – Monitoring station is situated at the upstream of the construction sites.
(6) – Other(s): Please specify – Sediment plume discharging to the monitoring stations from the area outside the site boundary 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 exeedances 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. Priscilla Choy

Title: Environmental Team Leader

Date: 10 April 2015

APPENDIX M
SITE AUDIT SUMMARY

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	150303
Date	3 March 2015 (Tuesday)
Time	9:50-11:05

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	
150303-R03	• Storage of construction materials at near the trees should be avoid (P100).	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	
150303-R01	• Clear the accumulated construction wastes at near P107.	F4ii.
150303-R02	• Clear the mixture of water and oil at the drip tray at P87.	F9
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150224), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

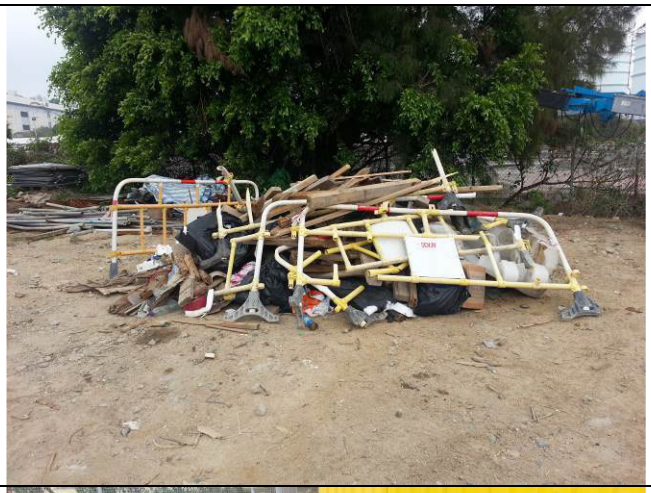
	Name	Signature	Date
Recorded by	Ivy Tam		3 March 2015
Checked by	Dr. Priscilla Choy		3 March 2015

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 (3 March 2015)

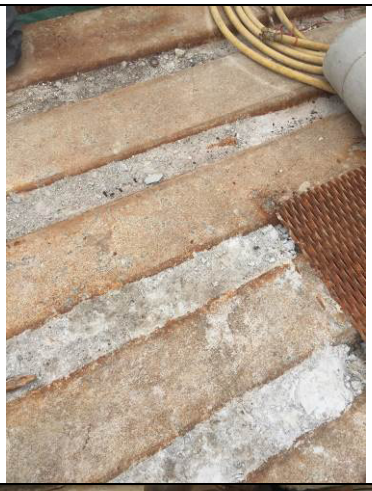
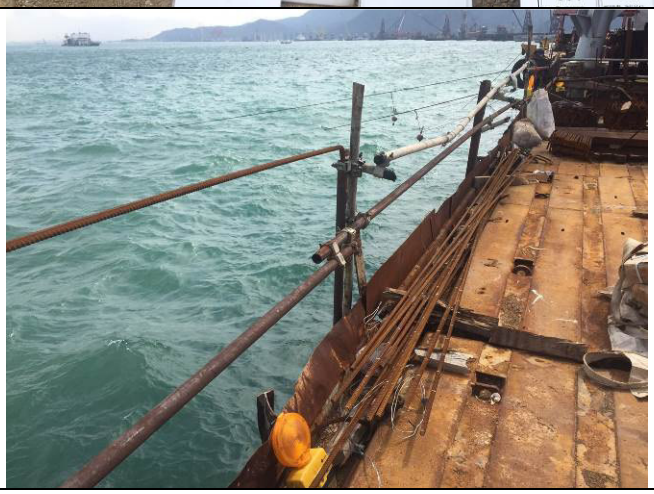
	**Ref No:** 150303-R01 **Impact:** Waste / Chemical Management (F4ii.) **Details:** Clear the accumulated construction wastes at near P107.
	**Ref No:** 150303-R02 **Impact:** Waste / Chemical Management (F9) **Details:** Clear the mixture of water and oil at the drip tray at P87.
	**Ref No:** 150303-R03 **Impact:** Ecology (C30) **Details:** Storage of construction materials at near the trees should be avoid (P100).

Contract HY/2011/09

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

	**Ref No:** 150224-R01 **Impact:** Water Quality (B20) **Details:** Clear the excess concrete debris at the platform at P15. **Follow Up:** The excess concrete debris was cleared.
	**Ref No:** 150224-R02 **Impact:** Noise (E8) **Details:** Provide noise emission labels for the hand held breaker at the platform at P15. **Follow Up:** Noise emission labels have been provided for hand held breaker.
	**Ref No:** 150224-R03 **Impact:** Waste / Chemical Management (F4ii.) **Details:** Regular clear the waste materials at the platform at P19. **Follow Up:** The waste materials were cleared.

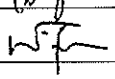
	**Ref No:** 150224-R04 **Impact:** Waste / Chemical Management (F9) **Details:** Clear the wastewater which is nearly overflow at the drip tray at P19. **Follow Up:** The wastewater at the drip tray was cleared.
	**Ref No:** 150224-R05 **Impact:** Waste / Chemical Management (F8) **Details:** Clear the oil spillage around the drip tray at P19. **Follow Up:** The oil spillage around the drip tray was cleared and no further oil leakage was observed.

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	150310
Date	10 March 2015 (Tuesday)
Time	9:45-11:30 and 13:30-16:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
150310-R03	• The silt curtain at P98 and P95 should be used to surround the works area to avoid the gap.	B24 & B25
150310-R04	• Regular check and provide well maintenance for the silt curtain at P68 to ensure it can function properly.	B25
	B. Ecology	
150310-R02	• Clear the construction wastes / materials at near the trees at P99 – P102.	C30
	C. Air Quality	
150310-R01	• The unpaved area at near P113 should be watered regularly to avoid dust generation.	D5, 6, 8 & 14
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
	• No environmental deficiency was identified during site inspection.	
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150303), follow up action is required for the item 150303-R02 which is renamed as 150310-R02.	

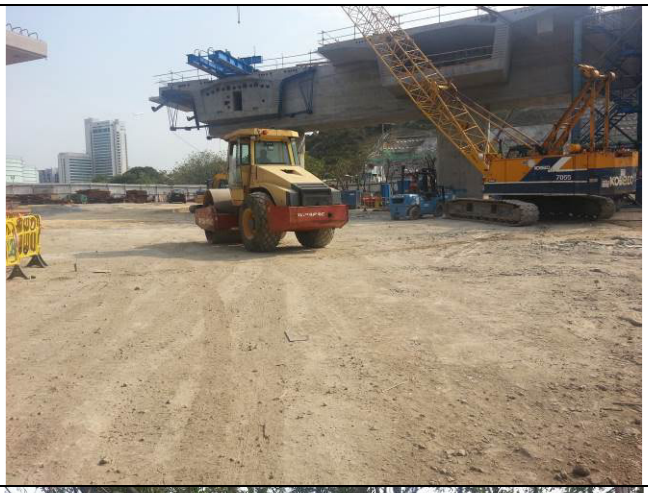
	Name	Signature	Date
Recorded by	Ivy Tam		10 March 2015
Checked by	Dr. Priscilla Choy		10 March 2015

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 (10 March 2015)

	**Ref No:** 150310-R01 **Impact:** Air Quality (D5, 6, 8 & 14) **Details:** The unpaved area at near P113 should be watered regularly to avoid dust generation.
 	**Ref No:** 150310-R02 **Impact:** Ecology (C30) **Details:** Clear the construction wastes / materials at near the trees at P99 – P102.

P98

P95

Ref No: 150310-R03

Impact:
Water Quality (B24 & B25)

Details:
The silt curtain at P98 and P95 should be used to surround the works area to avoid the gap.

Ref No: 150310-R04

Impact:
Water Quality (B25)

Details:
Regular check and provide well maintenance for the silt curtain at P68 to ensure it can function properly.

Contract HY/2011/09

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

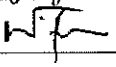
	**Ref No:** 150303-R01 **Impact:** Waste / Chemical Management (F4ii.) **Details:** Clear the accumulated construction wastes at near P107. **Follow Up:** The accumulated construction waste were cleared.
	**Ref No:** 150303-R02 **Impact:** Waste / Chemical Management (F9) **Details:** Clear the mixture of water and oil at the drip tray at P87. **Follow Up:** The mixture of water and oil at the drip tray was cleared.

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	150317
Date	17 March 2015 (Tuesday)
Time	9:15-12:20 and 13:30-15:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
150317-R01	• To seal the hole at the bunded area at barge (B22595Y) near P29.	B16
150317-R03	• Properly deploy the silt curtain at P72, P99, P86 and P68.	B24 & B25
	B. Ecology	
150317-R04	• Clear the construction materials at near the trees at P113, P102 and P100.	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	
150317-R02	• Clear the construction wastes at the side of pile cap of P27.	F4ii.
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150310), follow up action is required for the item 150310-R02 and 150310-R04 which are renamed as 150317-R04 and 150317-R03 respectively.	

	Name	Signature	Date
Recorded by	Ivy Tam		17 March 2015
Checked by	Dr. Priscilla Choy		17 March 2015

Contract HY/2011/09

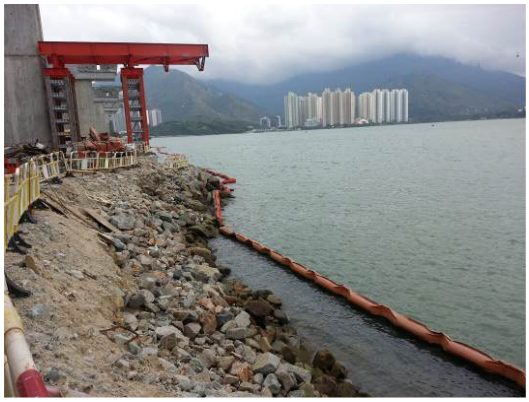
Hong Kong-Zhuhai-Macao Bridge

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

Environmental Observations Identified during the Environmental Site Inspection (17 March 2015)

	**Ref No:** 150317-R01 **Impact:** Water Quality (B16) **Details:** To seal the hole at the bunded area at barge (B22595Y) near P29.
	**Ref No:** 150317-R02 **Impact:** Waste / Chemical Management (F4ii.) **Details:** Clear the construction wastes at the side of pile cap of P27.

P72



P99

P86

P68

Ref No: 150317-R03

Impact:
Water Quality (B24 & B25)

Details:
Properly deploy the silt curtain at P72, P99, P86 and P68.

P113

P102

P100

Ref No: 150317-R04

Impact:
Ecology (C30)

Details:
Clear the construction materials at near the trees at P113, P102 and P100.

Contract HY/2011/09

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

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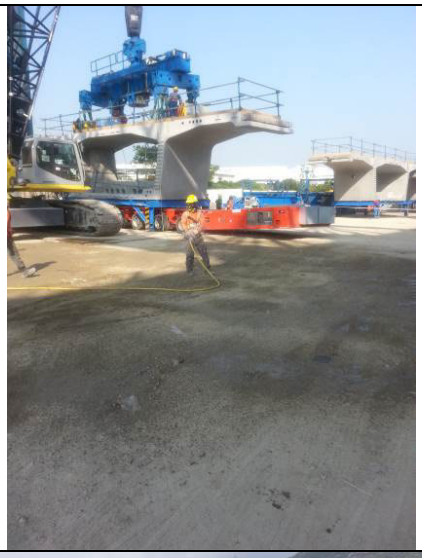
<td>  </td>
<td>Ref No: 150310-R01

Impact:
Air Quality (D5, 6, 8 & 14)

Details:
The unpaved area at near P113 should be watered regularly to avoid dust generation.

Follow Up:
The unpaved area was watered regularly.</td>
</tr>
<tr>
<td> 
P98
 
P95</td>
<td>Ref No: 150310-R03

Impact:
Water Quality (B24 & B25)

Details:
The silt curtain at P98 and P95 should be used to surround the works area to avoid the gap.

Follow Up:
The silt curtain was properly deployed to surround the works.</td>
</tr>
</table>

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	150331
Date	31 March 2015 (Tuesday)
Time	9:15-12:10 and 13:30-15:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
150331-R01	• Properly deploy the silt curtain at P68, P72, P86, P99 and P103.	B25
150331-R02	• Clear the waste materials at near the rockfill platform at P68.	B21
150331-R07	• Clear the sedimentation tank to ensure it can function properly at Portion C.	B3iv.
	B. Ecology	
150331-R05	• Clear the construction wastes / materials at near the trees at P87, between P88 & P89, between P94 & P95, P102 and P113.	C30
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
150331-R04	• To repair the noise enclosure at P70.	E7
	E. Waste / Chemical Management	
150331-R03	• Clear the accumulated general refuse at platform at P70.	F1i. & F1iii.
150331-R06	• To clear the oil spillage at near P109.	F8
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150323), follow up action is required for the item 150323-R03 which is renamed as 150331-R04. For the item 150317-R03 and 150317-R04 which are also renamed as 150331-R01 and 150331-R05 respectively and follow up action is also required.	

	Name	Signature	Date
Recorded by	Ivy Tam		31 March 2015
Checked by	Dr. Priscilla Choy		31 March 2015

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 (31 March 2015)

P68

P72

P86

P99

P103

Ref No: 150331-R01

Impact:
Water Quality (B25)

Details:
Properly deploy the silt curtain at P68, P72, P86, P99 and P103.

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	150323
Date	23 March 2015 (Monday)
Time	10:00-11:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
150323-R02	• The silt curtain at P71 and P70 should be used to surround the works area to avoid the gap.	B25
	B. Ecology	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
150323-R01	• The unpaved site area at near P113 should be watered regularly to avoid dust generation.	D5, D6, D14
	D. Noise	
150323-R03	• To repair the noise enclosure at P70.	E7
	E. Waste / Chemical Management	
150323-R04	• Clear the concrete debris and used cement bags at P50.	F4ii.
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150317), follow up action is required for the item 150317-R03 and 150317-R04.	

	Name	Signature	Date
Recorded by	Ivy Tam		23 March 2015
Checked by	Dr. Priscilla Choy		23 March 2015

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 (23 March 2015)

	**Ref No:** 150323-R01 **Impact:** Air Quality (D5, D6, D14) **Details:** The unpaved site area at near P113 should be watered regularly to avoid dust generation.
 **P70**  **P71**	**Ref No:** 150323-R02 **Impact:** Water Quality (B25) **Details:** The silt curtain at P71 and P70 should be used to surround the works area to avoid the gap.

	**Ref No:** 150323-R03 **Impact:** Noise (E7) **Details:** To repair the noise enclosure at P70.
 	**Ref No:** 150323-R04 **Impact:** Waste / Chemical Management (F4ii.) **Details:** Clear the concrete debris and used cement bags at P50.

Contract HY/2011/09

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

	**Ref No:** 150317-R01 **Impact:** Water Quality (B16) **Details:** To seal the hole at the bunded area at barge (B22595Y) near P29. **Follow Up:** The hole at the bunded area was sealed.
	**Ref No:** 150317-R02 **Impact:** Waste / Chemical Management (F4ii.) **Details:** Clear the construction wastes at the side of pile cap of P27. **Follow Up:** The construction wastes at the side of pile cap were cleared.

	**Ref No:** 150331-R02 **Impact:** Water Quality (B21) **Details:** Clear the waste materials at near the rockfill platform at P68.
	**Ref No:** 150331-R03 **Impact:** Waste / Chemical Management (F1i. & F1iii.) **Details:** Clear the accumulated general refuse at platform at P70.
	**Ref No:** 150331-R04 **Impact:** Noise (E7) **Details:** To repair the noise enclosure at P70.

P87

Between P88 & P89

Between P94 & P95

P102

P113

Ref No: 150331-R05

Impact:
Ecology (C30)

Details:
Clear the construction wastes / materials at near the trees at P87, between P88 & P89, between P94 & P95, P102 and P113.

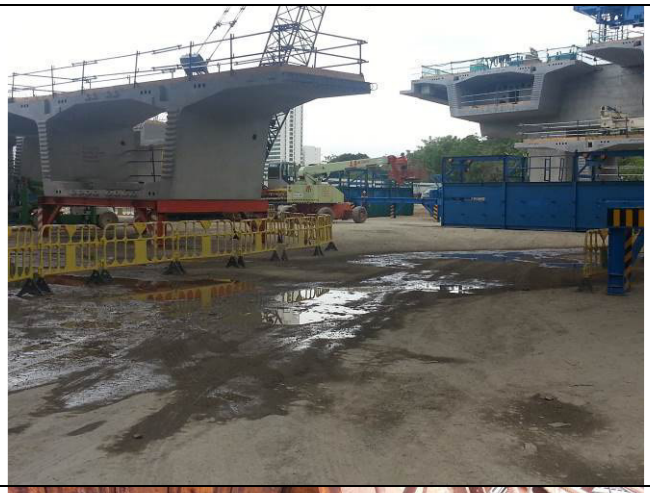
	**Ref No:** 150331-R06 **Impact:** Waste / Chemical Management (F8) **Details:** To clear the oil spillage at near P109.
	**Ref No:** 150331-R07 **Impact:** Water Quality (B3iv.) **Details:** Clear the sedimentation tank to ensure it can function properly at Portion C.

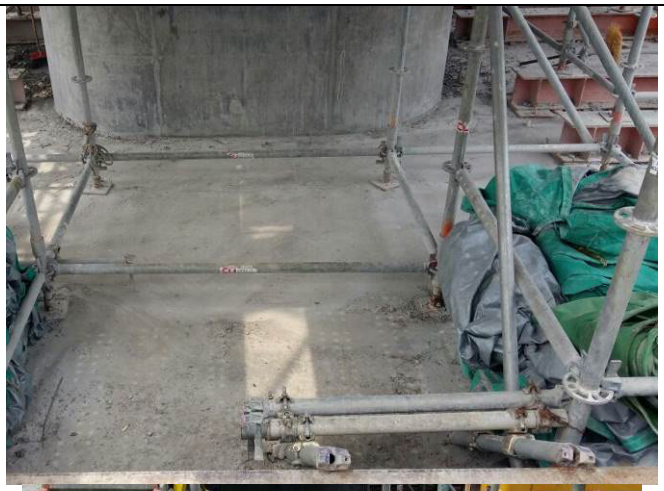
Contract HY/2011/09

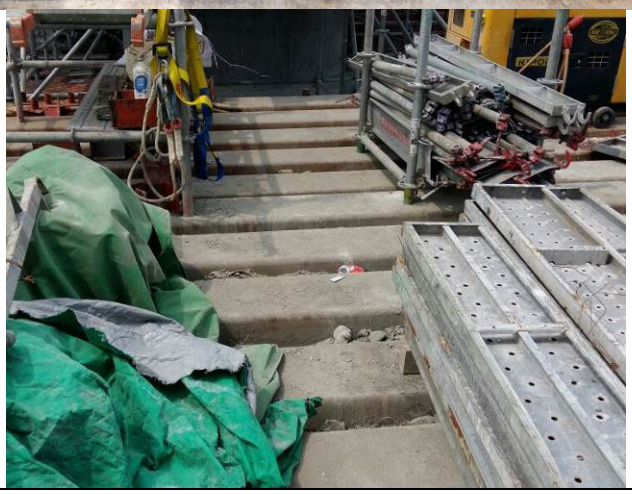
Hong Kong-Zhuhai-Macao Bridge

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

	**Ref No:** 150323-R01 **Impact:** Air Quality (D5, D6, D14) **Details:** The unpaved site area at near P113 should be watered regularly to avoid dust generation.
 **P70**  **P71**	**Ref No:** 150323-R02 **Impact:** Water Quality (B25) **Details:** The silt curtain at P71 and P70 should be used to surround the works area to avoid the gap. **Follow Up:** No gap was observed at the silt curtain.



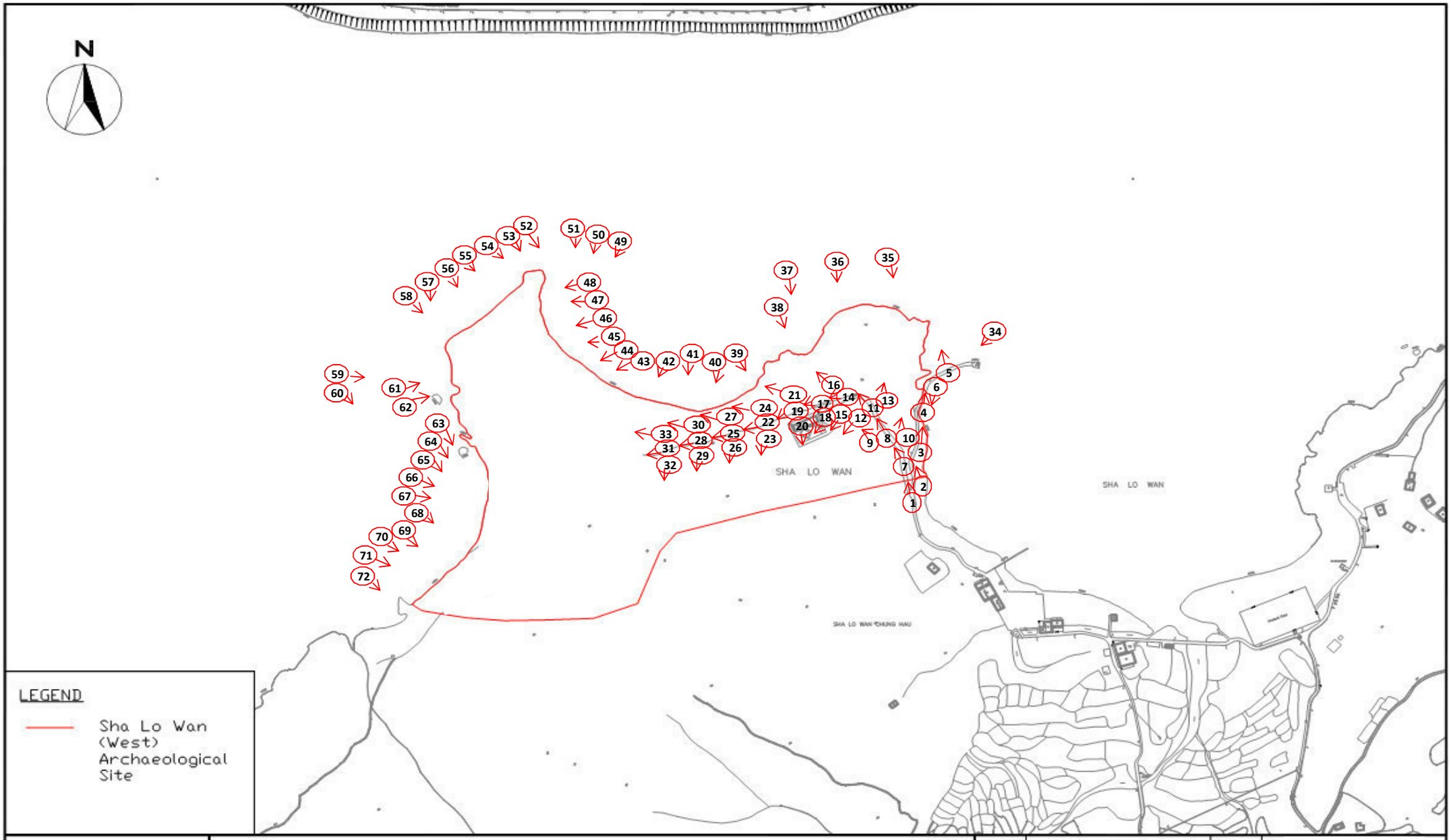


Ref No: 150323-R04

Impact:
Waste / Chemical Management (F4ii.)

Details:
Clear the concrete debris and used cement bags at P50.

Follow Up:
The concrete debris and used cement bags were cleared.



CINOTECH
Cinotech Consultants Limited

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge
Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

LOCATION OF SHA LO WAN (WEST) ARCHAEOLOGICAL SITE

SCALE	1:100	DATE	March 2015
CHECK	IT	DRAWN	JW
JOB No.	MA12014	FIGURE NO. 1	REV –

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

CINOTECH consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S. Project No. MA12014	DATE Mar-15 Appendix M1

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Photo 12

CINOTECH 漢臻 consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S.	DATE Mar-15
		Project No. MA12014	Appendix M2

Photo 13

Photo 14

Photo 15

Photo 16

Photo 17

Photo 18

CINOTECH 漢臻 consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S. Project No. MA12014	DATE Mar-15 Appendix M3

Photo 19

Photo 20

Photo 21

Photo 22

Photo 23

Photo 24

CINOTECH 漢臻 consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S.	DATE Mar-15
		Project No. MA12014	Appendix M4

Photo 25

Photo 26

Photo 27

Photo 28

Photo 29

Photo 30

CINOTECH 漢騰 consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S.	DATE Mar-15
		Project No. MA12014	Appendix M5

Photo 31

Photo 32

Photo 33

Photo 34

Photo 35

Photo 36

CINOTECH 漢騰 consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S.	DATE Mar-15
		Project No. MA12014	Appendix M6

Photo 37

Photo 38

Photo 39

Photo 40

Photo 41

Photo 42

CINOTECH 漢騰 consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S.	DATE Mar-15
		Project No. MA12014	Appendix M7

Photo 43

Photo 44

Photo 45

Photo 46

Photo 47

Photo 48

CINOTECH consultants limited 漢騰	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S.	DATE Mar-15
		Project No. MA12014	Appendix M8

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Photo 50

Photo 51

Photo 52

Photo 53

Photo 54

CINOTECH 漢騰 consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S.	DATE Mar-15
		Project No. MA12014	Appendix M9

Photo 55

Photo 56

Photo 57

Photo 58

Photo 59

Photo 60

CINOTECH 漢騰 consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S.	DATE Mar-15
		Project No. MA12014	Appendix M10

Photo 61

Photo 62

Photo 63

Photo 64

Photo 65

Photo 66

CINOTECH 漢騰 consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S.	DATE Mar-15
		Project No. MA12014	Appendix M11

Photo 67

Photo 68

Photo 69

Photo 70

Photo 71

Photo 72

CINOTECH 漢臻 consultants limited	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Photographic Records for Sha Lo Wan (West) Archaeological Site	SCALE N.T.S. Project No. MA12014	DATE Mar-15 Appendix M12

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: • 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	• 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
		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; • 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;	practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.		sites	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
S5.5.6.2	A2	• 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 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: • 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	^

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
		materials should be carried out in totally enclosed system; • 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.	monitoring stations to ensure compliance with relevant criteria throughout the construction period.		monitoring station		^ ^ ^ ^ ^ ^ ^
S5.5.2.7	A7	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: • 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	N/A N/A N/A N/A
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
		following: • 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	*Construction and Demolition Material* The following mitigation measures should be implemented in handling the waste: • 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	^ ^ ^ 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
		the disposal of C&D materials are properly documented and verified; and • 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					^ ^
S8.3.9 - S8.3.11	WM2	*C&D Waste* • 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	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
		areas of the sites should be considered for such segregation and storage.					
S8.2.12-S8.3.15	WM3	*Chemical Waste* • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. • The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. • Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical	Control the chemical waste and ensure proper storage, handling and 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
		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	*Sewage* • 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	*General Refuse* • 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
		plastic bottles etc., should be provided. • 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	• 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
		taking account of the Contractor's proposed actual locations of his initial period of dredging work. • silt curtain shall be fully maintained throughout the works. In addition, dredging operations should be undertaken in such a manner as to minimise resuspension of sediments. Standard good dredging practice measures should, therefore, be implemented including the following requirements which should be written into the dredging contract. • trailer suction hopper dredgers shall not allow mud to overflow; • use of Lean Material Overboard (LMOB) systems shall be prohibited; • mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted; • barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material; • any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes; • loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation; • excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved; • adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;					* 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
		• 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.					^ ^
S9.11.1.3	W2	<u>*Land Works*</u> 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: • 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	^ 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
		specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; • all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit; • wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel;					^ ^ ^ ^ ^ ^ ^ ^

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
		• 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.					^ N/A * ^ ^ ^
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	• 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
		• Reinstate works areas in Scenic Hill • Avoid stream modification in Scenic Hill	Frog in Scenic Hill				N/A ^
S10.7	E2	• 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	• 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	• Dolphin Exclusion Zone; • Dolphin watching plan	Minimize temporary marine habitat loss impact to dolphins	Contractor	Marine works	During marine works	^ ^
S10.7	E7	• 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
		• Temporal suspension of drilling bored pile casing in rock during peak dolphin calving season in May and June					N/A
S10.7	E8	• 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	• 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	• 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	• 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	Mitigate both Landscape and Visual Impacts • 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
		• G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge or footbridge to screen bridge and traffic.					N/A
		• 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.					N/A
		• G5. Vegetation reinstatement and upgrading to disturbed areas.					N/A
		• G6. Maximize new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed.					N/A
		• G7. Provide planting area around peripheral of and within HKLR for tree screening buffer effect.					N/A
		• G8. Plant salt tolerant native tree and shrubs etc along the planter strip at affected seawall.					N/A
		• 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).					N/A
S14.3.3.3	LV3	<u>Mitigate Visual Impacts</u> • 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.					^

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

Appendix: C6 Monthly Summary Waste Flow Table

Name of Department: HyD

Contract No.: HY/2011/09

Monthly Summary Waste Flow Table for 2015 (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	4.101	0.000	0.000	0.000	4.101	0.000	0.070	0.485	0.000	0.000	0.566
Feb	3.823	0.000	0.000	0.000	3.823	0.000	0.000	0.550	0.000	0.000	0.241
Mar	0.681	0.000	0.000	0.000	0.681	0.000	0.096	0.729	0.000	0.793	0.299
Apr											
May											
Jun											
Sub-Total	8.604	0.000	0.000	0.000	8.604	0.000	0.166	1.764	0.000	0.793	1.105
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	8.604	0.000	0.000	0.000	8.604	0.000	0.166	1.764	0.000	0.793	1.105

Forecast of Total Quantities of C&D Materials to be Generated from the Contract [10]										
Total Quantity Generated[11]	Hard Rock and Large Broken Concrete[6]	Reused in the Contract[8,9]	Reused in other Projects[5,8,9]	Disposed as Public Fill[7]	Imported Fill[6,7,8,9]	Metals	Paper/ cardboard packaging	Plastics[3]	Chemical Waste	Others, e.g. general refuse[8,9]
(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m^3)
229.311	0.000	3.200	73.111	100.000	53.000	1.500	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 m^3. (ER Part 8 Clause 8.8.5 (d) (ii) refers).

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

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

(7) According to the EIA Appendix 8B, the density of soil (bulked) is 1.8 tonnes/m^3.

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

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

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

(12) The density of metal is 7,850 kg/m^3.

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

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
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 (around8:45a.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:- •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	After receiving the complaint, additional site inspection was conducted at near Tung Chung New Development Pier on 30 May 2013 to investigate whether oil	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
			April 2013 (Com-2013-04-001). The complainant complained again about the oil was dumped from various vessels operating for Hong Kong-Zhuhai-Macao Bridge Hong Kong (HZMB HK) Projects near Tung Chung New Development Pier over the past months.	dumped was due to Contract No. HY/2011/09's vessels. During the site inspection, three working vessels under Contract No.HY/2011/09 was anchored off near Tung Chung New Development Pier. No oil dumped from Contract No. HY/2011/09's vessels were observed and the water around the vessels was clear. The following mitigation measures have been implemented by DCVJV: • DCVJV has sent the letter to the shipping agent to remind them to ensure the vessels under Contract No. 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	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	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.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
			operation of concrete lorry mixers during evening and night-time period at Southeast Quay of Chek Lap Kok.	During the inspections, the Ro-Ro barge was observed anchored off Southeast Quay at Chek Lap Kok but no concrete lorry mixer was observed throughout the inspection. 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. On 30 July 2013, no tug boat and concrete lorry mixers were observed during the inspection. According to the Contractor, there was no concreting works for the pier sites on 23 July 2013 and therefore no loading and unloading operation at Southeast Quay at Chek Lap Kok. Concreting works were performed at Pier 0 on 30 July 2013. As the Contractor anticipated the arrival time of tug boat and flap-top barge at Southeast Quay will exceed 23:00 hours after the concreting works, they decided to arrange the tug boat and flap-top barge with concrete	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				lorry mixers anchored off around Pier 66 after 23:00 hours. So, no loading and unloading operation at Southeast Quay at Chek Lap Kok was observed. Further night time site inspection was conducted on 22 August 2013 during the loading and unloading operation at Southeast Quay of Chek Lap Kok, the construction works conducted under Contract No. HY/2011/09 complied with the conditions in the CNP No. GW-RS0895-13.	
Com-2013-11-001	Chek Lap Kok (CLK) South Road	16 November 2013	The complaint was received by project customer services on 16th November 2013 regarding the dust problem at Chek Lap Kok (CLK) South Road.	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:- • 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	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				at every site exit at CLK South Road and South Perimeter Road. • No dark smoke was observed emitting from the plant equipments. 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 suppression measures has been properly implemented by the Contractor on site to prevent dust nuisance from the construction activities.	
Com-2014-01-001	Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill (Contract No. HY/2011/09	3 January 2014	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.	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. 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. Nevertheless, the Contractor was advised to strictly follow the conditions of the permit because any deviation from the	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				conditions may lead to cancellation of the permit, subsequent prosecution action and the Authority's refusal to issue further permit. In addition, the following environmental mitigation measures were recommended: • Review and adjust the lighting directions of the barge, under safety consideration, to avoid potential visual impacts to residents in vicinities; • 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.	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	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				mitigation measures. 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):- 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 anticipated. 2) No heavy smoke was observed emitting from plants / equipment during the site inspection on 21 January 2014. 3) The vehicles and equipments were switched off while not in use. 4) All plant and equipment were well maintained and in good operating condition. 5) Air quality mitigation measures has been properly implemented by the Contractor on site to prevent dust nuisance from the construction activities.	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
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	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. In addition, spill kits are ready on site in order to dealing with spillage cases promptly. Nevertheless, DCVJV was also recommended the mitigation measures as below: • 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 working platform. • Regular check the condition of vessels and plant equipments to ensure no leakage of oil.	Closed
Com-2014-03-002	Construction Noise in the vicinity of the waters outside Sha Lo Wan	11 March 2014	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.	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. The Contractor was advised to strictly	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				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: · 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; and · 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	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				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)	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. 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. However, there is no significant increase of cetacean stranding were found in Hong Kong since the commencement of Contact No. HY/2011/09. In regard to the complaint, the following recommendations were made:	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				➢ In case stranded cetaceans are found, the AFCD shall be contacted immediately and provide the following information to facilitate AFCD's investigation: 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 Lo Wan	13 May 2014	The complaint was received by 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 -	After receiving the complaint from a Sha 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.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
			Zhuhai - Macao Bridge (HZMB) Project on 11 May 2014.	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. 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.	
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.	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. EPD and AFCD provided their comments on 5 and 9 June 2014 respectively. 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 complaint investigation report and the report was submitted to EPD on 4 March 2015.	Complaint investigation report is under review by EPD

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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: • 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 roro-barge.	Based on the investigation findings, dusty materials at the ro-ro barge at P63 and dust generation when vehicles passing by at the roro-barge at Southeast Quay were observed. The following recommendations were made: • To check for any accumulation of dusty materials at roro-barge. • To cover the stockpile of dusty materials before removing from site. • To clean the surface of roro-barge	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				regularly and do not cause dust and water quality nuisance. • To maintain the surface of roro-barge wet especially during the vehicle movements. Water misting is considered an acceptable measure to control dust emissions. • To check and replace the worn sand bags at the surface of roro-barge to prevent the turbid water from entering to the sea when watering the barge surface.	
Com-2014-11-001	HZMB-HKLR – Section between HKSAR Boundary and Scenic Hill (Contract No. HY/2011/09)	11 November 2014	The complaint was received by EPD on 11 November 2014. According to the EPD's email, the complaint was received from one of the green groups Sea Shepherd. They complained that the residual concrete had been washed off from the deck surface of a flat-top barge into the sea, and marine littering had been spotted by a worker of HZMB-HKLR – Section between HKSAR Boundary and Scenic Hill (Contract No. HY/2011/09)	Based on the investigation findings, residue concrete or wastewater contaminated with concrete overflowing/spilling into the sea from the roro barge and marine littering were suspected. The following recommendations were made: ➢ Properly clear the concrete stains on the three ro-ro barges (e.g. hand-held equipments such as shovel etc). Tarpaulin sheet is also recommended to provide when clearing the concrete stains at the edge of roro barge to prevent these removed materials from getting into the sea. The worker should also pay special care to remove the concrete stains to	Closed
Com-2014-11-002	HZMB-HKLR – Section between HKSAR Boundary and Scenic Hill	18 November 2014	The complaint was received by EPD on 18 November 2014. According to the EPD's email, it was alleged that residual concrete		Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
	(Contract No. HY/2011/09)		had been poured out directly from the concrete lorry mixers on a roro barge into the sea during night-time by the workers of HZMB-HKLR – Section between HKSAR Boundary and Scenic Hill (Contract No. HY/2011/09)	minimize the water quality nuisance. ➢ Keep cleanliness of the surface of roro-barge and do not cause water quality nuisance. ➢ To check and reinforce the concrete / sand bag bund between baffles erected near the edge of the three ro-ro barges to avoid accidental leakage of wastewater from the deck regularly. ➢ Keep all debris/ aggregate away from the edge of ro-ro barge to prevent them from falling into the sea. ➢ Provide sufficient skips for temporary storage of concrete residue/wastewater. ➢ To check for any accumulation of residual waste concrete at the waste skip on roro-barge. ➢ Provide spare and sufficient sand bags at each roro barges to confine the concerned area in the event of accidental spillage of concrete when discharge the concrete from the concrete lorry mixers to pump truck. ➢ Provide absorptive materials to absorb the wastewater in case of accidental spillage of wastewater	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				during washing concrete lorry mixers or other equipments. ➢ Assign trained staff to ensure proper management of environmental matters on each of the ro-ro barges in particular the handling of concrete residue/wastewater generated during operation. ➢ Keep record for collection of skip or temporary storage tank for wastewater and excess concrete. ➢ Ensure sufficient garbage bag / rubbish bin are provided at working barge / pier site. ➢ Provide training for the workers regularly regarding the water quality mitigation measures and waste management to increase their awareness of environmental protection.	
Com-2014-11-003	Floating Concrete Batching Plant (FCBP)	28 November 2014	The complaint was received by EPD on 28 November 2014. The complaint was received from one of the green groups Green Lantau Association. They complained about the hauling of the floating concrete batching plant (FCBP) by the tug boat to the site of Contract No. HY/2011/09 from the north-	Based on the information collected, the following conclusions were drawn: 1) It is suspected that the wake following the FCBP was resulted from disturbance to the bottom sediment when it was traveling during the lowest tide on that day. 2) The FCBP was traveling within the	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
			east side had disturbed the seabed causing an increase of turbidity in marine waters at around noon of 15 November 2014.	site area and the maximum number of movement of a floating plant (and therefore tug boat) is two times per day. Average duration of each movement is around 1 hour/day. Therefore, the disturbance to the bottom sediment is considered temporary, localized and infrequent. 3) No illegally discharge of wastewater or domestic wastewater to the sea from FCBP. 4) Relevant environmental mitigation measures as shown in EP-352/2009/C were properly implemented. 5) No deterioration of marine water quality based on the marine water quality monitoring results on 15 November 2014. Nevertheless, DCVJV was also recommended the mitigation measures as below: • The vessel skipper should pay special care about the movement of deep draught vessel to avoid seabed disturbance. (e.g. speed restrictions) • In case of sediment plume was found behind vessel, the vessel skipper	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				should further reduce vessel speed. • Minimum clearance of 0.6m should be maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash. (Reference: EIA-081/2002 - Construction of Lung Kwu Chau Jetty)	
Com-2014-12-001	Shores of Po Chue Tam and Shek Tsai Po, Tai O	7 December 2014	The complaint was received from one of the green groups Green Lantau Association. They complained about some waste materials (including a number of grey plastic mats and buoys) suspected in relation to the HZMB works have recently washed up on the shores of Po Chue Tam and Shek Tsai Po, Tai O	The owner of objects found on the shores could not be identified. DCVJV has taken initiative to remove these materials after receiving the complaint. Nevertheless, DCVJV was also recommended the mitigation measures as below: • Gather up and remove debris to keep the work site orderly. • Maintain site housekeeping. Designate areas for waste materials and provide containers. • Secure loose or light material that is stored on open floors. • Do not permit rubbish to fall freely from any level of the pier sites. • Provide training for the workers	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				regularly regarding the water quality mitigation measures and waste management to increase their awareness of environmental protection.	
Com-2014-12-002	Site Office of HZMB-HKLR – Section between HKSAR Boundary and Scenic Hill	2 December 2014	Highways Department (HyD) received a public complaint from a resident of Le Bleu Duex on 2 December 2014. According to the email from ARUP dated 3 December 2014, the complainant advised that the noise nuisance due to the metal parts were dropped onto the ground by people repetitively and loading or unloading a boat at the pier. The complaint was quoted, "*A resident living in Le Bleu Duex addressed a complaint to CE of HyD at about 20:04 hrs last night. He complained about the noise nuisance coming from site office since 19:30 hrs last night. Repetitively metal parts had been dropped on the ground by people who seem to*	Based on the information collected, the noise generated is considered due to the metal parts were dropped onto the ground at the seashore area near Le Bleu Duex. The metal pipe was unloaded at non-designated area and no powered mechanical equipment was used for unloading works at WA6 during restricted hour. The Contractor was reminded to take sufficient noise mitigation measures to minimize the environmental impact on the nearby community as recommended in the approved EIA report and the specific mitigation measures for the complaint including but not limited to:- • To place wooden planks or rubber mats on ground for loading and unloading heavy or metal objects; and • To deploy professional personnel to	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
			be loading or unloading a boat at the pier. Noise was still going on right now at 20:04."	supervise the works.	
Com-2014-12-003	Along the shore from Yat Tung to Tai O	24 December 2014	The complainant was concerned about the increase of marine refuse (water bottles and debris) along the shore from Yat Tung to Tai O suspected in relation to the HZMB works.	The owner of marine refuse found on the shores could not be identified. DCVJV has taken initiative to remove these wastes after receiving the complaint. DCVJV will also take the initiative to clear the marine refuse along the shore from Yat Tung to Tai O, if necessary. Nevertheless, DCVJV was also recommended the mitigation measures as below: • Gather up and remove debris to keep the work site orderly. • Maintain site housekeeping. Designate areas for waste materials and provide containers. • Secure loose or light material that is stored on open floors. • Do not permit rubbish to fall freely from any level of the pier sites. • Provide training for the workers regularly regarding the water quality mitigation measures and waste management to increase their awareness of environmental	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				protection.	

APPENDIX Q
SUMMARY OF SUCCESSFUL PROSECUTION

Appendix Q - Summary of Successful Prosecution

Date of Successful Prosecution	Details of the Successful Prosecution	Status	Follow Up
20 October 2014	The non-compliance of construction noise permit (CNP) numbered GW-RS1217-13 that use of powered mechanical equipment not permitted in the CNP on 15 March 2014 between the hours of 7p.m. and 7a.m. at Pier 72.	The subcontractor was fined.	To ensure the construction works would comply with the CNP during restricted hours, a Permit-to-work system was formulated to control daily operation of the CNPs.