RAMBOLL ENVIRON

Ref.: HYDHZMBEEM00_0_3275L.15

14 August 2015

By Fax (3767 5922) and By Post

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

Attention: Mr. Colin Meadows / Mr. Michael Chan

Dear Sirs,

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

Contract No. HY/2011/09 HZMB Hong Kong Link Road –
Section between HKSAR Boundary and Scenic Hill
Revised Monthly EM&A Report for July 2015 (EP-352/2009/D)

Reference is made to the captioned Report (Version 2.0) certified by the Environmental Team Leader (ETL) and the clarifications received on 13 August 2015.

We have no adverse comments on the caption Report and verify it in accordance with Condition 4.4 of EP-352/2009/D. The ETL shall be aware that the verification to the captioned report does not release the ETL of any of her obligations to comply with the EM&A Manual and the approved monitoring methodologies.

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

Yours sincerely,
For and on behalf of
Ramboll Environ Hong Kong Limited

Antony

Antony Wong
Independent Environmental Checker
Hong Kong Link Road

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

Internal: DY, YH, CL, LP, ENPO Site

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Dragages -China Harbour-VSL JV

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

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

Monthly EM&A Report

July 2015
(Version 2.0)

Certified By	Dr. Priscilla Choy Environmental Team Leader (Date: 13 August 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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TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURE

LIST OF APPENDICES

EXECUTIVE SUMMARY

Introduction

1. This is the 30th 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 July 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	6th, 10th, 16th, 22nd and 28th July 2015
24-hr TSP Monitoring	6th, 10th, 16th, 22nd and 28th July 2015
Noise Monitoring	7th, 17th, 23rd and 29th July 2015
Water Quality Monitoring	2nd, 4th, 6th, 8th, 10th, 13th, 15th, 17th, 20th, 22nd, 24th, 27th, 29th and 31st July 2015
Dolphin Monitoring (Line-transect Vessel Surveys)	6th and 28th July 2015
Additional Land-based Dolphin Behaviour and Movement Monitoring	6th and 16th July 2015
Environmental Site Inspection	7th, 14th, 21st and 28th July 2015
Archaeological Site Inspection	(1) N/A

Remark: (1) No archaeological site inspection was conducted in the reporting month.

Breaches of Action and Limit Levels

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

Table II Summary Table for Events Recorded in the Reporting Month

Environmental Monitoring	Parameter	No. of Exceedance		No. of Exceedance related to the Construction Activities of this Contract	
		Action Level	Limit Level	Action Level	Limit Level
Air Quality	1-hr TSP	0	0	0	0
	24-hr TSP	0	0	0	0
Noise	$L_{eq(30min)}$	0	0	0	0
Water Quality	Dissolved Oxygen (DO) (Surface & Middle)	0	0	0	0
	Dissolved Oxygen (DO) (Bottom)	0	0	0	0
	Turbidity	0	0	0	0
	Suspended Solids (SS)	4	6	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 four Action Level and six Limit Level exceedances for suspended solids were

recorded. No Action/Limit Level exceedance for dissolved oxygen and turbidity were recorded.

8. According to the investigation, no pollution discharge was observed from the site. In addition, adverse water quality outside the site boundary and 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. Therefore, the exceedances are considered not due to the Contract.

Complaint Log

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

Notification of Summons and Successful Prosecutions

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

Reporting Changes

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

Future Key Issues

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

<u>WA4</u>

- Fabrication of lifting frames
- Deliveries of frame structures

<u>WA7</u>

- Fabrication of cofferdam frame structures
- Maintenance of Reverse Circulation Drill (RCD) equipment

<u>Marine Viaduct (P0 to P80)</u>

- Inter-face coring tests
- Full depth coring test
- Sonic test
- Grouting work
- Casing installation
- Installation of sheetpiles on cofferdam
- RCD excavation

Pile Cap Construction:

- Installation of precast cap shells
- Concreting
- Kingpost installation and associated steel welding works
- Concreting trimming
- Rock excavation
- Steel Fixing works of pile cap

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

Precast Column Erection

- Installation of base units and precast units
- Stressing of vertical nailing tendons

Deck Erection

- Setting up of equipment
- Fabrication of Lifting Frames (LF)
- Segment erection

Precast Segment

- Segment casting

Land Viaduct (P81 to Abutment at Scenic Hill Tunnel (SHT))

- Excavation works
- ELS excavation
- Pier head construction
- Installation of steel bracket and girder system
- Removal of formwork & falsework
- Erection of soffit formwork was completed, formwork & falsework erection
- Steel fixing
- Nailing work and removal of formwork

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 30th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme in July 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

<table>
<tr><th>Party</th><th>Position</th><th>Position</th><th>Phone No.</th><th>Fax No.</th></tr>
<tr><td rowspan="2">SOR (ARUP)</td><td rowspan="2">CRE</td><td>Mr. Michael Chan</td><td>3767 5803</td><td rowspan="2">3767 5922</td></tr>
<tr><td>Mr. Colin Meadows</td><td>3767 5801</td></tr>
<tr><td rowspan="2">ENPO/IEC (Ramboll Environ)</td><td>Environmental Project Office Leader</td><td>Mr. Y. H Hui</td><td>3465 2888</td><td>3465 2899</td></tr>
<tr><td>Independent Environmental Checker</td><td>Mr. Antony Wong</td><td>3465 2888</td><td>3465 2899</td></tr>
<tr><td rowspan="3">Contractor (DCVJV)</td><td>Deputy Project Director</td><td>Mr. W.K Poon</td><td>3121 6638</td><td rowspan="2">3121 6688</td></tr>
<tr><td>Environmental Officer</td><td>Mr. CHU Chung Sing</td><td>3121 6672</td></tr>
<tr><td>24-hour Hotline</td><td>--</td><td>6898 6161</td><td>--</td></tr>
<tr><td>ET (Cinotech)</td><td>Environmental Team Leader</td><td>Dr. Priscilla Choy</td><td>2151 2089</td><td>3107 1388</td></tr>
</table>

2.8 Ramboll Environ Hong Kong Limited (Ramboll 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:

<u>Land Viaduct (P85 to Abutment at SHT) & Marine Viaduct (P81 - P84)</u>

(a) P81L&R - 3 pours of column were completed in this reporting period.

(b) P82L - ELS excavation works are in progress.

(c) P82R - excavation works and waling installation completed, pile cap work is in progress.

(d) P83L - ELS excavation is in progress.

(e) P83R - 4 pours of column were completed in this reporting period.

(f) Portal Works:

Pier Location	Progress
P84	Falsework erection is in progress
P86	Erection of falsework and soffit formwork is in progress
P87	Removal of steel bracket system was completed
P89	Steel fixing is in progress
P90	Removal of formwork is in progress
P91	Removal of falsework is in progress
P92	Portal was concreted on 17 July 2015
P93	Erection of steel bracket system is in progress

<u>Marine Viaduct (P0 to P80)</u>

<u>Piling Testing, Coring and Grouting (locations other than P68 & P75):</u>

(a) Grouting work was carried out at P18 and P20.

<u>Progress at P68</u>

(a) P68 - L1, L2, L4, R4 and R5 were cast, total 8 nos. complete.

(b) One RCD was set up on R6 casing at end of July 2015 for socket drilling.

<u>Progress at P69</u>

(a) Sheetpiling work at "R" and "L" side are in progress.

Progress at P75

(a) P75 R- side - 4 piles were cast.

(b) Excavation to formation at the L-side continues.

Pile Cap Construction

(a) Precast shells installation - two CP3 at P57.

(b) Stage 1 concreting was completed at P2R, P57, P79 & P80.

(c) Stage 1 works is in progress at P26L.

(d) Stage 2 concreting was completed at P55.

(e) Stage 2 works is in progress at P57 & P79.

(f) Kingpost installation and associated steel welding works for precast shell installation are in progress at P5R.

(g) Advanced concrete trimming (inside casing) works were carried out at P5R, P9, D18-L, D18-R & P56 and concrete trimming (inside cap shell) at P2R, P6, P26L & P57.

(h) Submerged pile cap works with cofferdam:

Pier Location	Side	Progress
P72	L	Backfilling and removal of cofferdam start on 21-Jul-15
	R	Backfilling and removal of cofferdam start on 21-Jul-15
P74	L	Grouting works around bored pile is in progress Trimming of concrete for extension of pile head is in progress
	R	Drilling of grouting holes is in progress Excavation around the footprint of pile cap is in progress
P75	L	Rock excavation is in progress
	R	Rock excavation is in progress

In-situ Column (Single) Construction

(a) 1st lift works is in progress at P1, P7, P11 & P13.
(b) 1st lift concrete was poured at P7, P15 & P58.
(c) 2nd lift works is in progress at P58, P53-Ramp, P59-Ramp & P78.
(d) 2nd lift concrete was poured at P53-Ramp, P54 & P59-Ramp.
(e) Pier head works is in progress at P54 & P70.
(f) Pier head concreting: NIL

Precast Column Erection

Description	Location completed in this reporting period	Number of Units erected/ Number of Columns completed in this reporting period	Cumulative No. of Piers completed (up to 28th of each month)
Commencement (ie. starting from 1st precast unit)	P16, P24	22 (P16, P21, P24, P25, P27-P44)	Commencement (i.e. starting from 1st precast unit)

Description	Location completed in this reporting period	Number of Units erected/ Number of Columns completed in this reporting period	Cumulative No. of Piers completed (up to 28th of each month)
Completion (i.e. completed installation of pier head unit)	Nil	17 (P28-P44)	Completion (i.e. completed installation of pier head unit)
Vertical Tendons Stressed	P30(50%), P32(50%), P33, P35 (50%)	15 (P28, P29, P30(1/2), P32(1/2), P33-P44)	Vertical Tendons Stressed
Grouting Vertical Tendons	P28, P34	11 (P28, P34, P36-P44)	Grouting Vertical Tendons
Pier Head Concrete	P39	6 (P39-P44)	Pier Head Concrete

In-situ Double Blade Column Construction

Pier Location	Side	Progress
P17	L	Poured concrete up to 2nd lift and started to construct 3rd lift
	R	Poured concrete up to 1st lift and 2nd lift in progress
P18	L	All cast in July 2015 during this reporting period, total 7 lifts
	R	Poured concrete up to 6th lift and 7th lift in progress
P72	L	All cast in July 2015, total 3 lifts (including pierhead)
P76	L	Poured concrete up to 1st lift and 2nd lift in progress
	R	Poured concrete up to 1st lift and 2nd lift in progress
P77	L	Poured concrete up to 1st lift and 2nd lift in progress
	R	Poured concrete up to 2nd lift and started to construct 3rd lift

Marine Portal

(a) Removal of temporary supporting platform at Portal P52 & P60 was completed.

Deck Erection

(a) Setting up of Equipment:

Type of Equipment	Status
Lifting Frames 1 (LF1)	Assembly of first set of LF1 at WA4 almost completed. Assembly of the second to fourth set of LF1 is on-going at WA4; Steelwork for the 3rd and 4th set of Lifting Frames is under fabrication with some deliveries commenced.
Lifting Frames 3 (LF3)	Fabrication of LF3 in China is completed for the 8 sets. Most of the major components have been delivered to site. Assembly of the first 4 sets of LF3 is completed and they have started operation at P64. Assembly of the 5th set is completed. The 6th, 7th and 8th sets have been commenced at WA4 and they are targeted to be completed by mid-August.
Launching Gantry 1 (LG1)	Segment erection from P114 to P107 completed; Erection of P106 is in progress.
Launching Gantry 2 (LG2)	Erection of P45 to P48 completed (160 segments in total).

(b) Segment erection:

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*	P108, P107 & P106	60	302
LG2	P45	40	160
LF3	P64	6	6
SOP	P42, P43 & P62	12	54
Long Span SOP	P20	6	6

* *includes crane erection for P109*

Precast Segment

(a) Segment Casting:

- Storage for all types of segments is still a key concern.
- Production affected by inclement weather (8 days).
- 2 nos. of type D & 4 nos. of type CH mould were suspended due to storage issue.
- 4 nos. type E, 10 nos. type A, 6 nos. type CH and 1 no. type B were suspended in Mid-July due to storage issue.
- 6 nos. of segments at storage line 3 were toppled on 13 July 2015. The incident is under investigation.

Item	Number in this reporting period	Cumulative No. of Precast Segment Completed (up to 28th of each month)
Segment Cast	101	2362

(b) Off-site Storage:

Area	No. in Off-site Storage
A1	134
A2	224
A3	174
A4	34 (I/S segment only)

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	Completed	94
CP2	Completed	12

Type of Shell	Number of Precast Shell Cast in this reporting period	Cumulative No. of Precast Shell Completed (up to 28th of each month)
CP3	2	14
CP4	Completed	8
CP5	Completed	6
CP6	Completed	4
CP11	Completed	1
CP12	Completed	1
F1 & F1A	1	2
F2 & F2A	0	0

Precast Column & Precast Pier Head Casting

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

- All casting works for the pier heads with bearing support were completed (total 30 units) and the mould was dismantled in this report period.
- 3 moulds (2 piers and 1 pier head) are now in service for precasting works.
- Totally 23 precast units (16 piers with 6m high, 4 monolithic pier heads and 3 pier heads with bearing support) were cast in this reporting period.
- Cumulatively 277 precast units were cast.

Delivery for Precast Concrete Elements (by barge)

(a) Precast Deck Segments:

- Number of additional barges engaged in this period: 0
- Cumulative number of barges: 14 (2 barges tied up on L/S storage)
- Number of deck segment deliveries in this period: 23 trips
- Cumulative number of deck segment deliveries: 116 trips

Segment Types	Segment Delivered in this reporting period	Cumulative No. of Precast Segment Delivered (up to 28th of each month)
A	57	224
B	0	0
C	2	6
D	3	4
E	74	342

(b) Precast column units:

- Number of additional barges engaged in this period: 0
- Cumulative number of barges: 2

- Number of column unit deliveries in this period: 3 trips
- Cumulative number of column unit deliveries: 33 trips

Unit Types	Number of units delivered in this reporting period	Cumulative No. of Precast Column Delivered (up to 28th of month)
3m	4	23
6m	13	86
PH1	2	22
PH2	0	14

(c) Temporary storage of long span segments:

- 3 barges have been unloaded at CCCC4 yard. 2 barges remain with long span stored with P20 +1, +2. These barges will not unload at CCCC4 and the segments will remain stored on the barges until required for delivery to Hong Kong which is estimated to be mid to late September 2015.

(d) General:

- Delays in the segment unloading continue to impact on the delivery cycle to the extent that there are number of barges overstayed for 14 days in Hong Kong.
- Loading and unloading was impacted by inclement weather (typhoon and heavy rain events).
- It has been necessary to deploy 2 additional barges to columns delivery in order to overcome storage issues and potential stoppages at MBEC precast yard.

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)			
WA7: GW-RW1024-14	13/01/2015(19:00)	12/07/2015(07:00)	Expired
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)	Cancelled on 29 July 2015
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
P53 – P59: GW-RS0314-15	31/03/2015(00:00)	30/09/2015(07:00)	Valid
P101 – P114: GW-RS0364-15	08/04/2015(19:00)	07/07/2015(05:30)	Expired

Permit / License No.	Valid Period		Status
	From	To	
WA4: GW-RW0207-15	29/04/2015(19:00)	28/10/2015(23:00)	Valid
P86: GW-RS0460-15	04/05/2015(00:00)	31/08/2015(05:30)	Valid
P100 – P111: GW-RS0487-15	07/05/2015(23:00)	06/11/2015(07:00)	Valid
P75 – P80: GW-RS0508-15	13/05/2015(19:00)	12/07/2015(24:00)	Cancelled on 6 July 2015
P69 – P74: GW-RS0584-15	01/06/2015(00:00)	30/11/2015(24:00)	Valid
P101 – P114: GW-RS0715-15	07/07/2015(19:00)	31/10/2015(05:30)	Valid
P75 – P80: GW-RS0730-15	17/07/2015(19:00)	05/01/2016(24:00)	Valid
P0 – P68: GW-RS0783-15	17/07/2015(19:00)	13/01/2016(24:00)	Valid
P81 – 83: GW-RS0814-15	30/07/2015(19:00)	29/01/2016(24:00)	Valid
P81 – 115: GW-RS0818-15	29 /07/2015(19:00)	28/01/2016(23:00)	Valid
P75 – 80: GW-RS0829-15	30 /07/2015(19:00)	31/12/2015(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)	22/05/2015	31/08/2015	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
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
P81-P83: WT00021946-2015	08/07/2015	31/07/2020	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

Permit / License No.	Valid Period		Status
	From	To	
Cross-border dumping of dredged sediment of Category L and Category Mp at Erzhou Island in China EP/MD/16-045	21/07/2015	20/08/2015	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/m^3	Limit Level, μg/m^3
	Average	Range		
AMS1	34	7 – 213	381	500
AMS4	43	11 – 279	352	

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

Monitoring Station	Concentration (μg/m3)		Action Level, μg/m^3	Limit Level, μg/m^3
	Average	Range		
AMS1	42	21 – 74	170	260
AMS4	25	17 – 35	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	70	67 – 71	75 dB(A)
NMS4	58	52 – 63	

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 $\pm$ 1.75 hours of the predicted time) and mid flood tides (within $\pm$ 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**.

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

5.39 According to the investigation, no pollution discharge was observed from the site. In addition, adverse water quality outside the site boundary and 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 also observed. Therefore, the exceedances are considered not due to the Contract.

Event and Action Plan

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

6 DOLPHIN-RELATED MONITORING

Monitoring Requirements

6.1 According to Section 10 of the EM&A Manual, four kinds of ecological monitoring works are required during the construction phase, namely dolphin monitoring, construction-phase underwater noise monitoring, dolphin behavior monitoring and land-based dolphin behavior and movement monitoring. The 30 days of construction-phase underwater noise monitoring, dolphin behavior monitoring and land-based dolphin behavior and movement monitoring were completed in July 2013.

6.2 The monitoring work shall be undertaken by suitably qualified specialist(s), (i.e. dolphin specialist and bio-acoustician), who shall have sufficient (at least 5-10 years) relevant post-graduate experience and publication in the respective aspects. They should be approved by Agriculture, Fisheries and Conservation Department (AFCD) and Environmental Protection Department (EPD).

Dolphin Monitoring (Line-transect Vessel Survey)

Monitoring Requirements

6.3 According to EM&A Manual Section 10.3.2, a dolphin monitoring programme should be set up to verify the predictions of impacts and to ensure that there are no unforeseen impacts on the dolphin population during construction phase.

6.4 Following the requirement in the EM&A Manual Section 10.4.1, the dolphin monitoring should adopt line-transect vessel survey method, and cover the following line-transect survey areas as in AFCD annual marine mammal monitoring programme.

Monitoring Location

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

Table 6.1 Co-ordinates of transect lines in WL survey area

Line No.		Easting	Northing	Line No.		Easting	Northing
1	Start Point	803750	818500	7	Start Point	800200	810450
1	End Point	803750	815500	7	End Point	801400	810450
2	Start Point	803750	815500	8	Start Point	801300	809450
2	End Point	802940	815500	8	End Point	799750	809450
3	Start Point	802550	814500	9	Start Point	799400	808450
3	End Point	803700	814500	9	End Point	801430	808450
4	Start Point	803120	813600	10	Start Point	801500	807450
4	End Point	801640	813600	10	End Point	799600	807450

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

Monitoring Frequency

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

Monitoring Day

6.7 Dolphin monitoring was carried out on 6th and 28th July 2015. The dolphin monitoring schedule for the reporting period is shown in **Appendix D**.

Monitoring Results

6.8 From these surveys, a total of 67.86 km of survey effort was collected, with 93.8% 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 67.86 km of survey effort, the total survey effort conducted on primary lines (the horizontal lines perpendicular to the coastlines) was 46.28 km.

6.9 7 groups of 38 Chinese White Dolphins were sighted from primary lines. Distribution of the 10 dolphin sightings made during July's surveys is shown in **Figure 4 of Appendix I**. Six of the ten dolphin sightings were concentrated near Tai O Peninsula toward the northern end of the WL survey area, while the other four sightings were located near Peaked Hill and Fan Lau. Notably, one dolphin sighting with a lone individual was made in the vicinity of the HKLR09 alignment (**Figure 4 of Appendix I**).

6.10 Dolphin encounter rates deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) are shown in **Table 6.2**.

Table 6.2 Dolphin encounter rates (sightings per 100 km of survey effort) in July'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: July 6th	13.1	74.5
	Set 2: July 28th	13.2	66.0

6.11 The average group size of Chinese White Dolphins was 5.0 individuals per group during July's surveys, which was higher than the ones in previous months of monitoring surveys.

6.12 Over half of dolphin groups were composed of only 1-4 animals, while four larger groups had group sizes of 6-12 animals per group, including a group of 12 animals feeding near a purse-seiner at Fan Lau.

6.13 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.

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

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

Additional Land-based Dolphin Behaviour and Movement Monitoring

6.16 Additional land-based dolphin behavior and movement monitoring was conducted on 6th and 16th July 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 July 2015

Date	Time	Weather		Number of Staff	Number of Dolphin Sighting
		Beaufort	Visibility		
06/07/15	09:22 - 14:53	2	2-3	3	3
16/07/15	09:28 - 14:44	2	2	3	2

6.17 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 7th, 14th, 21st and 28th July 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 28th July 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 10th inspection to the Sha Lo Wan (West) Archaeological Site was conducted on 23th June 2015 and next inspection will be conducted in September 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	07/07/2015	To repair the damaged silt curtain at P74.	Rectification/improvement was observed during the follow-up audit session on 14 July 2015.
	07/07/2015	Muddy sediment was observed discharged into the sea at P75. The Contractor was reminded to dispose it properly.	Rectification/improvement was observed during the follow-up audit session on 14 July 2015.
	14/07/2015	Clear the waste materials at the platform at P20 to avoid falling into the sea.	Rectification/improvement was observed during the follow-up audit session on 21 July 2015.
	14/07/2015	Provide mitigation measures to avoid the leakage of water from site to the public road (near P111).	Rectification/improvement was observed during the follow-up audit session on 21 July 2015.
	21/07/2015	Provision of sedimentation facilities according to effluent discharge license at P81 and P82.	Rectification/improvement was not observed during the follow-up audit session on 28 July 2015.
	21/07/2015	Provide mitigation measures to avoid muddy water directly discharge to the gullies at between P82 and P83.	Rectification/improvement was observed during the follow-up audit session on 28 July 2015.
	28/07/2015	Provide mitigation measures to avoid the fine materials falling into the sea through the gap at the platform at P7.	Rectification/improvement was observed during the follow-up audit session on 4 August 2015.
	28/07/2015	Clear the loose material at the platform at P78.	Rectification/improvement was observed during the follow-up audit session on 4 August 2015.
	28/07/2015	Properly repair the damaged part of silt curtain at P78.	Rectification/improvement was observed during the follow-up audit session on 4 August 2015.
Ecology	21/07/2015	To remove the construction wastes at near the trees at P90.	Rectification/improvement was observed during the follow-up audit session on 28 July 2015.
Air Quality	07/07/2015	To provide proper shelter (3 sides and on top) for dusty materials at P74.	Rectification/improvement was observed during the follow-up audit session on 14 July 2015.
Noise	28/07/2015	Provide noise emission label for the air compressor at P7.	Rectification/improvement was observed during the follow-up audit session on 4 August 2015.
	28/07/2015	Provide acoustic decoupling measures for the generator on barge at P7.	Rectification/improvement was observed during the follow-up audit session on 4 August 2015.
	28/07/2015	Ensure the noise enclosure is fully enclosed the equipment at P78.	Rectification/improvement was observed during the follow-up audit session on 4 August 2015.
Waste / Chemical	07/07/2015	Clear the oil stains at P74.	Rectification/improvement

Parameters	Date	Observations and Recommendations	Follow-up
Management			was observed during the follow-up audit session on 14 July 2015.
	14/07/2015	Provide tarpaulin sheet at underneath of pressure relief joint to avoid oil spillage at P20.	Rectification/improvement was observed during the follow-up audit session on 21 July 2015.
	14/07/2015	Provide drip tray for the generator at P20.	Rectification/improvement was observed during the follow-up audit session on 21 July 2015.
	14/07/2015	Clear the rubbish at near container office (P113).	Rectification/improvement was observed during the follow-up audit session on 21 July 2015.
	21/07/2015	Clear the accumulated construction wastes at P84 and P85.	Rectification/improvement was observed during the follow-up audit session on 28 July 2015.
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)	N/A(2)	N/A(2)	N/A(2)

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

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

Advice on the Solid and Liquid Waste Management Status

7.10 According to the Contractor, 293m^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 There are four Action Level and six Limit Level exceedances for suspended solids were recorded. No Action/Limit Level exceedance for dissolved oxygen and turbidity were recorded. According to the investigation, no pollution discharge was observed from the site. In addition, adverse water quality outside the site boundary and 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 also observed. Therefore, the exceedances are considered not due to the Contract.

Summary of Environmental Complaint

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

Summary of Notification of Summons and Successful Prosecution

8.5 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 lifting frames
- Deliveries of frame structures

WA7

- Fabrication of cofferdam frame structures
- Maintenance of Reverse Circulation Drill (RCD) equipment

Marine Viaduct (P0 to P80)

- Inter-face coring tests
- Full depth coring test
- Sonic test
- Grouting work
- Casing installation
- Installation of sheetpiles on cofferdam
- RCD excavation

Pile Cap Construction:

- Installation of precast cap shells
- Concreting
- Kingpost installation and associated steel welding works
- Concreting trimming
- Rock excavation
- Steel Fixing works of pile cap

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

Precast Column Erection

- Installation of base units and precast units
- Stressing of vertical nailing tendons

Deck Erection

- Setting up of equipment
- Fabrication of Lifting Frames (LF)
- Segment erection

Precast Segment

- Segment casting

Land Viaduct (P81 to Abutment at Scenic Hill Tunnel (SHT))

- Excavation works
- ELS excavation
- Pier head construction
- Installation of steel bracket and girder system
- Removal of formwork & falsework
- Erection of soffit formwork was completed, formwork & falsework erection
- Steel fixing
- Nailing work and removal of formwork

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 July 2015 in accordance with EM&A Manual.

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

10.3 There are four Action Level and six Limit Level exceedances for suspended solids were recorded. No Action/Limit Level exceedance for dissolved oxygen and turbidity were recorded. According to the investigation, no pollution discharge was observed from the site. In addition, adverse water quality outside the site boundary and 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 also observed. Therefore, the exceedances are considered not due to the Contract.

10.4 Dolphin transect survey was carried out on 6th and 28th July 2015. No adverse impact on Chinese White Dolphins was noticeable from general observations.

10.5 Two days of additional Land-based Dolphin Behaviour and Movement Monitoring were conducted on 6th and 16th July 2015.

10.6 Environmental site inspection was conducted on 7th, 14th, 21st and 28th July 2015 by ET in the reporting month. All deficiencies identified during the site inspection have already rectified / improved during the follow-up audit session.

10.7 No inspection to the Sha Lo Wan (West) Archaeological Site was conducted in the reporting month.

10.8 There was no environmental complaint, no notification of summons and successful prosecution received in the reporting month.

10.9 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

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

Air Quality Impact

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

Noise Impact

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

Water Impact

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

Ecology Impact

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

to acoustic decoupling measures plan.

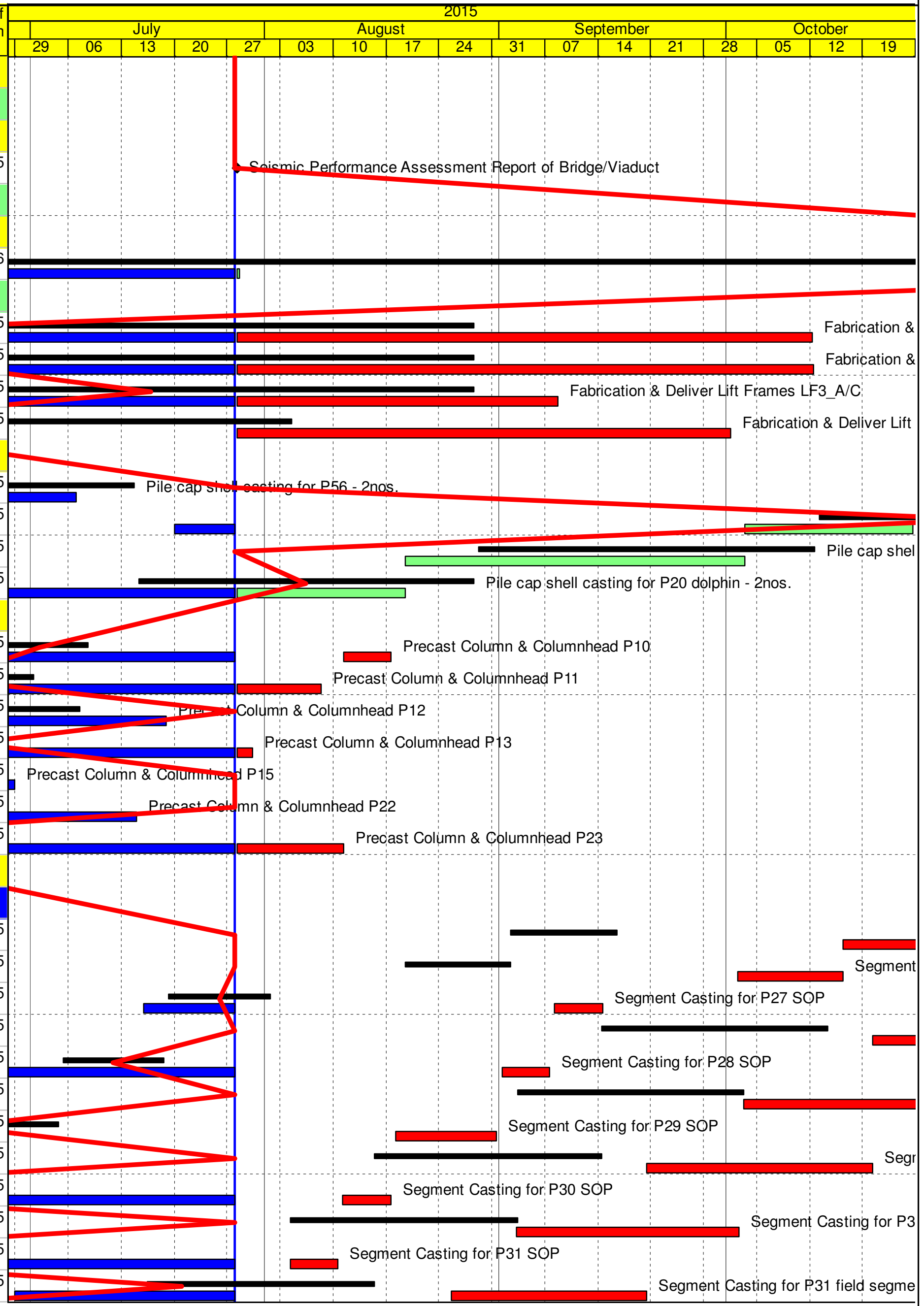
Waste/Chemical Management

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

APPENDIX A
CONSTRUCTION PROGRAMME

Dragages - China Harbour - VSL Joint Venture

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1507 Start	1507 Finish	DWP01f Start	DWP01f Finish
HKZB Hong Kong Link Road - 3 Months Rolling Programme 1507 (based on DWP_01_f Final)								
Design and Design Checking of the Works								
General Design Submission								
GDS1150	Seismic Performance Assessment Report of Bridge/Viaduct	0	0	0%		28/7/15*		31/5/15
Project General Submission								
Interface Contract								
PGS1950	Complete deck construction by Mainland section at P0	243	1	99.59%	7/3/14 A	28/7/15	31/5/15	28/1/16
Procurement and Fabrication								
PGS2485	Fabrication & Deliver Lift Frames LF1_1	90	76	15.42%	1/1/15 A	12/10/15	31/5/15	28/8/15
PGS2488	Fabrication & Deliver Lift Frames LF1_2	90	77	15%	2/3/15 A	12/10/15	31/5/15	28/8/15
PGS2495	Fabrication & Deliver Lift Frames LF3_A/C	90	43	52.22%	1/5/15 A	8/9/15	31/5/15	28/8/15
PGS2505	Fabrication & Deliver Lift Frames LF3_A/C/D	66	66	0%	28/7/15	1/10/15	31/5/15	4/8/15
Pile Cap Shell Casting								
PC1520	Pile cap shell casting for P56 - 2nos.	30	0	100%	17/6/15 A	7/7/15 A	15/6/15	14/7/15
PC1710	Pile cap shell casting for P18 dolphin - 2nos.	45	23	50%	20/7/15 A	25/10/15	13/10/15	26/11/15
PC1720	Pile cap shell casting for P19 dolphin - 2nos.	45	45	0%	19/8/15	3/10/15	29/8/15	12/10/15
PC1730	Pile cap shell casting for P20 dolphin - 2nos.	45	23	50%	4/6/15 A	19/8/15	15/7/15	28/8/15
Column Casting								
PC1830	Precast Column & Columnhead P10	17	6	62.5%	25/5/15 A	17/8/15	21/6/15	8/7/15
PC1840	Precast Column & Columnhead P11	17	11	33.3%	18/5/15 A	8/8/15	14/6/15	1/7/15
PC1850	Precast Column & Columnhead P12	21	0	100%	11/5/15 A	19/7/15 A	16/6/15	7/7/15
PC1860	Precast Column & Columnhead P13	21	2	90%	12/5/15 A	30/7/15	4/6/15	25/6/15
PC1880	Precast Column & Columnhead P15	29	0	100%	4/5/15 A	29/6/15 A	13/5/15	10/6/15
PC1910	Precast Column & Columnhead P22	29	0	100%	23/1/15 A	15/7/15 A	13/5/15	10/6/15
PC1920	Precast Column & Columnhead P23	29	15	50%	9/4/15 A	11/8/15	13/5/15	10/6/15
Segment Casting								
Type A Segment (2 set SOP, 8 set Field Seg.)								
SC5188	Segment Casting for P25 SOP	14	14	0%	16/10/15	30/10/15	2/9/15	16/9/15
SC5208	Segment Casting for P26 SOP	14	14	0%	2/10/15	16/10/15	19/8/15	2/9/15
SC5228	Segment Casting for P27 SOP	14	7	50%	16/7/15 A	14/9/15	19/7/15	1/8/15
SC5238	Segment Casting for P27 field segment	30	30	0%	20/10/15	19/11/15	14/9/15	14/10/15
SC5248	Segment Casting for P28 SOP	14	7	50%	16/6/15 A	7/9/15	5/7/15	18/7/15
SC5258	Segment Casting for P28 field segment	30	30	0%	3/10/15	1/11/15	3/9/15	3/10/15
SC5268	Segment Casting for P29 SOP	14	14	0%	18/8/15	31/8/15	21/6/15	4/7/15
SC5278	Segment Casting for P29 field segment	30	30	0%	20/9/15	20/10/15	15/8/15	14/9/15
SC5288	Segment Casting for P30 SOP	14	7	50%	4/5/15 A	17/8/15	13/5/15	26/5/15
SC5298	Segment Casting for P30 field segment	30	30	0%	3/9/15	2/10/15	4/8/15	3/9/15
SC5308	Segment Casting for P31 SOP	14	7	50%	21/4/15 A	10/8/15	13/5/15	26/5/15
SC5318	Segment Casting for P31 field segment	30	26	15%	29/6/15 A	20/9/15	16/7/15	15/8/15



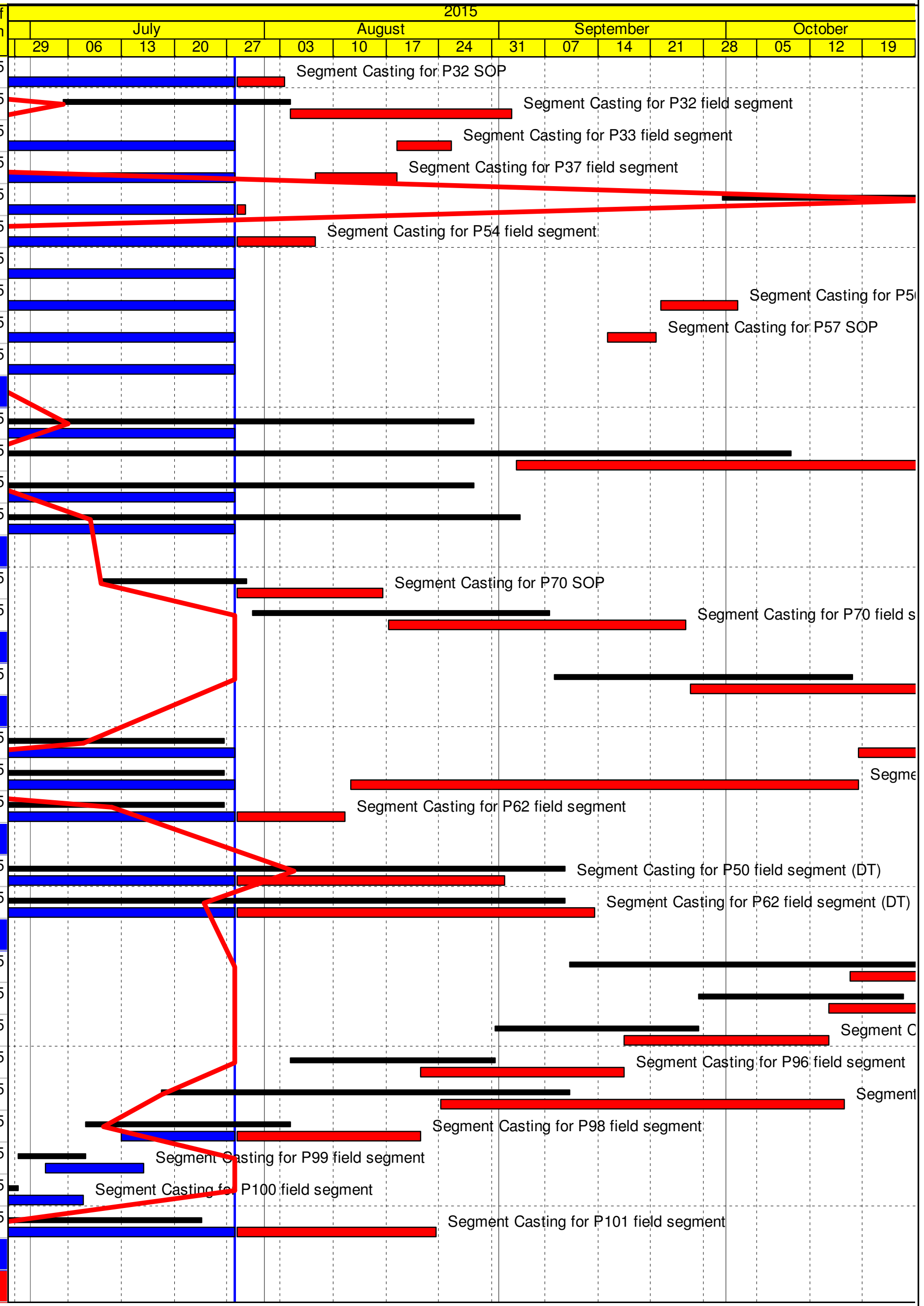
DWP_01f Programme | Remaining Work | ◆ Milestone
Actual Work | Critical Remaining Work

3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

Dragages - China Harbour - VSL Joint Venture

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1507 Start	1507 Finish	DWP01f Start	DWP01f Finish
SC5328	Segment Casting for P32 SOP	14	7	50%	20/1/15 A	3/8/15	13/5/15	26/5/15
SC5338	Segment Casting for P32 field segment	30	30	0%	4/8/15	2/9/15	5/7/15	4/8/15
SC5358	Segment Casting for P33 field segment	30	8	75%	28/4/15 A	25/8/15	22/5/15	20/6/15
SC5438	Segment Casting for P37 field segment	30	11	65%	21/10/14 A	18/8/15	22/5/15	20/6/15
SC5738	Segment Casting for P53 field segment	30	2	95%	25/5/15 A	29/7/15	30/9/15	30/10/15
SC5758	Segment Casting for P54 field segment	30	11	64%	15/12/14 A	7/8/15	13/5/15	11/6/15
SC5778	Segment Casting for P55 field segment	30	15	50%	3/1/15 A	16/12/15	22/5/15	20/6/15
SC5788	Segment Casting for P56 SOP	14	11	25%	18/5/15 A	2/10/15	31/5/15	13/6/15
SC5808	Segment Casting for P57 SOP	14	7	50%	18/5/15 A	21/9/15	31/5/15	13/6/15
SC5858	Segment Casting for P59 field segment	30	1	97.4%	15/1/15 A	20/12/15	22/5/15	20/6/15
Type B Segment (1 set)								
SC6149	Segment Casting for P55 field segment	108	54	50%	7/7/14 A	25/1/17	13/5/15	28/8/15
SC6169	Segment Casting for P57 field segment	108	108	0%	3/9/15	20/12/15	23/6/15	9/10/15
SC6179	Segment Casting for P58 field segment	108	63	41.7%	12/5/15 A	27/2/16	13/5/15	28/8/15
SC6189	Segment Casting for P59 field segment	114	57	50%	3/1/15 A	24/4/16	13/5/15	3/9/15
Type C Segment (2 set_Modify by Type D)								
SC6238	Segment Casting for P70 SOP	20	20	0%	28/7/15*	16/8/15	10/7/15	29/7/15
SC6239	Segment Casting for P70 field segment	40	40	0%	17/8/15	25/9/15	30/7/15	7/9/15
Type CV Segment (1 set)								
SC6268	Segment Casting for P81 SOP (CV)	40	40	0%	26/9/15	4/11/15	8/9/15	17/10/15
Type D Segment (2 set)								
SC6058	Segment Casting for P51 field segment	75	19	75%	6/9/14 A	6/11/15	13/5/15	26/7/15
SC6089	Segment Casting for P61 field segment	75	68	10%	11/5/15 A	18/10/15	13/5/15	26/7/15
SC6099	Segment Casting for P62 field segment	75	15	80%	19/10/14 A	11/8/15	13/5/15	26/7/15
Type DT Segment (1 set)								
SC6608	Segment Casting for P50 field segment (DT)	120	36	70%	11/1/15 A	1/9/15	13/5/15	9/9/15
SC6618	Segment Casting for P62 field segment (DT)	120	48	60%	17/1/15 A	13/9/15	13/5/15	9/9/15
Type E Segment (4 set for E & 2 set for EV)								
SC6328	Segment Casting for P88 field segment (EV)	54	54	0%	17/10/15	9/12/15	10/9/15	3/11/15
SC6388	Segment Casting for P94 field segment	27	27	0%	14/10/15	10/11/15	27/9/15	24/10/15
SC6398	Segment Casting for P95 field segment	27	27	0%	17/9/15	14/10/15	31/8/15	27/9/15
SC6408	Segment Casting for P96 field segment	27	27	0%	21/8/15	17/9/15	4/8/15	31/8/15
SC6418	Segment Casting for P97 field segment	54	54	0%	24/8/15	16/10/15	18/7/15	10/9/15
SC6428	Segment Casting for P98 field segment	27	25	8.3%	13/7/15 A	21/8/15	8/7/15	4/8/15
SC6438	Segment Casting for P99 field segment	9	0	100%	3/7/15 A	16/7/15 A	29/6/15	8/7/15
SC6448	Segment Casting for P100 field segment	27	0	100%	3/6/15 A	8/7/15 A	2/6/15	29/6/15
SC6458	Segment Casting for P101 field segment	54	27	50%	6/5/15 A	23/8/15	31/5/15	23/7/15
Type CH&CHV Segment (2 set SOP & 10 set Field Seg.)								
ML03 (P17 TO P20)								



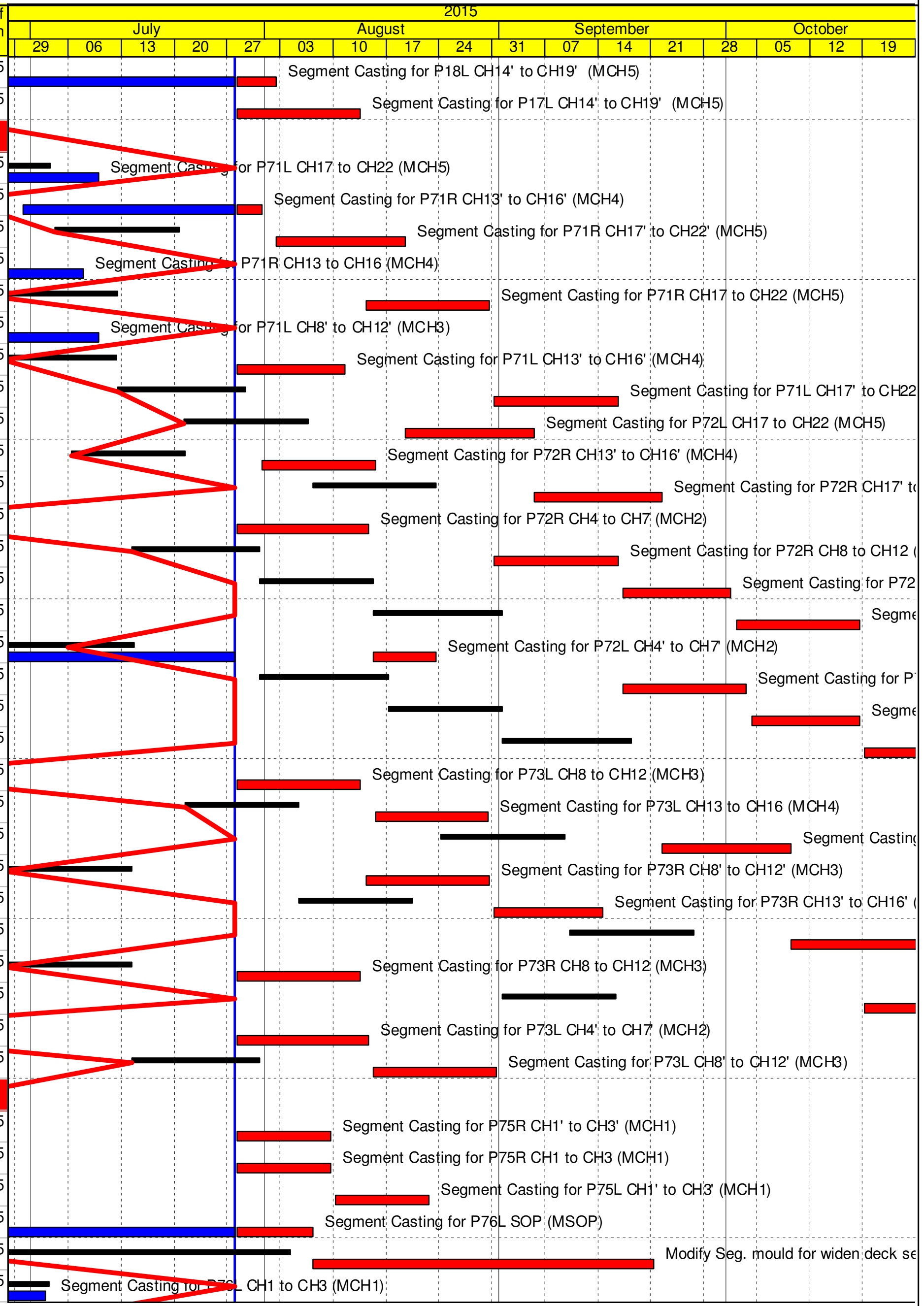
DWP_01f Programme | Remaining Work | ◆ Milestone
Actual Work | Critical Remaining Work

3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

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

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1507 Start	1507 Finish	DWP01f Start	DWP01f Finish
SC1498	Segment Casting for P18L CH14' to CH19' (MCH5)	17	6	66.7%	23/6/15 A	2/8/15	31/5/15	16/6/15
SC1678	Segment Casting for P17L CH14' to CH19' (MCH5)	17	17	0%	28/7/15	13/8/15	8/6/15	25/6/15
ML11 (P71 TO P73)								
SC1728	Segment Casting for P71L CH17 to CH22 (MCH5)	17	0	100%	1/6/15 A	10/7/15 A	17/6/15	3/7/15
SC1768	Segment Casting for P71R CH13' to CH16' (MCH4)	15	4	75%	30/6/15 A	31/7/15	10/6/15	25/6/15
SC1778	Segment Casting for P71R CH17' to CH22' (MCH5)	17	17	0%	2/8/15	19/8/15	4/7/15	20/7/15
SC1828	Segment Casting for P71R CH13 to CH16 (MCH4)	15	0	100%	20/6/15 A	8/7/15 A	10/6/15	25/6/15
SC1838	Segment Casting for P71R CH17 to CH22 (MCH5)	17	17	0%	14/8/15	30/8/15	25/6/15	12/7/15
SC1868	Segment Casting for P71L CH8' to CH12' (MCH3)	17	0	100%	17/6/15 A	10/7/15 A	10/6/15	27/6/15
SC1878	Segment Casting for P71L CH13' to CH16' (MCH4)	15	15	0%	28/7/15	11/8/15	27/6/15	12/7/15
SC1888	Segment Casting for P71L CH17' to CH22' (MCH5)	17	17	0%	31/8/15	16/9/15	12/7/15	29/7/15
SC1948	Segment Casting for P72L CH17 to CH22 (MCH5)	17	17	0%	19/8/15	5/9/15	21/7/15	6/8/15
SC1988	Segment Casting for P72R CH13' to CH16' (MCH4)	15	15	0%	31/7/15	15/8/15	6/7/15	21/7/15
SC1998	Segment Casting for P72R CH17' to CH22' (MCH5)	17	17	0%	5/9/15	22/9/15	7/8/15	23/8/15
SC2028	Segment Casting for P72R CH4 to CH7 (MCH2)	18	18	0%	28/7/15	14/8/15	9/6/15	26/6/15
SC2038	Segment Casting for P72R CH8 to CH12 (MCH3)	17	17	0%	31/8/15	16/9/15	14/7/15	31/7/15
SC2048	Segment Casting for P72R CH13 to CH16 (MCH4)	15	15	0%	17/9/15	1/10/15	31/7/15	15/8/15
SC2058	Segment Casting for P72R CH17 to CH22 (MCH5)	17	17	0%	2/10/15	18/10/15	15/8/15	1/9/15
SC2078	Segment Casting for P72L CH4' to CH7' (MCH2)	18	9	50%	5/6/15 A	23/8/15	27/6/15	14/7/15
SC2088	Segment Casting for P72L CH8' to CH12' (MCH3)	17	17	0%	17/9/15	3/10/15	31/7/15	17/8/15
SC2098	Segment Casting for P72L CH13' to CH16' (MCH4)	15	15	0%	4/10/15	18/10/15	17/8/15	1/9/15
SC2108	Segment Casting for P72L CH17' to CH22' (MCH5)	17	17	0%	19/10/15	4/11/15	1/9/15	18/9/15
SC2148	Segment Casting for P73L CH8 to CH12 (MCH3)	17	17	0%	28/7/15	13/8/15	10/6/15	27/6/15
SC2158	Segment Casting for P73L CH13 to CH16 (MCH4)	15	15	0%	15/8/15	30/8/15	21/7/15	5/8/15
SC2168	Segment Casting for P73L CH17 to CH22 (MCH5)	17	17	0%	22/9/15	9/10/15	24/8/15	9/9/15
SC2198	Segment Casting for P73R CH8' to CH12' (MCH3)	17	17	0%	14/8/15	30/8/15	27/6/15	14/7/15
SC2208	Segment Casting for P73R CH13' to CH16' (MCH4)	15	15	0%	31/8/15	14/9/15	5/8/15	20/8/15
SC2218	Segment Casting for P73R CH17' to CH22' (MCH5)	17	17	0%	9/10/15	26/10/15	10/9/15	26/9/15
SC2258	Segment Casting for P73R CH8 to CH12 (MCH3)	17	17	0%	28/7/15	13/8/15	27/6/15	14/7/15
SC2268	Segment Casting for P73R CH13 to CH16 (MCH4)	15	15	0%	19/10/15	2/11/15	1/9/15	16/9/15
SC2298	Segment Casting for P73L CH4' to CH7' (MCH2)	18	18	0%	28/7/15	14/8/15	31/5/15	17/6/15
SC2308	Segment Casting for P73L CH8' to CH12' (MCH3)	17	17	0%	15/8/15	31/8/15	14/7/15	31/7/15
ML12 (P75 TO P77)								
SC2838	Segment Casting for P75R CH1' to CH3' (MCH1)	13	13	0%	28/7/15	9/8/15	31/5/15	12/6/15
SC2898	Segment Casting for P75R CH1 to CH3 (MCH1)	13	13	0%	28/7/15	9/8/15	31/5/15	12/6/15
SC2948	Segment Casting for P75L CH1' to CH3' (MCH1)	13	13	0%	10/8/15	22/8/15	13/6/15	25/6/15
SC2998	Segment Casting for P76L SOP (MSOP)	35	10	70.86%	21/1/15 A	7/8/15	13/5/15	16/6/15
SC2999	Modify Seg. mould for widen deck section (MSOP)	45	45	0%	7/8/15	21/9/15	20/6/15	4/8/15
SC3008	Segment Casting for P76L CH1 to CH3 (MCH1)	13	0	100%	13/6/15 A	3/7/15 A	20/6/15	3/7/15

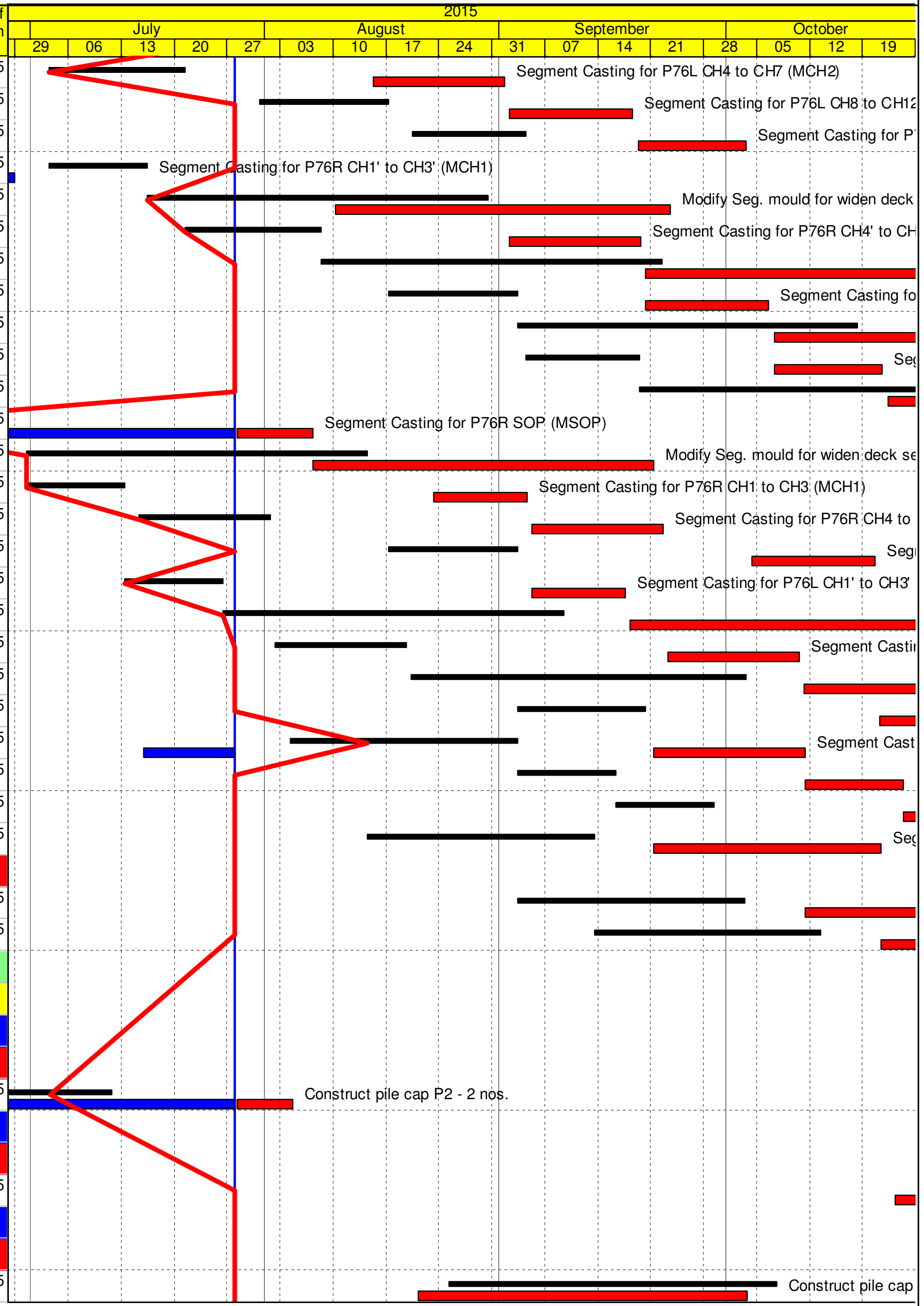


DWP_01f Programme
Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1507 Start	1507 Finish	DWP01f Start	DWP01f Finish
SC3018	Segment Casting for P76L CH4 to CH7 (MCH2)	18	18	0%	15/8/15	1/9/15	3/7/15	21/7/15
SC3028	Segment Casting for P76L CH8 to CH12 (MCH3)	17	17	0%	2/9/15	18/9/15	31/7/15	17/8/15
SC3038	Segment Casting for P76L CH13 to CH16 (MCH4)	15	15	0%	19/9/15	3/10/15	20/8/15	4/9/15
SC3058	Segment Casting for P76R CH1' to CH3' (MCH1)	13	0	100%	10/6/15 A	29/6/15 A	3/7/15	16/7/15
SC3059	Modify Seg. mould for widen deck section (MCH1)	45	45	0%	10/8/15	23/9/15	16/7/15	30/8/15
SC3068	Segment Casting for P76R CH4' to CH7' (MCH2)	18	18	0%	2/9/15	19/9/15	21/7/15	8/8/15
SC3069	Modify Seg. mould for widen deck section (MCH2)	45	45	0%	20/9/15	3/11/15	8/8/15	22/9/15
SC3078	Segment Casting for P76R CH8' to CH12' (MCH3)	17	17	0%	20/9/15	6/10/15	17/8/15	3/9/15
SC3079	Modify Seg. mould for widen deck section (MCH3)	45	45	0%	7/10/15	20/11/15	3/9/15	18/10/15
SC3088	Segment Casting for P76R CH13' to CH16' (MCH4)	15	15	0%	7/10/15	21/10/15	4/9/15	19/9/15
SC3089	Modify Seg. mould for widen deck section (MCH4)	45	45	0%	22/10/15	5/12/15	19/9/15	3/11/15
SC3107	Segment Casting for P76R SOP (MSOP)	35	10	70.86%	21/1/15 A	7/8/15	13/5/15	16/6/15
SC3108	Modify Seg. mould for widen deck section (MSOP)	45	45	0%	7/8/15	21/9/15	30/6/15	14/8/15
SC3118	Segment Casting for P76R CH1 to CH3 (MCH1)	13	13	0%	23/8/15	4/9/15	30/6/15	13/7/15
SC3128	Segment Casting for P76R CH4 to CH7 (MCH2)	18	18	0%	5/9/15	22/9/15	15/7/15	1/8/15
SC3138	Segment Casting for P76R CH8 to CH12 (MCH3)	17	17	0%	4/10/15	20/10/15	17/8/15	3/9/15
SC3168	Segment Casting for P76L CH1' to CH3' (MCH1)	13	13	0%	5/9/15	17/9/15	13/7/15	26/7/15
SC3169	Modify Seg. mould for widen deck section (MCH1)	45	45	0%	18/9/15	1/11/15	26/7/15	9/9/15
SC3178	Segment Casting for P76L CH4' to CH7' (MCH2)	18	18	0%	23/9/15	10/10/15	2/8/15	19/8/15
SC3179	Modify Seg. mould for widen deck section (MCH2)	45	45	0%	11/10/15	24/11/15	20/8/15	3/10/15
SC3188	Segment Casting for P76L CH8' to CH12' (MCH3)	17	17	0%	21/10/15	6/11/15	3/9/15	20/9/15
SC3218	Segment Casting for P77L SOP (MSOP)	30	20	33.4%	16/7/15 A	11/10/15	4/8/15	3/9/15
SC3228	Segment Casting for P77L CH1 to CH3 (MCH1)	13	13	0%	11/10/15	24/10/15	3/9/15	16/9/15
SC3278	Segment Casting for P77R CH1' to CH3' (MCH1)	13	13	0%	24/10/15	6/11/15	16/9/15	29/9/15
SC3328	Segment Casting for P77R SOP (MSOP)	30	30	0%	21/9/15	21/10/15	14/8/15	13/9/15
ML13 (P79 TO P80)								
SC3878	Segment Casting for P79L SOP (MSOP)	30	30	0%	11/10/15	10/11/15	3/9/15	3/10/15
SC3988	Segment Casting for P79R SOP (MSOP)	30	30	0%	21/10/15	20/11/15	13/9/15	13/10/15
Viaduct between HKSAR Boundary and Landing Point on Airport Island								
ML01L/R 75mx8 - Stage 4 of Works								
Pier P2L/R								
Pile Cap Construction								
WW1210	Construct pile cap P2 - 2 nos.	30	6	80%	17/4/15 A	4/8/15	1/6/15	11/7/15
Pier P3L/R								
Column Construction								
WW1300	Construct column P3 - 2 nos. (in-situ section)	12	12	0%	23/10/15	5/11/15	26/10/15	7/11/15
Pier P5L/R								
Pile Cap Construction								
WW1450	Construct pile cap P5 - 2 nos.	30	30	0%	21/8/15	3/10/15	25/8/15	7/10/15



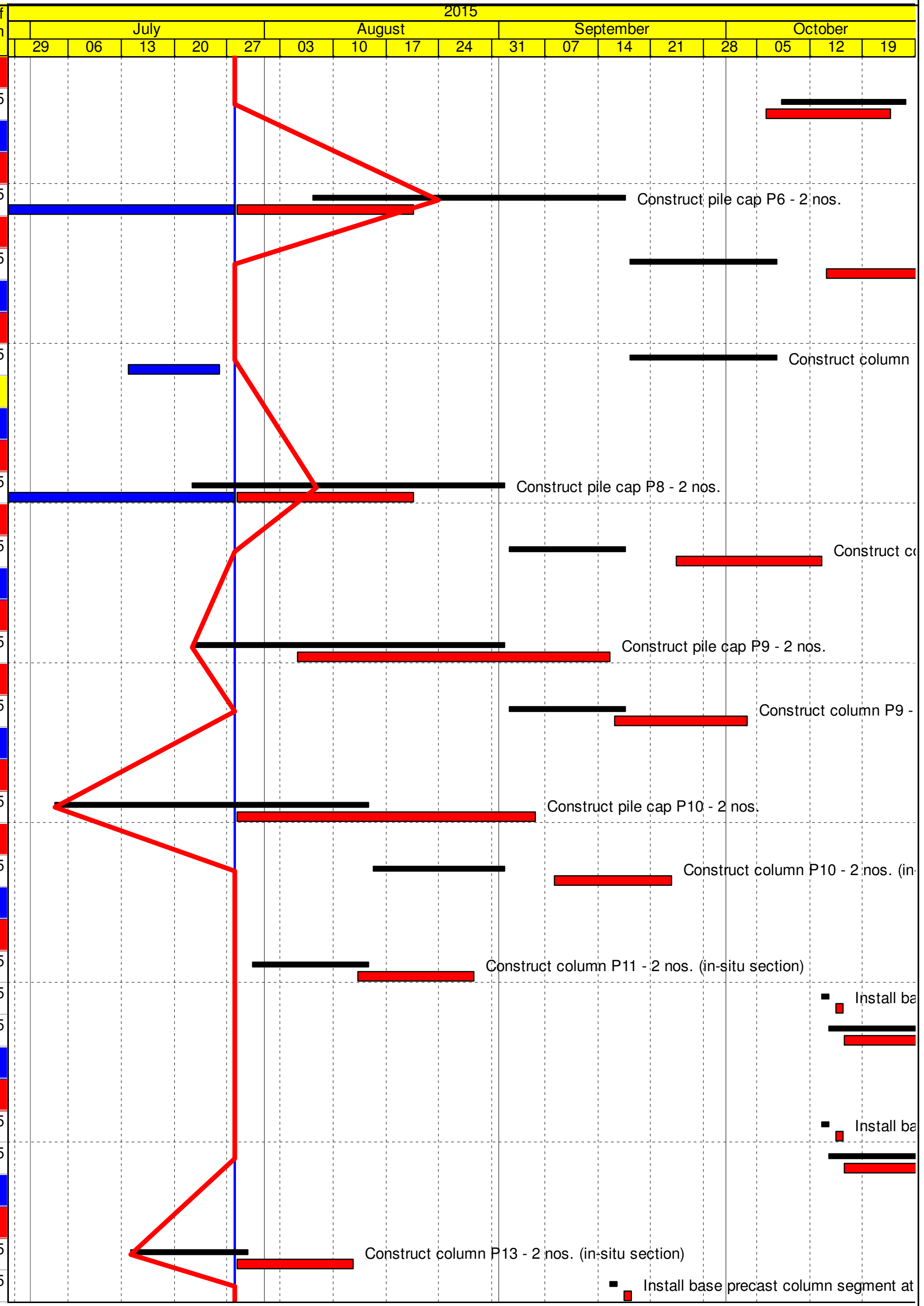
DWP_01f Programme
Actual Work
Remaining Work
Critical Remaining Work
◆ Milestone

3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

Dragages - China Harbour - VSL Joint Venture

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1507 Start	1507 Finish	DWP01f Start	DWP01f Finish
Column Construction								
WW1460	Construct column P5 - 2 nos. (in-situ section)	12	12	0%	6/10/15	22/10/15	8/10/15	24/10/15
Pier P6L/R								
Pile Cap Construction								
WW1530	Construct pile cap P6 - 2 nos.	30	18	40%	26/6/15 A	20/8/15	7/8/15	17/9/15
Column Construction								
WW1540	Construct column P6 - 2 nos. (in-situ section)	12	12	0%	14/10/15	29/10/15	18/9/15	7/10/15
Pier P7L/R								
Column Construction								
WW1620	Construct column P7 - 2 nos. (in-situ section)	12	0	100%	14/7/15 A	26/7/15 A	18/9/15	7/10/15
ML02L/R 75mx8 - Stage 4 of Works								
Pier P8L/R (M.J.)								
Pile Cap Construction								
WW1690	Construct pile cap P8 - 2 nos.	30	18	40%	28/6/15 A	20/8/15	22/7/15	1/9/15
Column Construction								
WW1700	Construct column P8 - 2 nos. (in-situ section)	12	12	0%	24/9/15	13/10/15	2/9/15	17/9/15
Pier P9L/R								
Pile Cap Construction								
WW1770	Construct pile cap P9 - 2 nos.	30	30	0%	5/8/15	15/9/15	22/7/15	1/9/15
Column Construction								
WW1780	Construct column P9 - 2 nos. (in-situ section)	12	12	0%	16/9/15	3/10/15	2/9/15	17/9/15
Pier P10L/R								
Pile Cap Construction								
WW1850	Construct pile cap P10 - 2 nos.	30	30	0%	28/7/15	5/9/15	4/7/15	14/8/15
Column Construction								
WW1860	Construct column P10 - 2 nos. (in-situ section)	12	12	0%	8/9/15	23/9/15	15/8/15	1/9/15
Pier P11L/R								
Column Construction								
WW1940	Construct column P11 - 2 nos. (in-situ section)	12	12	0%	13/8/15	28/8/15	30/7/15	14/8/15
WW9120	Install base precast column segment at P11	1	1	0%	15/10/15	16/10/15	13/10/15	14/10/15
WW9122	Align & cast stitch for base column segment at P11	8	8	0%	16/10/15	28/10/15	14/10/15	26/10/15
Pier P12L/R								
Column Construction								
WW9140	Install base precast column segment at P12	1	1	0%	15/10/15	16/10/15	13/10/15	14/10/15
WW9142	Align & cast stitch for base column segment at P12	8	8	0%	16/10/15	28/10/15	14/10/15	26/10/15
Pier P13L/R								
Column Construction								
WW2100	Construct column P13 - 2 nos. (in-situ section)	12	12	0%	28/7/15	12/8/15	14/7/15	29/7/15
WW9160	Install base precast column segment at P13	1	1	0%	17/9/15	18/9/15	15/9/15	16/9/15



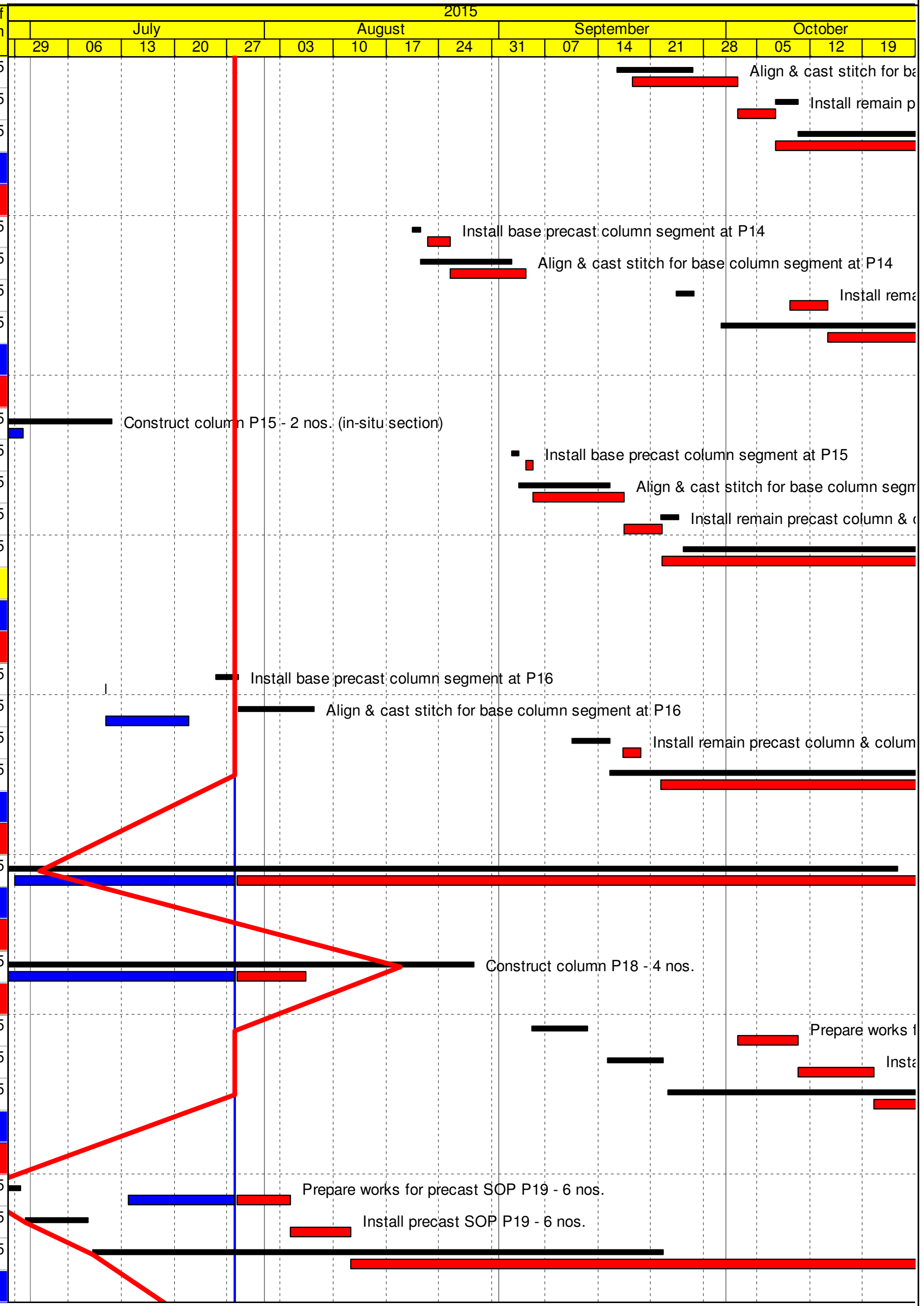
DWP_01f Programme | Remaining Work | ◆ Milestone
Actual Work | Critical Remaining Work

3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

Dragages - China Harbour - VSL Joint Venture

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1507 Start	1507 Finish	DWP01f Start	DWP01f Finish
WW9162	Align & cast stitch for base column segment at P13	8	8	0%	18/9/15	2/10/15	16/9/15	26/9/15
WW9164	Install remain precast column & column head segment at P13	3	3	0%	2/10/15	7/10/15	7/10/15	10/10/15
WW9170	Prestress works & infill concrete at P13	34	34	0%	7/10/15	19/11/15	10/10/15	23/11/15
Pier P14L/R								
Column Construction								
WW9180	Install base precast column segment at P14	1	1	0%	22/8/15	25/8/15	20/8/15	21/8/15
WW9182	Align & cast stitch for base column segment at P14	8	8	0%	25/8/15	4/9/15	21/8/15	2/9/15
WW9184	Install remain precast column & column head segment at P14	3	3	0%	9/10/15	14/10/15	24/9/15	26/9/15
WW9190	Prestress works & infill concrete at P14	34	34	0%	14/10/15	25/11/15	30/9/15	13/11/15
Pier P15L/R								
Column Construction								
WW2260	Construct column P15 - 2 nos. (in-situ section)	12	0	100%	16/6/15 A	30/6/15 A	25/6/15	11/7/15
WW9200	Install base precast column segment at P15	1	1	0%	4/9/15	5/9/15	2/9/15	3/9/15
WW9202	Align & cast stitch for base column segment at P15	8	8	0%	5/9/15	17/9/15	3/9/15	15/9/15
WW9204	Install remain precast column & column head segment at P15	3	3	0%	17/9/15	22/9/15	22/9/15	24/9/15
WW9210	Prestress works & infill concrete at P15	52	52	0%	22/9/15	30/11/15	25/9/15	2/12/15
ML03L/R 109.661m+150mx3+109.661m Navigation Channel - Stage 4 of Works								
Pier P16L/R (M.J.)								
Column Construction								
NC1102	Install base precast column segment at P16	1	0	100%	11/7/15 A	11/7/15 A	25/7/15	28/7/15
NC1103	Align & cast stitch for base column segment at P16	8	0	100%	11/7/15 A	22/7/15 A	28/7/15	7/8/15
NC1104	Install remain precast column & column head segment at P16	3	3	0%	17/9/15	19/9/15	10/9/15	15/9/15
NC1106	Prestress works & infill concrete at P16	52	52	0%	22/9/15	28/11/15	15/9/15	24/11/15
Pier P17L/R								
Column Construction								
NC1220	Construct column P17 - 4 nos.	101	79	21.4%	29/6/15 A	14/11/15	1/6/15	23/10/15
Pier P18L/R								
Column Construction								
NC1340	Construct column P18 - 4 nos.	100	7	92.9%	27/3/15 A	6/8/15	13/4/15	28/8/15
Pier Segment Construction								
NC1348	Prepare works for precast SOP P18 - 6 nos.	6	6	0%	2/10/15	10/10/15	5/9/15	12/9/15
NC1350	Install precast SOP P18 - 6 nos.	6	6	0%	10/10/15	20/10/15	15/9/15	22/9/15
NC1352	Insitu works for SOP P18 - 6 nos.	44	44	0%	20/10/15	11/12/15	23/9/15	20/11/15
Pier P19L/R								
Pier Segment Construction								
NC1468	Prepare works for precast SOP P19 - 6 nos.	6	5	15%	14/7/15 A	4/8/15	22/6/15	29/6/15
NC1470	Install precast SOP P19 - 6 nos.	6	6	0%	4/8/15	12/8/15	30/6/15	8/7/15
NC1472	Insitu works for SOP P19 - 6 nos.	54	54	0%	12/8/15	29/10/15	9/7/15	22/9/15
Pier P20L/R								



DWP_01f Programme — Remaining Work — ◆ Milestone

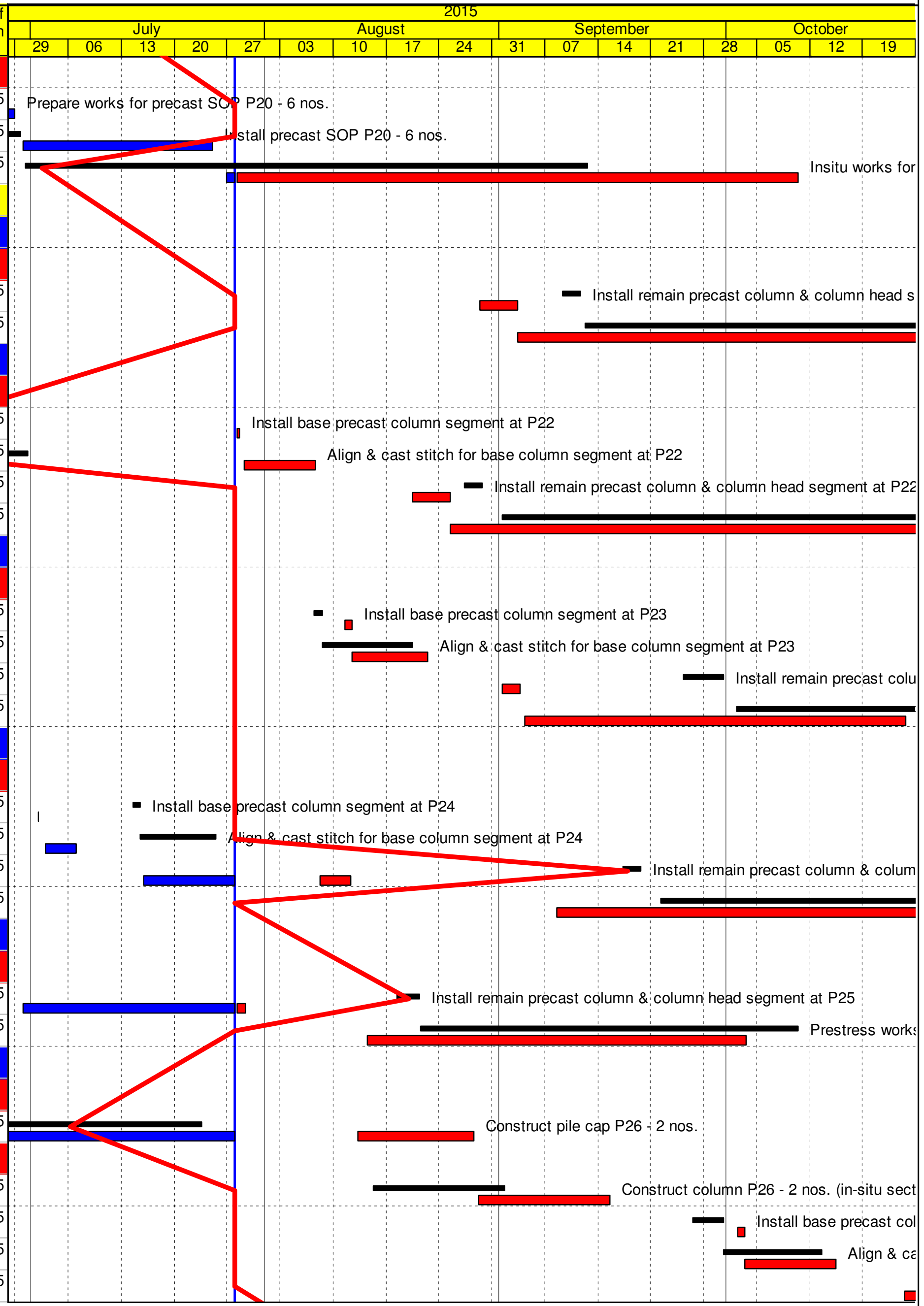
Actual Work — Critical Remaining Work

3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

Dragages - China Harbour - VSL Joint Venture

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1507 Start	1507 Finish	DWP01f Start	DWP01f Finish
Pier Segment Construction								
NC1588	Prepare works for precast SOP P20 - 6 nos.	6	0	100%	11/5/15 A	29/6/15 A	1/6/15	6/6/15
NC1590	Install precast SOP P20 - 6 nos.	6	0	100%	30/6/15 A	25/7/15 A	22/6/15	29/6/15
NC1592	Insitu works for SOP P20 - 6 nos.	54	52	3%	27/7/15 A	10/10/15	30/6/15	12/9/15
ML04L/R 74.5mx8 - Stage 4 of Works								
Pier P21L/R (M.J.)								
Column Construction								
WW9244	Install remain precast column & column head segment at P21	3	3	0%	29/8/15	3/9/15	9/9/15	11/9/15
WW9250	Prestress works & infill concrete at P21	52	52	0%	3/9/15	14/11/15	12/9/15	21/11/15
Pier P22L/R								
Column Construction								
WW9260	Install base precast column segment at P22	1	1	0%	28/7/15	28/7/15	16/6/15	17/6/15
WW9262	Align & cast stitch for base column segment at P22	8	8	0%	29/7/15	7/8/15	17/6/15	30/6/15
WW9264	Install remain precast column & column head segment at P22	3	3	0%	20/8/15	25/8/15	27/8/15	29/8/15
WW9270	Prestress works & infill concrete at P22	52	52	0%	25/8/15	6/11/15	1/9/15	11/11/15
Pier P23L/R								
Column Construction								
WW9280	Install base precast column segment at P23	1	1	0%	11/8/15	12/8/15	7/8/15	8/8/15
WW9282	Align & cast stitch for base column segment at P23	8	8	0%	12/8/15	22/8/15	8/8/15	20/8/15
WW9284	Install remain precast column & column head segment at P23	3	3	0%	1/9/15	3/9/15	25/9/15	30/9/15
WW9290	Prestress works & infill concrete at P23	34	34	0%	4/9/15	24/10/15	2/10/15	14/11/15
Pier P24L/R								
Column Construction								
WW9300	Install base precast column segment at P24	1	0	100%	2/7/15 A	2/7/15 A	14/7/15	15/7/15
WW9302	Align & cast stitch for base column segment at P24	8	0	100%	3/7/15 A	7/7/15 A	15/7/15	25/7/15
WW9304	Install remain precast column & column head segment at P24	3	2	25%	16/7/15 A	12/8/15	17/9/15	19/9/15
WW9310	Prestress works & infill concrete at P24	34	34	0%	8/9/15	28/10/15	22/9/15	7/11/15
Pier P25L/R								
Column Construction								
WW9324	Install remain precast column & column head segment at P25	3	2	50%	30/6/15 A	29/7/15	18/8/15	21/8/15
WW9330	Prestress works & infill concrete at P25	34	34	0%	14/8/15	3/10/15	21/8/15	10/10/15
Pier P26L/R								
Pile Cap Construction								
WW5370	Construct pile cap P26 - 2 nos.	30	12	60%	17/4/15 A	28/8/15	10/6/15	23/7/15
Column Construction								
WW5380	Construct column P26 - 2 nos. (in-situ section)	12	12	0%	29/8/15	15/9/15	15/8/15	1/9/15
WW9340	Install base precast column segment at P26	1	1	0%	2/10/15	3/10/15	26/9/15	30/9/15
WW9342	Align & cast stitch for base column segment at P26	8	8	0%	3/10/15	15/10/15	30/9/15	13/10/15
WW9344	Install remain precast column & column head segment at P26	3	3	0%	24/10/15	28/10/15	5/11/15	7/11/15



DWP_01f Programme — Remaining Work — ◆ Milestone

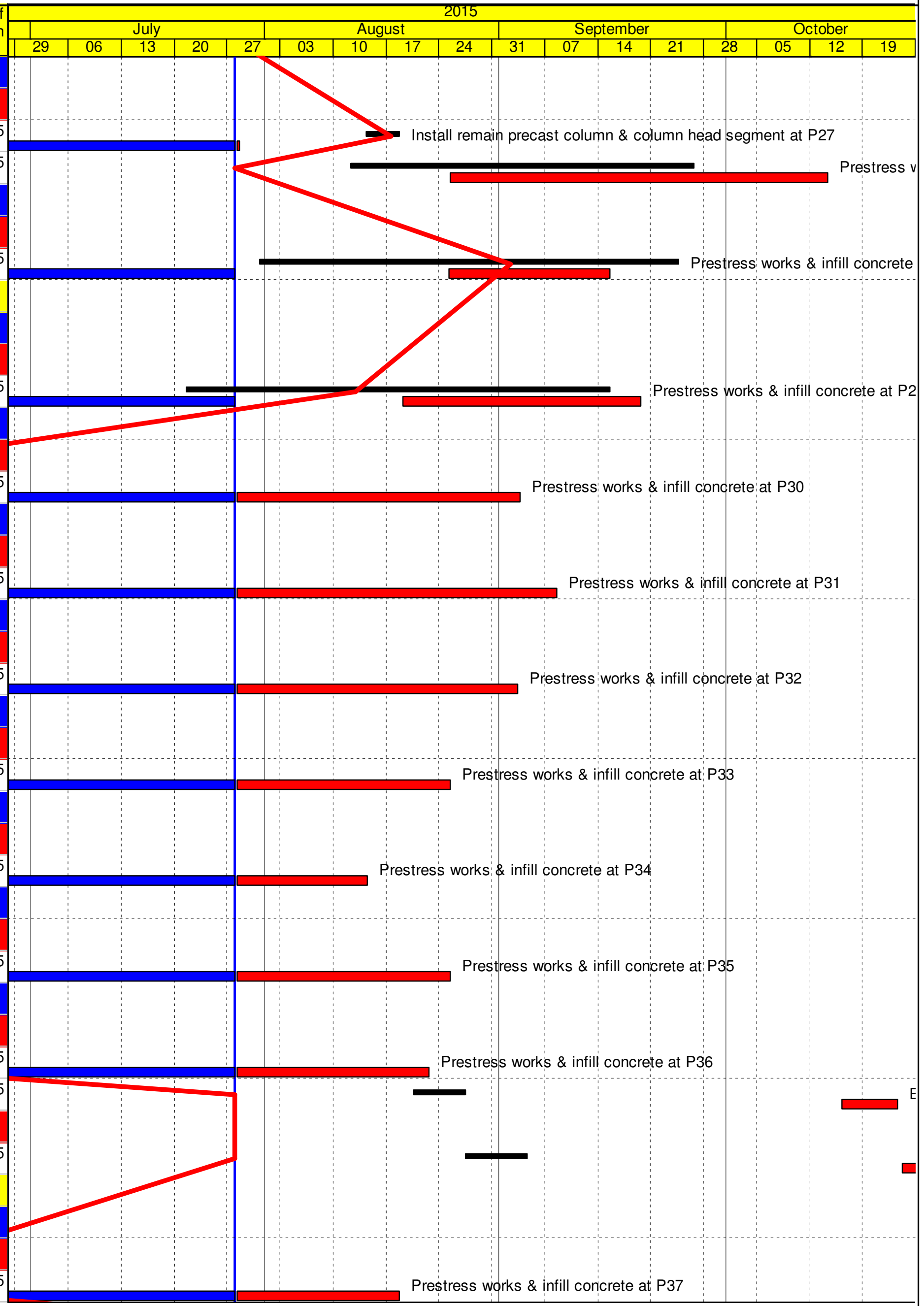
Actual Work — Critical Remaining Work

3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

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

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1507 Start	1507 Finish	DWP01f Start	DWP01f Finish
Pier P27L/R								
Column Construction								
WW9364	Install remain precast column & column head segment at P27	3	1	75%	26/5/15 A	28/7/15	14/8/15	18/8/15
WW9370	Prestress works & infill concrete at P27	34	34	0%	25/8/15	14/10/15	12/8/15	26/9/15
Pier P28L/R								
Column Construction								
WW9390	Prestress works & infill concrete at P28	40	16	60%	9/6/15 A	15/9/15	31/7/15	24/9/15
ML05L/R 74.5mx8 - Stage 4 of Works								
Pier P29L/R (M.J.)								
Column Construction								
WW9410	Prestress works & infill concrete at P29	40	24	40%	16/6/15 A	19/9/15	21/7/15	15/9/15
Pier P30L/R								
Column Construction								
WW9430	Prestress works & infill concrete at P30	40	28	30%	29/4/15 A	3/9/15	4/5/15	25/6/15
Pier P31L/R								
Column Construction								
WW9450	Prestress works & infill concrete at P31	34	31	10%	25/4/15 A	8/9/15	4/5/15	16/6/15
Pier P32L/R								
Column Construction								
WW9470	Prestress works & infill concrete at P32	34	27	20%	26/3/15 A	3/9/15	4/5/15	16/6/15
Pier P33L/R								
Column Construction								
WW9490	Prestress works & infill concrete at P33	34	20	40%	21/3/15 A	25/8/15	4/5/15	16/6/15
Pier P34L/R								
Column Construction								
WW9510	Prestress works & infill concrete at P34	34	14	60%	13/3/15 A	14/8/15	4/5/15	16/6/15
Pier P35L/R								
Column Construction								
WW9530	Prestress works & infill concrete at P35	34	20	40%	10/3/15 A	25/8/15	4/5/15	16/6/15
Pier P36L/R								
Column Construction								
WW9550	Prestress works & infill concrete at P36	40	20	50%	4/3/15 A	22/8/15	4/5/15	25/6/15
WW9552	Bearing Installation - P36	5	5	0%	16/10/15	23/10/15	20/8/15	27/8/15
Pier Segment Construction								
WW6187	Prepare works for precast SOP P36 - 4 nos.	6	6	0%	24/10/15	30/10/15	27/8/15	4/9/15
ML06L/R 74.5mx8 - Stage 4 of Works								
Pier P37L/R (M.J.)								
Column Construction								
WW9570	Prestress works & infill concrete at P37	40	16	60%	4/2/15 A	18/8/15	4/5/15	25/6/15



DWP_01f Programme | Remaining Work | ◆ Milestone

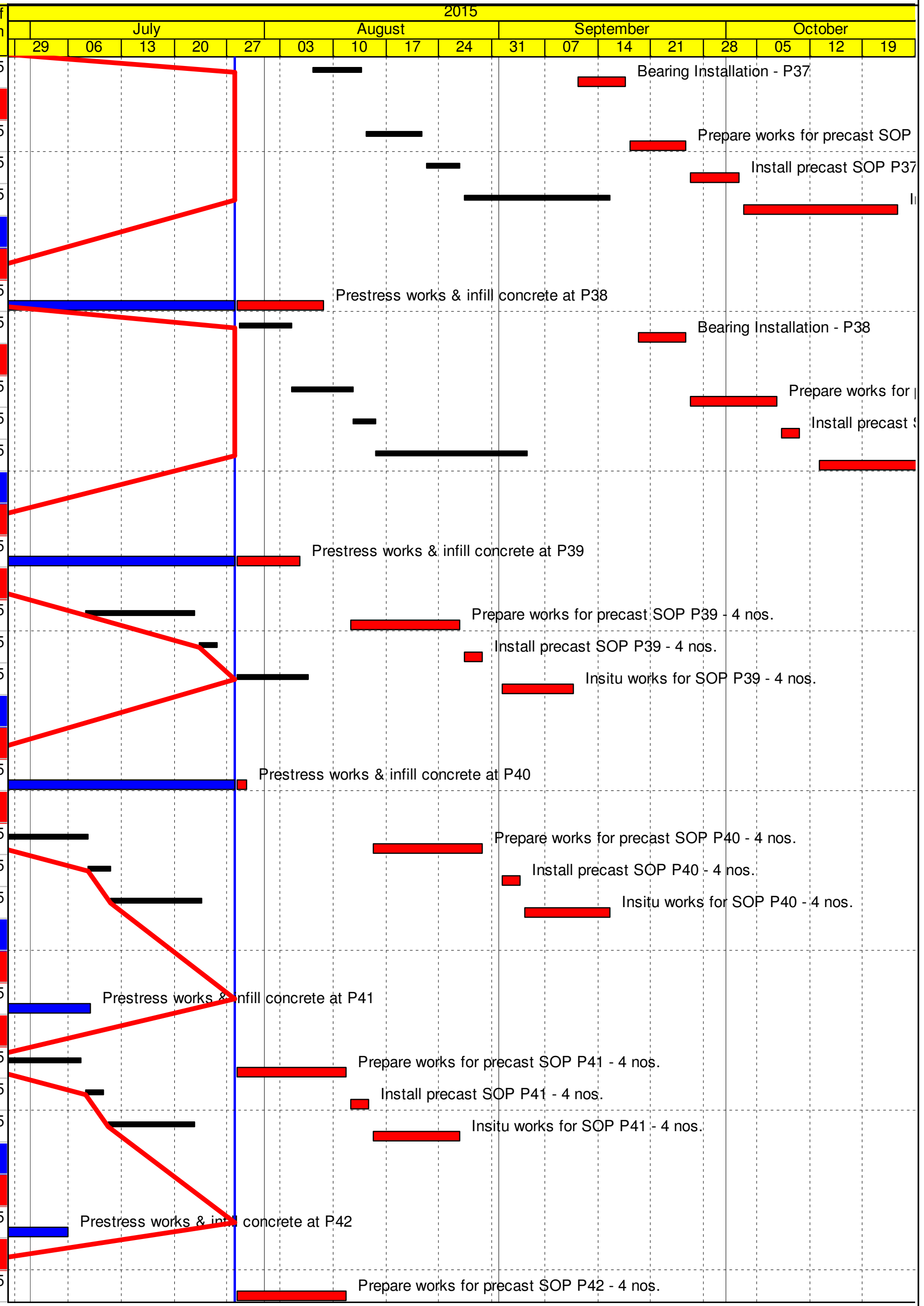
Actual Work | Critical Remaining Work

3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

Dragages - China Harbour - VSL Joint Venture

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1507 Start	1507 Finish	DWP01f Start	DWP01f Finish
WW9572	Bearing Installation - P37	5	5	0%	11/9/15	17/9/15	7/8/15	13/8/15
Pier Segment Construction								
WW6268	Prepare works for precast SOP P37 - 4 nos.	6	6	0%	18/9/15	25/9/15	14/8/15	21/8/15
WW6270	Install precast SOP P37 - 4 nos.	3	3	0%	26/9/15	2/10/15	22/8/15	26/8/15
WW6273	Insitu works for SOP P37 - 4 nos.	14	14	0%	3/10/15	23/10/15	27/8/15	15/9/15
Pier 38L/R								
Column Construction								
WW9590	Prestress works & infill concrete at P38	40	10	75%	30/1/15 A	8/8/15	4/5/15	25/6/15
WW9592	Bearing Installation - P38	5	5	0%	19/9/15	25/9/15	28/7/15	4/8/15
Pier Segment Construction								
WW6348	Prepare works for precast SOP P38 - 4 nos.	6	6	0%	26/9/15	7/10/15	4/8/15	12/8/15
WW6350	Install precast SOP P38 - 4 nos.	3	3	0%	8/10/15	10/10/15	12/8/15	15/8/15
WW6352	Insitu works for SOP P38 - 4 nos.	14	14	0%	13/10/15	30/10/15	15/8/15	4/9/15
Pier 39L/R								
Column Construction								
WW9610	Prestress works & infill concrete at P39	34	7	80%	22/12/14 A	5/8/15	4/5/15	16/6/15
Pier Segment Construction								
WW6428	Prepare works for precast SOP P39 - 4 nos.	11	11	0%	12/8/15	26/8/15	8/7/15	22/7/15
WW6430	Install precast SOP P39 - 4 nos.	3	3	0%	27/8/15	29/8/15	23/7/15	25/7/15
WW6432	Insitu works for SOP P39 - 4 nos.	8	8	0%	1/9/15	10/9/15	28/7/15	6/8/15
Pier 40L/R								
Column Construction								
WW9630	Prestress works & infill concrete at P40	34	2	95%	13/12/14 A	29/7/15	4/5/15	16/6/15
Pier Segment Construction								
WW6508	Prepare works for precast SOP P40 - 4 nos.	11	11	0%	15/8/15	29/8/15	22/6/15	8/7/15
WW6510	Install precast SOP P40 - 4 nos.	3	3	0%	1/9/15	3/9/15	8/7/15	11/7/15
WW6512	Insitu works for SOP P40 - 4 nos.	8	8	0%	4/9/15	15/9/15	11/7/15	23/7/15
Pier 41L/R								
Column Construction								
WW9650	Prestress works & infill concrete at P41	34	0	100%	10/12/14 A	9/7/15 A	4/5/15	16/6/15
Pier Segment Construction								
WW6588	Prepare works for precast SOP P41 - 4 nos.	11	11	0%	28/7/15	11/8/15	22/6/15	7/7/15
WW6590	Install precast SOP P41 - 4 nos.	3	3	0%	12/8/15	14/8/15	8/7/15	10/7/15
WW6592	Insitu works for SOP P41 - 4 nos.	8	8	0%	15/8/15	26/8/15	11/7/15	22/7/15
Pier 42L/R								
Column Construction								
WW9670	Prestress works & infill concrete at P42	34	0	100%	24/2/15 A	6/7/15 A	4/5/15	16/6/15
Pier Segment Construction								
WW6668	Prepare works for precast SOP P42 - 4 nos.	11	11	0%	28/7/15	11/8/15	2/6/15	16/6/15



DWP_01f Programme | Remaining Work | ◆ Milestone
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3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

Dragages - China Harbour - VSL Joint Venture

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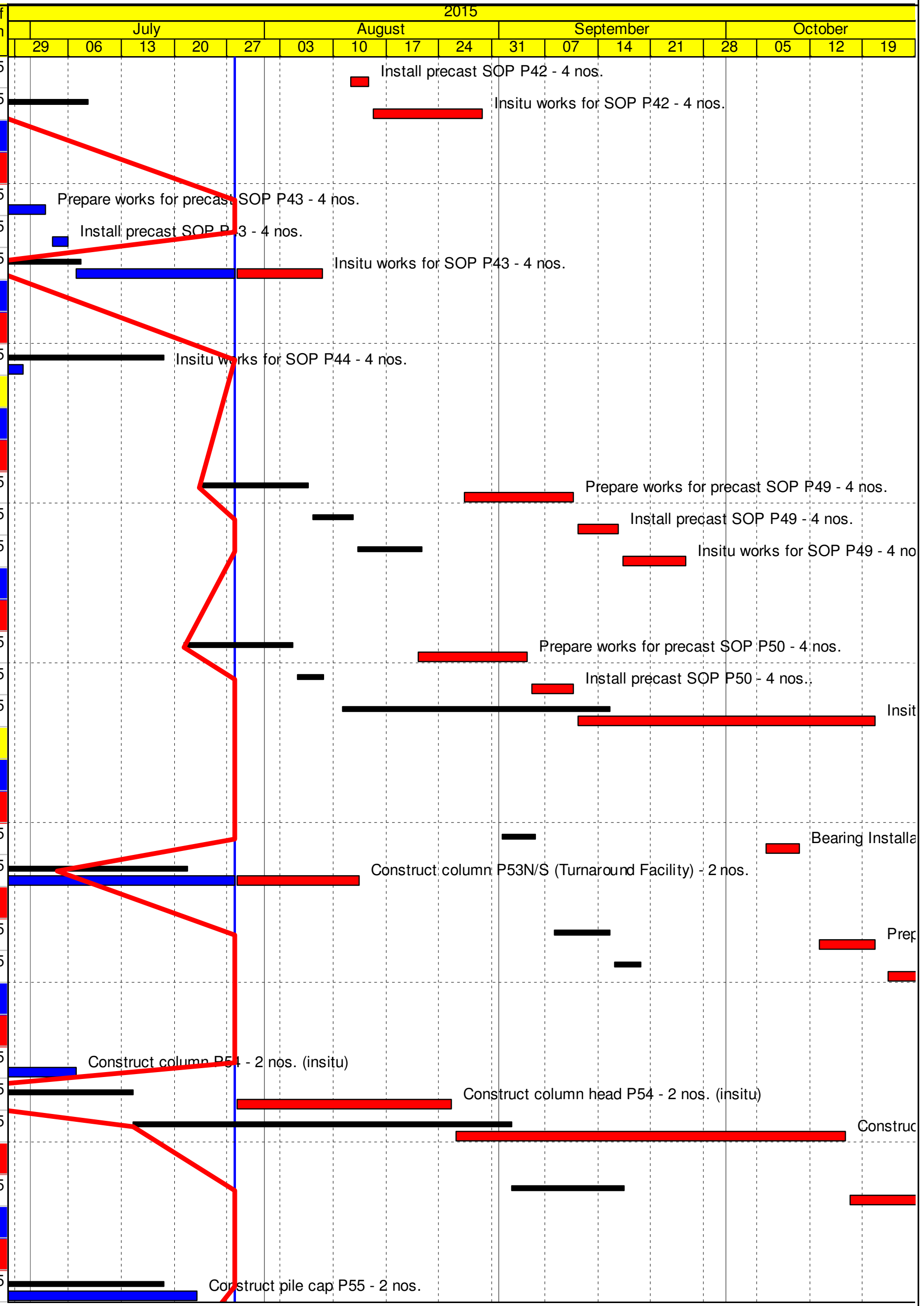
WW6670	Install precast SOP P42 - 4 nos.	3	3	0%	12/8/15	14/8/15	16/6/15	22/6/15
WW6672	Insitu works for SOP P42 - 4 nos.	11	11	0%	15/8/15	29/8/15	22/6/15	8/7/15
Pier 43L/R								
Pier Segment Construction								
WW6748	Prepare works for precast SOP P43 - 4 nos.	11	0	100%	18/6/15 A	3/7/15 A	2/6/15	15/6/15
WW6750	Install precast SOP P43 - 4 nos.	3	0	100%	4/7/15 A	6/7/15 A	16/6/15	18/6/15
WW6752	Insitu works for SOP P43 - 4 nos.	11	10	10%	7/7/15 A	8/8/15	22/6/15	7/7/15
Pier 44L/R								
Pier Segment Construction								
WW6832	Insitu works for SOP P44 - 4 nos.	21	0	100%	21/5/15 A	30/6/15 A	18/6/15	18/7/15
ML07L/R 73.396mx8 - Stage 4 of Works								
Pier P49L/R								
Pier Segment Construction								
WW8688	Prepare works for precast SOP P49 - 4 nos.	11	11	0%	27/8/15	10/9/15	23/7/15	6/8/15
WW8690	Install precast SOP P49 - 4 nos.	4	4	0%	11/9/15	16/9/15	7/8/15	12/8/15
WW8692	Insitu works for SOP P49 - 4 nos.	7	7	0%	17/9/15	25/9/15	13/8/15	21/8/15
Pier P50L/R								
Pier Segment Construction								
WW8698	Prepare works for precast SOP P50 - 4 nos.	11	11	0%	21/8/15	4/9/15	21/7/15	4/8/15
WW8700	Install precast SOP P50 - 4 nos..	4	4	0%	5/9/15	10/9/15	5/8/15	8/8/15
WW8702	Insitu works for SOP P50 - 4 nos.	26	26	0%	11/9/15	20/10/15	11/8/15	15/9/15
ML08L/R 70mx6 - Stage 4 of Works								
Pier P53L/R (M.J.)								
Column Construction								
WW7515	Bearing Installation - P53	5	5	0%	6/10/15	10/10/15	1/9/15	5/9/15
WW8720	Construct column P53N/S (Turnaround Facility) - 2 nos.	36	12	66%	8/6/15 A	13/8/15	1/6/15	21/7/15
Pier Segment Construction								
WW7518	Prepare works for precast SOP P53 - 4 nos.	6	6	0%	13/10/15	20/10/15	8/9/15	15/9/15
WW7520	Install precast SOP P53 - 4 nos.	4	4	0%	22/10/15	26/10/15	16/9/15	19/9/15
Pier P54L/R								
Column Construction								
WW10167	Construct column P54 - 2 nos. (insitu)	12	0	100%	16/5/15 A	7/7/15 A	1/6/15	15/6/15
WW10177	Construct column head P54 - 2 nos. (insitu)	21	21	0%	28/7/15	25/8/15	11/6/15	14/7/15
WW9912	Construct column P54N/S (Turnaround Facility) - 2 nos.	36	36	0%	26/8/15	16/10/15	14/7/15	2/9/15
Pier Segment Construction								
WW7598	Prepare works for precast SOP P54 - 4 nos.	11	11	0%	17/10/15	31/10/15	2/9/15	17/9/15
Pier P55L/R								
Pile Cap Construction								
WW7660	Construct pile cap P55 - 2 nos.	35	0	100%	30/5/15 A	23/7/15 A	1/6/15	18/7/15



DWP_01f Programme | Remaining Work | ◆ Milestone
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3MRP DWP_01f 1507

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Dragages - China Harbour - VSL Joint Venture

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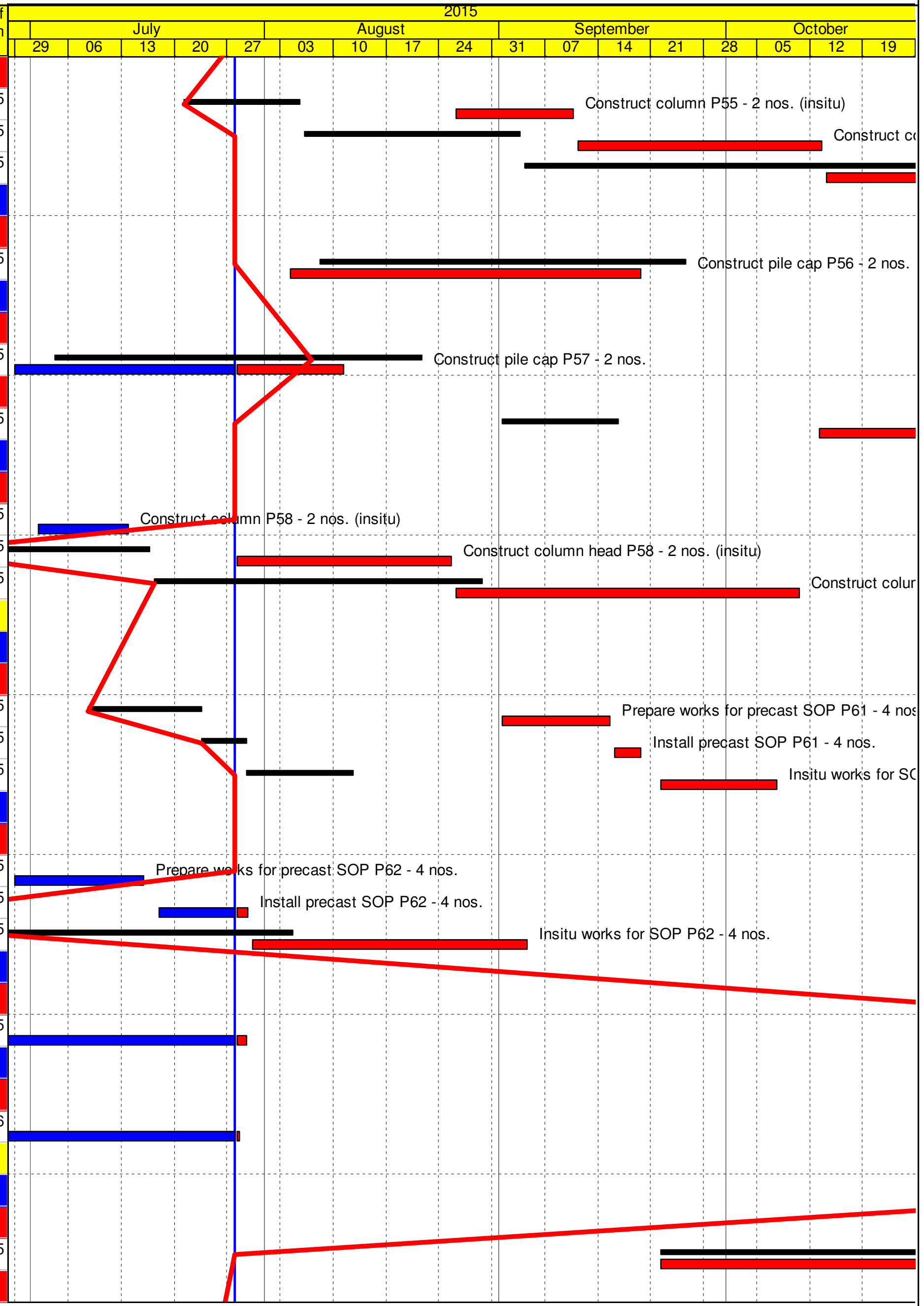
Column Construction								
WW10187	Construct column P55 - 2 nos. (insitu)	12	12	0%	26/8/15	10/9/15	21/7/15	5/8/15
WW10197	Construct column head P55 - 2 nos. (insitu)	21	21	0%	11/9/15	13/10/15	6/8/15	3/9/15
WW9932	Construct column P55N/S (Turnaround Facility) - 2 nos.	35	35	0%	14/10/15	25/11/15	4/9/15	26/10/15
Pier P56L/R								
Pile Cap Construction								
WW7740	Construct pile cap P56 - 2 nos.	35	35	0%	4/8/15	19/9/15	8/8/15	25/9/15
Pier P57L/R								
Pile Cap Construction								
WW7820	Construct pile cap P57 - 2 nos.	35	11	70%	29/6/15 A	11/8/15	4/7/15	21/8/15
Column Construction								
WW10227	Construct column P57 - 2 nos. (insitu)	12	12	0%	13/10/15	28/10/15	1/9/15	16/9/15
Pier P58L/R								
Column Construction								
WW10247	Construct column P58 - 2 nos. (insitu)	12	0	100%	2/7/15 A	14/7/15 A	1/6/15	15/6/15
WW10257	Construct column head P58 - 2 nos. (insitu)	21	21	0%	28/7/15	25/8/15	16/6/15	16/7/15
WW9992	Construct column P58N/S (Turnaround Facility) - 2 nos.	32	32	0%	26/8/15	10/10/15	17/7/15	29/8/15
ML09L/R 73.396Mx8 - Stage 4 of Works								
Pier P61L/R								
Pier Segment Construction								
WW8228	Prepare works for precast SOP P61 - 4 nos.	11	11	0%	1/9/15	15/9/15	8/7/15	23/7/15
WW8230	Install precast SOP P61 - 4 nos.	4	4	0%	16/9/15	19/9/15	23/7/15	29/7/15
WW8232	Insitu works for SOP P61 - 4 nos.	10	10	0%	22/9/15	7/10/15	29/7/15	12/8/15
Pier P62L/R								
Pier Segment Construction								
WW8238	Prepare works for precast SOP P62 - 4 nos.	15	0	100%	29/6/15 A	16/7/15 A	1/6/15	18/6/15
WW8240	Install precast SOP P62 - 4 nos.	4	2	50%	18/7/15 A	29/7/15	22/6/15	25/6/15
WW8242	Insitu works for SOP P62 - 4 nos.	27	27	0%	30/7/15	4/9/15	27/6/15	4/8/15
Pier P63L/R								
Pier Segment Construction								
WW8322	Insitu works for SOP P63 - 4 nos.	7	2	75%	8/5/15 A	29/7/15	11/12/15	18/12/15
Pier P66L/R								
Pier Segment Construction								
WW8562	Insitu works for SOP P66 - 4 nos.	22	1	95.45%	12/2/15 A	28/7/15	17/3/16	16/4/16
ML10L/R 115m+180m+115m - Stage 4 of Works								
Pier P68L/R								
Temporary Works								
AC2796	Install cofferdem for pile cap construction - P68L - 1 nos.	60	60	0%	22/9/15	8/12/15	22/9/15	8/12/15
Foundation - Bored Pile								



DWP_01f Programme | Remaining Work | ◆ Milestone
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3MRP DWP_01f 1507

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Dragages - China Harbour - VSL Joint Venture

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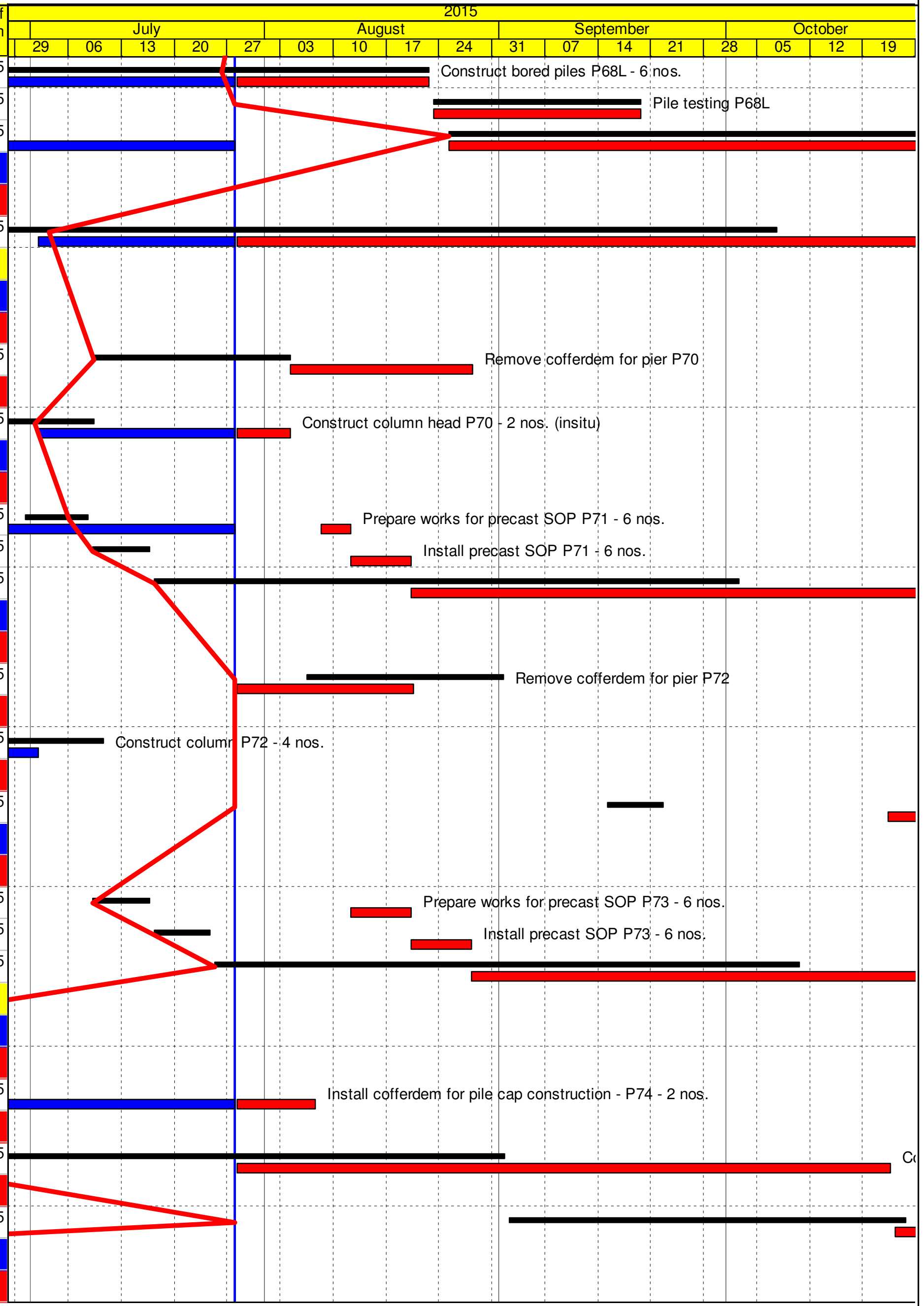
AC1080	Construct bored piles P68L - 6 nos.	60	20	66.67%	11/5/15 A	22/8/15	1/6/15	22/8/15
AC1090	Pile testing P68L	28	28	0%	23/8/15	19/9/15	23/8/15	19/9/15
AC2836	Construct bored piles P68R - 6 nos.	60	60	0%	1/4/15 A	14/11/15	25/8/15	14/11/15
Pier P69L/R								
Temporary Works								
AC1135	Install cofferdem for pile cap construction - P69 - 2 nos.	90	68	25%	2/7/15 A	31/10/15	1/6/15	7/10/15
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%	4/8/15	28/8/15	9/7/15	4/8/15
Column Construction								
AC1206	Construct column head P70 - 2 nos. (insitu)	21	5	75%	2/7/15 A	4/8/15	8/6/15	9/7/15
Pier P71L/R								
Pier Segment Construction								
AC1308	Prepare works for precast SOP P71 - 6 nos.	6	2	70%	23/6/15 A	12/8/15	30/6/15	8/7/15
AC1310	Install precast SOP P71 - 6 nos.	6	6	0%	12/8/15	20/8/15	9/7/15	16/7/15
AC1312	Insitu works for SOP P71 - 6 nos.	54	54	0%	20/8/15	5/11/15	17/7/15	2/10/15
Pier P72L/R								
Temporary Works								
AC1340	Remove cofferdem for pier P72	18	18	0%	28/7/15	20/8/15	6/8/15	1/9/15
Column Construction								
AC1390	Construct column P72 - 4 nos.	68	0	100%	27/3/15 A	2/7/15 A	9/4/15	10/7/15
Pier Segment Construction								
AC1398	Prepare works for precast SOP P72 - 6 nos.	6	6	0%	22/10/15	29/10/15	15/9/15	22/9/15
Pier P73L/R								
Pier Segment Construction								
AC1488	Prepare works for precast SOP P73 - 6 nos.	6	6	0%	12/8/15	20/8/15	9/7/15	16/7/15
AC1490	Install precast SOP P73 - 6 nos.	6	6	0%	20/8/15	28/8/15	17/7/15	24/7/15
AC1493	Insitu works for SOP P73 - 6 nos.	54	54	0%	28/8/15	12/11/15	25/7/15	10/10/15
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	9	95%	8/8/14 A	7/8/15	9/9/14	21/4/15
Pile Cap Construction								
AC1560	Construct pile cap P74 - 2 nos.	60	60	0%	28/7/15	22/10/15	8/6/15	1/9/15
Column Construction								
AC2676	Construct column P74 - 2 nos. (insitu)	36	36	0%	23/10/15	3/12/15	2/9/15	24/10/15
Pier P75L/R								
Temporary Works								



DWP_01f Programme | Remaining Work | ◆ Milestone
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3MRP DWP_01f 1507

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30/7/15	1506 rolling based on DWP01f	Tim	

Dragages - China Harbour - VSL Joint Venture

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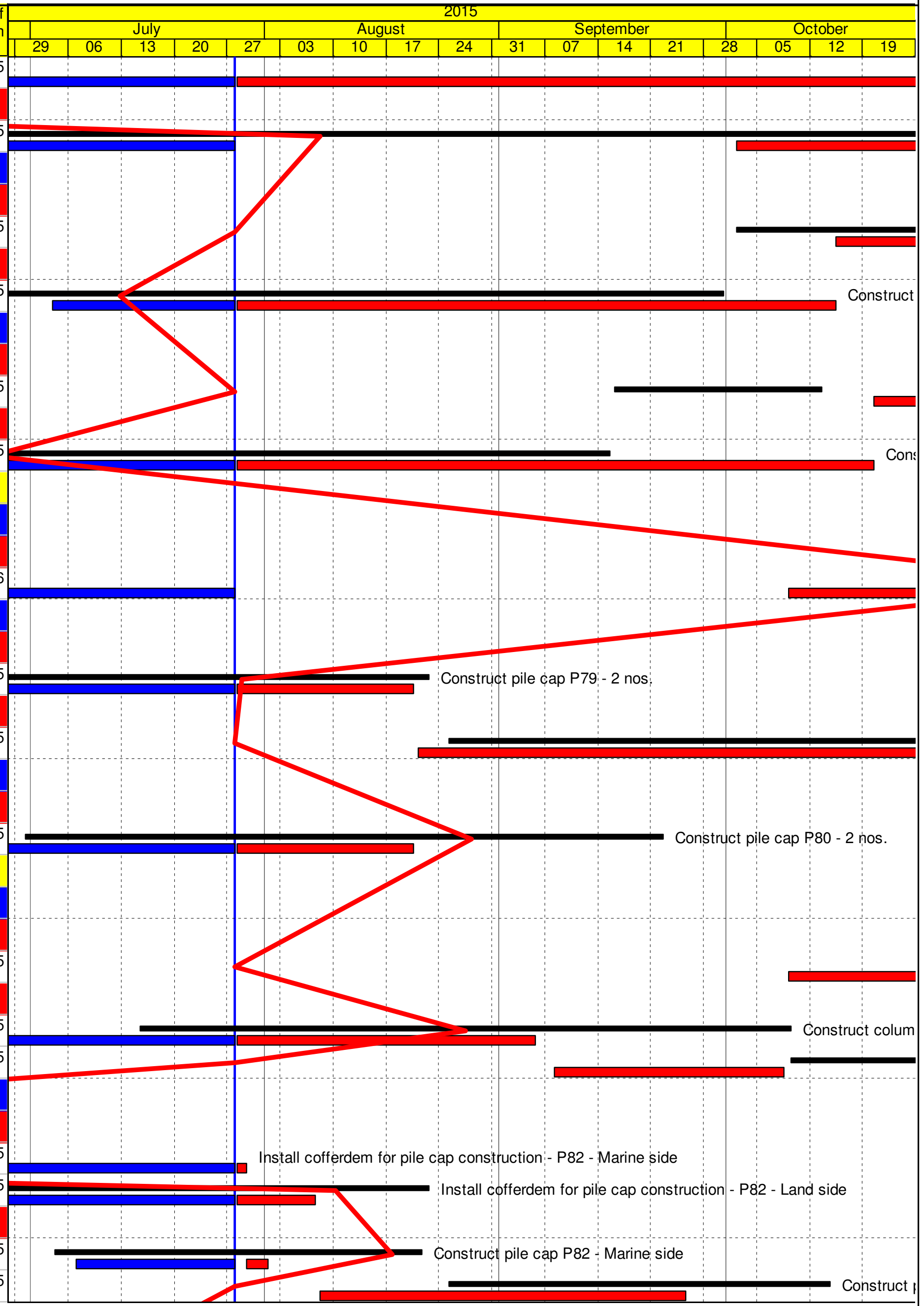
AC1590	Install cofferdem for pile cap construction - P75 - 1 nos.	120	65	46%	15/7/14 A	28/10/15	9/9/14	7/2/15
Foundation - Bored Pile								
AC2736	Construct bored piles P75 - 8 nos.	90	59	35%	18/6/15 A	14/12/15	24/6/15	30/10/15
Pier P76L/R								
Temporary Works								
AC1710	Remove cofferdem for pier P76	18	18	0%	15/10/15	7/11/15	2/10/15	27/10/15
Column Construction								
AC1750	Construct column P76 - 4 nos.	74	56	25%	4/7/15 A	15/10/15	16/6/15	30/9/15
Pier P77L/R								
Temporary Works								
AC2410	Remove cofferdem for pier P77	18	18	0%	20/10/15	11/11/15	16/9/15	13/10/15
Column Construction								
AC1830	Construct column P77 - 4 nos.	76	59	23%	19/6/15 A	20/10/15	1/6/15	15/9/15
ML13L/R 115m+180m+115m - Stage 4 of Works								
Pier P78L/R (M.J.)								
Column Construction								
AC2696	Construct column P78 - 2 nos. (insitu)	48	36	25%	5/6/15 A	23/11/15	6/11/15	5/1/16
Pier P79L/R								
Pile Cap Construction								
AC1990	Construct pile cap P79 - 2 nos.	60	18	70%	1/6/15 A	20/8/15	1/6/15	22/8/15
Column Construction								
AC2000	Construct column P79 - 4 nos.	80	80	0%	21/8/15	5/12/15	25/8/15	8/12/15
Pier P80L/R								
Pile Cap Construction								
AC2070	Construct pile cap P80 - 2 nos.	60	18	70%	2/6/15 A	20/8/15	30/6/15	22/9/15
ML14L/R 115m+180m+100.561m - Stage 4 of Works								
Pier P81L/R (M.J.)								
Temporary Works								
AC2130	Remove cofferdem and rockfill platformfor pier P81	25	25	0%	9/10/15	10/11/15	6/11/15	5/12/15
Column Construction								
AC2716	Construct column P81 - 2 nos. (insitu)	60	30	50%	3/6/15 A	5/9/15	15/7/15	9/10/15
AC2726	Construct column head P81 - 2 nos. (insitu)	21	21	0%	8/9/15	8/10/15	9/10/15	6/11/15
Pier P82L/R								
Temporary Works								
AC2225	Install cofferdem for pile cap construction - P82 - Marine side	80	2	98%	24/9/14 A	29/7/15	31/10/14	4/2/15
AC2227	Install cofferdem for pile cap construction - P82 - Land side	60	9	85%	24/3/15 A	7/8/15	1/6/15	22/8/15
Pile Cap Construction								
AC2260	Construct pile cap P82 - Marine side	35	3	92%	7/7/15 A	1/8/15	4/7/15	21/8/15
AC2816	Construct pile cap P82 - Land side	35	35	0%	8/8/15	25/9/15	25/8/15	14/10/15



DWP_01f Programme — Remaining Work — ◆ Milestone
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3MRP DWP_01f 1507

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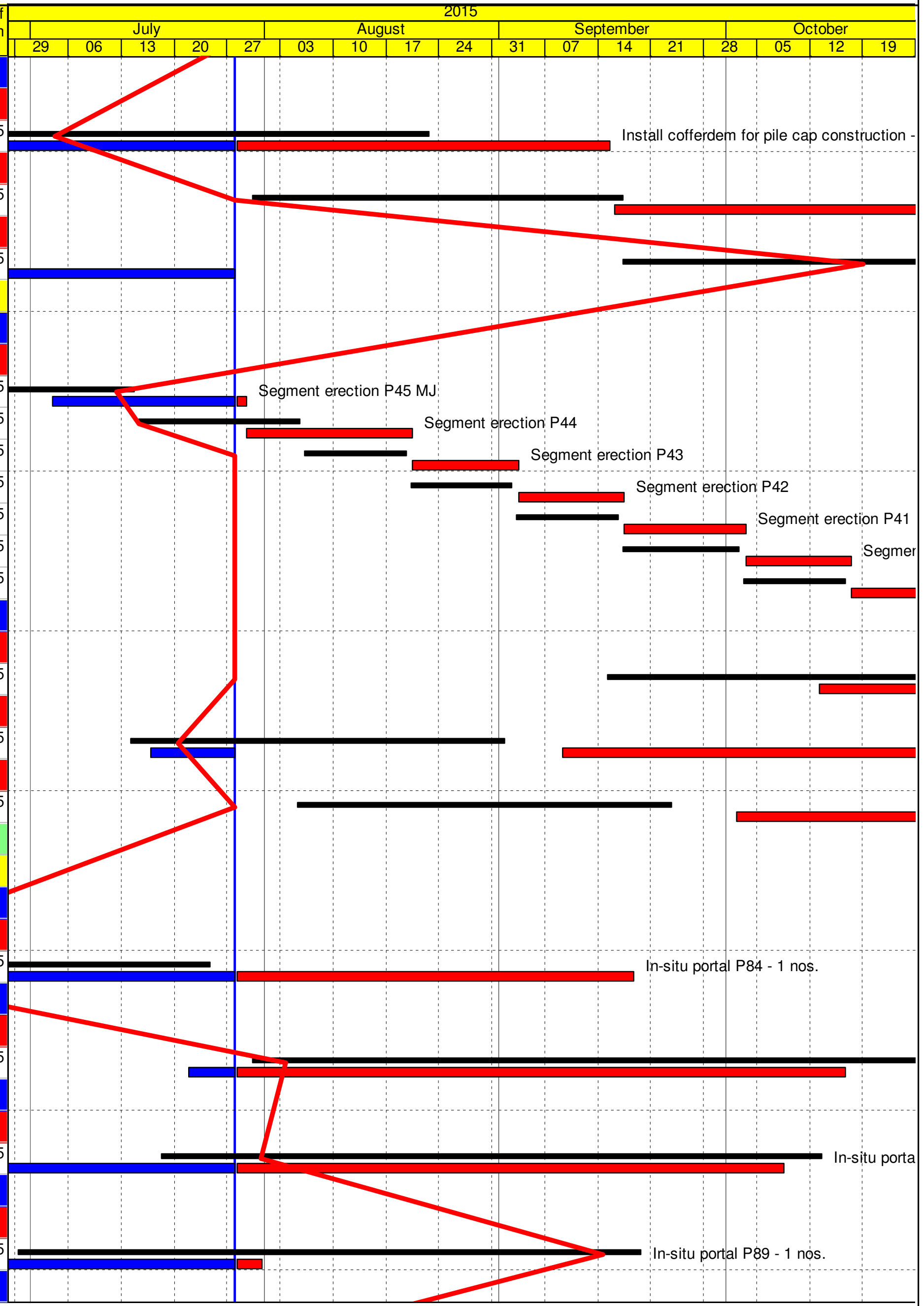
Pier P83L/R								
Temporary Works								
AC2298	Install cofferdem for pile cap construction - P83 - Land side	60	36	40%	20/4/15 A	15/9/15	1/6/15	22/8/15
Pile Cap Construction								
AC2826	Construct pile cap P83 - Land side	35	35	0%	16/9/15	4/11/15	30/7/15	17/9/15
Column Construction								
AC2370	Construct column P83 - 4 nos.	74	50	33%	4/6/15 A	5/1/16	17/9/15	22/12/15
Deck Construction between HKSAR Boundary and Landing Point on Airport Channel								
Segment Erection - Launching Girder								
Launching Girder No.2								
DC1110	Segment erection P45 MJ	16	2	90%	4/7/15 A	29/7/15	22/6/15	14/7/15
DC1120	Segment erection P44	16	16	0%	29/7/15	20/8/15	15/7/15	5/8/15
DC1130	Segment erection P43	10	10	0%	20/8/15	3/9/15	6/8/15	19/8/15
DC1140	Segment erection P42	10	10	0%	3/9/15	17/9/15	20/8/15	2/9/15
DC1150	Segment erection P41	10	10	0%	17/9/15	3/10/15	3/9/15	16/9/15
DC1160	Segment erection P40	10	10	0%	3/10/15	17/10/15	17/9/15	2/10/15
DC1170	Segment erection P39	10	10	0%	17/10/15	31/10/15	3/10/15	16/10/15
Segment Erection - Lifting Frame								
Lifting Frame Type 1_1								
DC1515	Segment erection P20 (Learning)	60	60	0%	13/10/15	23/12/15	15/9/15	2/12/15
Lifting Frame Type 3_A/C								
DC1860	Segment erection P64 (Learning)	36	32	12.5%	17/7/15 A	26/10/15	14/7/15	1/9/15
Lifting Frame Type 3_A/C/D								
DC1820	Segment erection P62 (Learning)	36	36	0%	2/10/15	17/11/15	5/8/15	23/9/15
Viaduct between Landing Point on Airport Island and Scenic Hill								
ML15L/R 43m+65mx6+37m - Stage 5 of Works								
Pier P84L/R (M.J.)								
In-situ Portal/T-pier Construction								
AI3590	In-situ portal P84 - 1 nos.	60	39	35%	22/3/15 A	18/9/15	4/5/15	24/7/15
Pier P85L/R								
In-situ Portal/T-pier Construction								
AI1150	In-situ portal P85 - 1 nos.	60	57	5%	22/7/15 A	16/10/15	30/7/15	26/10/15
Pier P86L/R								
In-situ Portal/T-pier Construction								
AI1220	In-situ portal P86 - 1 nos.	60	51	15%	24/6/15 A	8/10/15	18/7/15	13/10/15
Pier P89L/R								
In-situ Portal/T-pier Construction								
AI1430	In-situ portal P89 - 1 nos.	60	4	94%	9/6/15 A	31/7/15	29/6/15	19/9/15
Pier P90L/R								



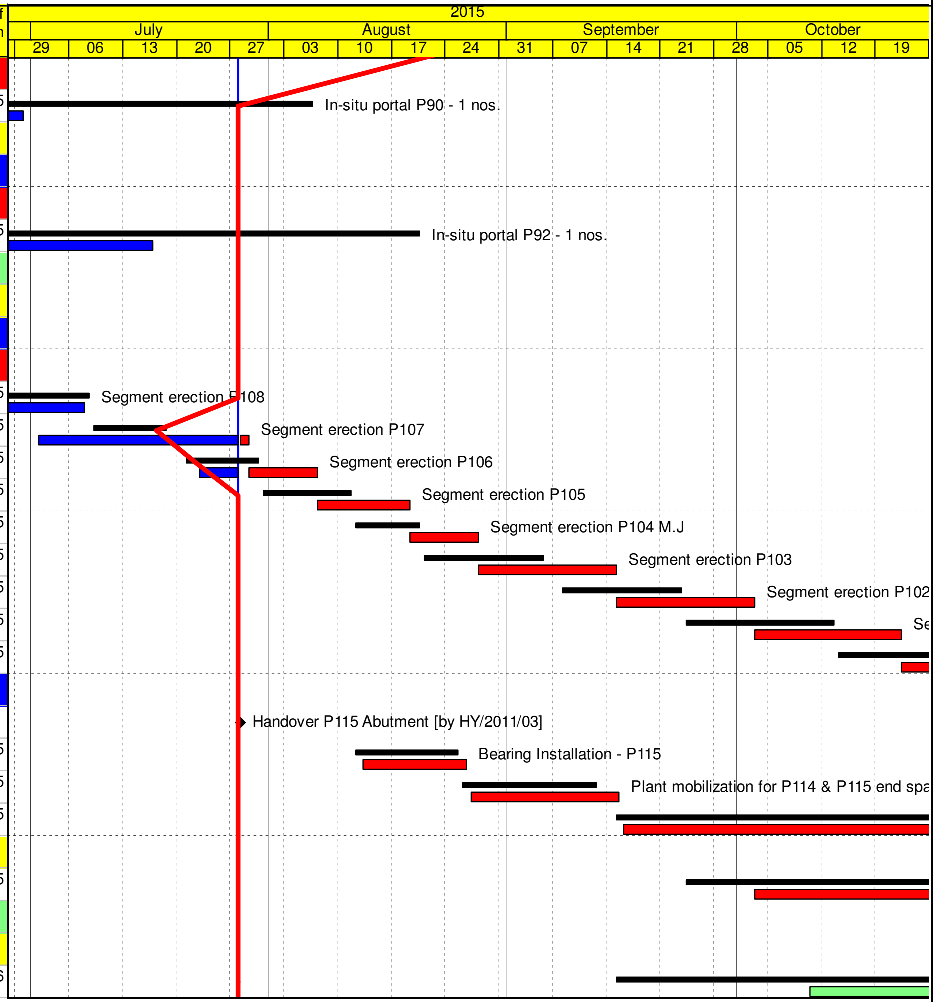
DWP_01f Programme — Remaining Work — ◆ Milestone
Actual Work — Critical Remaining Work

3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

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

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	1507 Start	1507 Finish	DWP01f Start	DWP01f Finish
In-situ Portal/T-pier Construction								
AI1500	In-situ portal P90 - 1 nos.	60	0	100%	13/4/15 A	30/6/15 A	15/5/15	6/8/15
MI16L/R 37m+65mx5+43m - Stage 5 of Works								
Pier P92L/R (M.J.)								
In-situ Portal/T-pier Construction								
AI1640	In-situ portal P92 - 1 nos.	60	0	100%	2/4/15 A	17/7/15 A	29/5/15	20/8/15
Deck Construction between Landing Point on Airport Island and Scenic Hill								
Segment Erection								
Segment Erection - Launching Girder								
Launching Girder No.1								
DC5050	Segment erection P108	8	0	100%	31/1/15 A	8/7/15 A	27/6/15	8/7/15
DC5060	Segment erection P107	8	1	85.7%	2/7/15 A	29/7/15	9/7/15	18/7/15
DC5070	Segment erection P106	8	7	12.5%	23/7/15 A	7/8/15	21/7/15	30/7/15
DC5080	Segment erection P105	8	8	0%	7/8/15	19/8/15	31/7/15	11/8/15
DC5090	Segment erection P104 M.J	7	7	0%	19/8/15	28/8/15	12/8/15	20/8/15
DC5100	Segment erection P103	12	12	0%	28/8/15	15/9/15	21/8/15	5/9/15
DC5110	Segment erection P102	12	12	0%	15/9/15	3/10/15	8/9/15	23/9/15
DC5120	Segment erection P101	12	12	0%	3/10/15	22/10/15	24/9/15	13/10/15
DC5130	Segment erection P100	12	12	0%	22/10/15	5/11/15	14/10/15	29/10/15
Segment Erection - Crane Erection for Interface Span P115								
DC5460	Handover P115 Abutment [by HY/2011/03]	0	0	0%	28/7/15*		15/6/15	
DC5465	Bearing Installation - P115	10	10	0%	13/8/15	26/8/15	12/8/15	25/8/15
DC5470	Plant mobilization for P114 & P115 end span erection	14	14	0%	27/8/15	15/9/15	26/8/15	12/9/15
DC5480	In-situ Deck between Eastern Abutment and P114 +10 Segment	75	75	0%	16/9/15	21/12/15	15/9/15	19/12/15
External PT								
DC5370	External PT for ML18L/R (Learning)	50	50	0%	3/10/15	5/12/15	24/9/15	28/11/15
E&M Works								
Re-provisioning Radar at P20								
EM1000	Re-provisioning the Platform & Radar at Pier P20	90	90	0%	10/10/15	30/1/16	15/9/15	9/1/16



DWP_01f Programme
Remaining Work
◆ Milestone
Actual Work
Critical Remaining Work

3MRP DWP_01f 1507

Date	Revision	Checked	Approved
30/7/15	1506 rolling based on DWP01f	Tim	

APPENDIX B
ACTION AND LIMIT LEVELS

Appendix B - Action and Limit Levels

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

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

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

Location	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
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. MA12014/67/0015

Project No.	AMS 1 - Sha Lo Wan	Operator:	WK
Date:	11-May-15	Next Due Date:	10-Jul-15
Equipment No.:	A-01-67	Serial No.	3218

Ambient Condition			
Temperature, Ta (K)	298.6	Pressure, Pa (mmHg)	760.4

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 = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	3-Feb-16	**Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	11.3	3.36	57.05	6.7	2.59
2	9.7	3.11	52.88	5.5	2.34
3	7.8	2.79	47.46	4.7	2.17
4	5.1	2.26	38.45	3.0	1.73
5	3.3	1.82	31.00	1.9	1.38

By Linear Regression of Y on X

Slope , mw = 0.0456 **Intercept, bw = -0.0273**

Correlation coefficient* = 0.9985

*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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **3.74**

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 11/5/15

Checked by: [illegible] Signature: [illegible] Date: 11 May 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/74/0015

Project No.	AMS 4 - San Tau	Operator:	WK
Date:	11-May-15	Next Due Date:	10-Jul-15
Equipment No.:	A-01-74	Serial No.	2202

Ambient Condition			
Temperature, Ta (K)	299.4	Pressure, Pa (mmHg)	758.9

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	11.4	3.37	57.17	7.9	2.80
2	9.7	3.10	52.76	6.5	2.54
3	7.3	2.69	45.82	5.1	2.25
4	5.2	2.27	38.73	3.4	1.84
5	3.4	1.84	31.39	2.2	1.48

By Linear Regression of Y on X

Slope , mw = **0.0510** **Intercept, bw =** **-0.1233**

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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.32**

Remarks: ____________________

Conducted by: WK Tang Signature: Kwan Date: 11/5/15

Checked by: [signature] Signature: Date: 11 May 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/67/0016

Project No.	AMS 1 - Sha Lo Wan	Operator:	WK
Date:	7-Jul-15	Next Due Date:	6-Sep-15
Equipment No.:	A-01-67	Serial No.	3218

Ambient Condition			
Temperature, Ta (K)	301.2	Pressure, Pa (mmHg)	753.1

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

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (CFM) **X - axis**	ΔW (HVS), in. of water	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	11.6	3.37	57.27	6.7	2.56
2	9.8	3.10	52.67	5.6	2.34
3	7.7	2.75	46.73	4.7	2.15
4	5.2	2.26	38.47	3.1	1.74
5	3.2	1.77	30.26	2.0	1.40

By Linear Regression of Y on X

Slope , mw = 0.0430 **Intercept, bw : 0.1026**

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 x Qstd + bw = [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; W = (mw x Qstd + bw)^2 x (760 / Pa) x (Ta / 298) = **3.88**

Remarks:

Conducted by:	WK Tang	Signature:	Kwai	Date:	7/7/15
Checked by:	[illegible]	Signature:	[illegible]	Date:	7 July 2015

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/74/0016

Project No. AMS 4 - San Tau
Operator: WK
Date: 7-Jul-15
Next Due Date: 6-Sep-15
Equipment No.: A-01-74
Serial No. 2202

Ambient Condition			
Temperature, Ta (K)	303.9	Pressure, Pa (mmHg)	752

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	11.3	3.31	56.24	7.9	2.77
2	9.8	3.08	52.40	6.6	2.53
3	7.4	2.68	45.58	5.2	2.25
4	5.2	2.25	38.27	3.4	1.82
5	3.3	1.79	30.56	2.1	1.43

By Linear Regression of Y on X

Slope , mw = 0.0518
Intercept, bw = -0.1547
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; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.43**

Remarks:

Conducted by: WK Tang Signature: Kwai Date: 7/7/15
Checked by: [illegible] Signature: Date: 7 July 2015

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

TISCH Environmental

Equipment No A-04-06

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 04, 2015 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 2896 Pa (mm) - 756.92

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4590	3.2	2.00
2	NA	NA	1.00	1.0330	6.4	4.00
3	NA	NA	1.00	0.9250	7.9	5.00
4	NA	NA	1.00	0.8800	8.8	5.50
5	NA	NA	1.00	0.7260	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0086	0.6913	1.4233		0.9958	0.6825	0.8799
1.0044	0.9723	2.0129		0.9916	0.9599	1.2443
1.0023	1.0835	2.2505		0.9895	1.0697	1.3912
1.0011	1.1377	2.3603		0.9884	1.1231	1.4591
0.9959	1.3718	2.8467		0.9832	1.3542	1.7598

Qstd slope (m) =	2.09317	Qa slope (m) =	1.31071
intercept (b) =	-0.02195	intercept (b) =	-0.01357
coefficient (r) =	0.99997	coefficient (r) =	0.99997

y axis = SQRT[H2O(Pa/760)(298/Ta)]   y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. **501222**

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 8801 Fax: 2425 8646

E

Calibration Certificate

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 ----------

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

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	IEC 61672
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Spec. (dB)
HIGH	SPL	A	Fast	114.00	1	113.8	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
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	IEC 61672
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Class 1 Spec. (dB)
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 ; -∞)

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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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

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
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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 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機樓四樓
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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.

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

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: 18-05-2015
Page 1 of 1 pages — Castco LRN: EN0150512-18

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 : 12-05-2015
Serial No. : 12B100804 — Date of Next Calibration : 12-08-2015

pH Value Check (pH Probe : Model: 6589, L/N: 14M)

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	7.04	+0.02		
10.06	10.00	-0.06		

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

Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
4.00	4.2	+5	± 10	APHA 21e, 2130B
10.00	10.1	+1		
20.00	19.2	-4		
50.00	48.0	-4		
100.00	96.1	-3.9		

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	1374 at 25 °C	-2.7	± 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	32.06	-2.8	± 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
8.42	8.38	-0.04	± 0.20	APHA 21e, 4500-O C&G
5.09	5.08	-0.01		

Water Level Meter Check

Expected Reading (m)	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Refrence
1.00	1.01	+0.01	± 0.05	YSI Sondes Procedure Manual

Temperature Check

Expected Reading (℃)	Sonde Reading (℃)	Tolerance (℃)	Tolerance Limit (℃)	Method Refrence
25.0	25.06	+0.06	± 2.0	Telarc Technical Guide No.3 1986

Checked by: ______________________ — Certified by: Raymond

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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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: 18-05-2015

 Castco LRN: EN0150512-19

Sample details as supplied by customer

Customer : Dragages-China Harbour-VSL Joint Venture Customer Ref. No. : --

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

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

Contract No.: HY/2011/09

Laboratory Test Result

Instrument Name: Sonde Environmental Monitoring System

Manufacturer : YSI

Model No. : YSI 6920

Serial No. : 03H1764AA

Instrument No. : W.03.03

Date of Calibration : 12-05-2015

Date of Next Calibration : 12-08-2015

pH Value Check (pH Probe : Model: 6589, L/N: 14M)

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	7.05	+0.03		
10.06	10.01	-0.05		

Turbidity Check (Turbidity Sensor : Model: 6136, S/N: 10F100058)

Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
4.00	3.9	-2.5	± 10	APHA 21e, 2130B
10.00	10.1	+1		
20.00	19.9	-0.5		
50.00	51.7	+3.4		
100.00	104.9	+4.9		

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	1412 at 25 °C	0.0	± 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	34.19	+3.6	± 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
8.42	8.40	-0.02	± 0.20	APHA 21e, 4500-O C&G
4.99	4.88	-0.11		

Water Level Meter Check

Expected Reading (m)	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Refrence
1.00	1.00	0.00	± 0.05	YSI Sondes Procedure Manual

Temperature Check

Expected Reading (℃)	Sonde Reading (℃)	Tolerance (℃)	Tolerance Limit (℃)	Method Refrence
25.0	24.83	-0.17	± 2.0	Telarc Technical Guide No.3 1986

Checked by: ____________________

AU KWOK KIN
Senior Chemist

End of Report

Certified by: Raymond

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 July 2015

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

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 August 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Aug
2-Aug	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug
	24 hr TSP 1 hr TSP X 3	Noise			24 hr TSP 1 hr TSP X 3	
9-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug
				24 hr TSP 1 hr TSP X 3	Noise	
16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug
			24 hr TSP 1 hr TSP X 3	Noise		
23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug
		24 hr TSP 1 hr TSP X 3	Noise			
30-Aug	31-Aug					
	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 July 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Jul	2-Jul	3-Jul	4-Jul
				Water Quality Monitoring Mid-Ebb 12:58 Mid-Flood 20:00		Water Quality Monitoring Mid-Flood 7:42 Mid-Ebb 14:22
5-Jul	6-Jul	7-Jul	8-Jul	9-Jul	10-Jul	11-Jul
	Water Quality Monitoring Mid-Flood 9:20 Mid-Ebb 15:51		Water Quality Monitoring Mid-Flood 11:21 Mid-Ebb 17:35		Water Quality Monitoring Mid-Ebb 8:13 Mid-Flood 14:12	
12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul
	Water Quality Monitoring Mid-Ebb 10:57 Mid-Flood 17:52		Water Quality Monitoring Mid-Ebb 12:22 Mid-Flood 19:21		Water Quality Monitoring Mid-Ebb 13:42 Mid-Flood 20:31	
19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul
	Water Quality Monitoring Mid-Flood 8:49 Mid-Ebb 15:23		Water Quality Monitoring Mid-Flood 10:07 Mid-Ebb 16:28		Water Quality Monitoring Mid-Flood 12:05 Mid-Ebb 17:58	
26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	
	Water Quality Monitoring Mid-Ebb 9:47 Mid-Flood 16:52		Water Quality Monitoring Mid-Ebb 11:14 Mid-Flood 18:20		Water Quality Monitoring Mid-Ebb 12:40 Mid-Flood 19:38	

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 August 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Aug
2-Aug	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug
	Water Quality Monitoring Mid-Flood 8:28 Mid-Ebb 14:54		Water Quality Monitoring Mid-Flood 10:13 Mid-Ebb 16:25		Water Quality Monitoring Mid-Flood 12:32 Mid-Ebb 18:21	
9-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug
	Water Quality Monitoring Mid-Ebb 9:53 Mid-Flood 17:02		Water Quality Monitoring Mid-Ebb 11:27 Mid-Flood 18:27		Water Quality Monitoring Mid-Ebb 12:47 Mid-Flood 19:27	
16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug
	Water Quality Monitoring Mid-Flood 8:02 Mid-Ebb 14:28		Water Quality Monitoring Mid-Flood 9:10 Mid-Ebb 15:27		Water Quality Monitoring Mid-Flood 10:34 Mid-Ebb 16:32	
23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug
	Water Quality Monitoring Mid-Ebb 7:52 Mid-Flood 15:17		Water Quality Monitoring Mid-Ebb 9:58 Mid-Flood 17:17		Water Quality Monitoring Mid-Ebb 11:34 Mid-Flood 18:30	
30-Aug	31-Aug					
	Water Quality Monitoring Mid-Flood 7:33 Mid-Ebb 13:54					

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 July 2015

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

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 August 2015

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

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 July 2015

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

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 August 2015

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

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

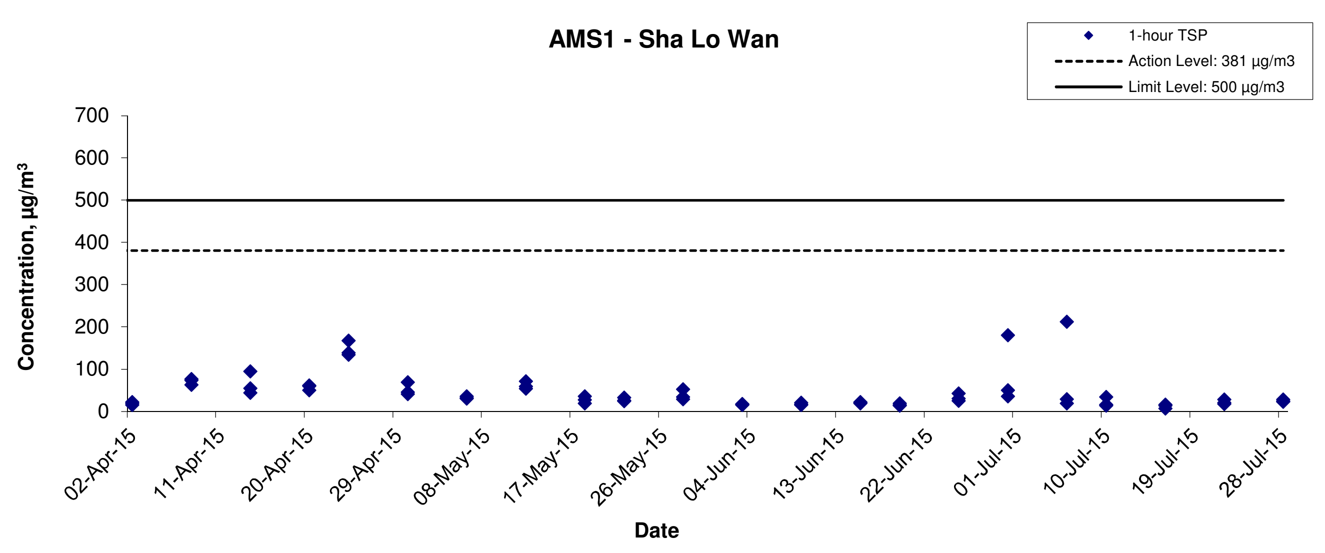
Location AMS1 - Sha Lo Wan

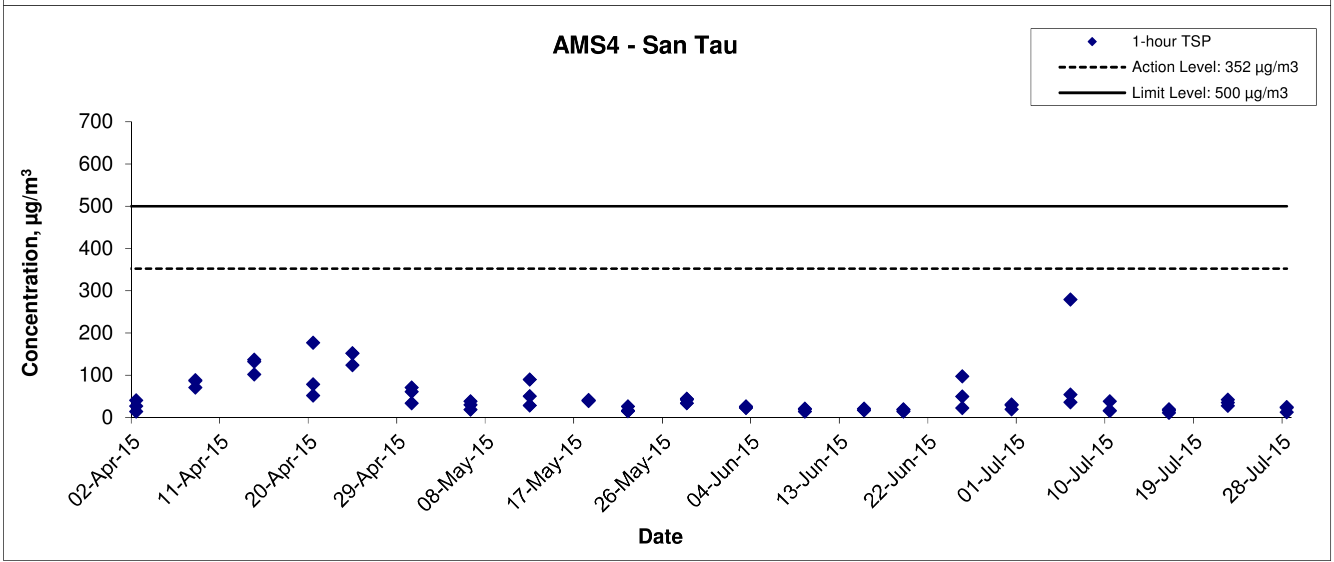
Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight (g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
6-Jul-15	9:00	Cloudy	301.1	753.9	2.8663	2.8677	0.0014	5691.8	5692.8	1.0	1.20	1.20	1.20	72.0	19
6-Jul-15	10:00	Cloudy	301.5	753.5	2.8553	2.8574	0.0021	5692.8	5693.8	1.0	1.20	1.20	1.20	71.9	29
6-Jul-15	11:00	Cloudy	301.3	753.7	2.8535	2.8688	0.0153	5693.8	5694.8	1.0	1.20	1.20	1.20	72.0	213
10-Jul-15	9:00	Sunny	302.3	753.3	2.8640	2.8652	0.0012	5718.8	5719.8	1.0	1.22	1.22	1.22	73.0	16
10-Jul-15	10:00	Sunny	302.5	753.1	2.8422	2.8432	0.0010	5719.8	5720.8	1.0	1.22	1.22	1.22	73.0	14
10-Jul-15	11:00	Sunny	302.7	752.9	2.8441	2.8467	0.0026	5720.8	5721.8	1.0	1.22	1.22	1.22	75.9	34
16-Jul-15	9:00	Sunny	303.3	752.7	2.8280	2.8292	0.0012	5745.8	5746.8	1.0	1.21	1.21	1.21	72.9	16
16-Jul-15	10:00	Sunny	303.5	752.5	2.7458	2.7463	0.0005	5746.8	5747.8	1.0	1.21	1.21	1.21	72.8	7
16-Jul-15	11:00	Sunny	303.7	752.3	2.7181	2.7191	0.0010	5747.8	5748.8	1.0	1.21	1.21	1.21	72.8	14
22-Jul-15	8:45	Rainy	299.3	759.0	2.8064	2.8085	0.0021	5772.8	5773.8	1.0	1.23	1.23	1.23	73.7	28
22-Jul-15	9:50	Rainy	299.5	758.9	2.8075	2.8088	0.0013	5773.8	5774.8	1.0	1.23	1.23	1.23	73.7	18
22-Jul-15	10:57	Rainy	299.7	758.7	2.7549	2.7564	0.0015	5774.8	5775.8	1.0	1.23	1.23	1.23	73.6	20
28-Jul-15	8:40	Sunny	301.3	761.6	2.6738	2.6759	0.0021	5799.8	5800.8	1.0	1.23	1.23	1.23	73.6	29
28-Jul-15	9:40	Sunny	301.5	761.5	2.6953	2.6971	0.0018	5800.8	5801.8	1.0	1.23	1.23	1.23	73.6	24
28-Jul-15	10:40	Sunny	301.7	761.3	2.6934	2.6951	0.0017	5801.8	5802.8	1.0	1.23	1.23	1.23	73.5	23
														Min	7
														Max	213
														Average	34

Location AMS4 - San Tau

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight (g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
6-Jul-15	13:00	Cloudy	303.4	758.9	2.8468	2.8670	0.0202	5365.0	5366.0	1.0	1.21	1.21	1.21	72.5	279
6-Jul-15	14:00	Cloudy	303.6	758.7	2.8373	2.8412	0.0039	5366.0	5367.0	1.0	1.21	1.21	1.21	72.4	54
6-Jul-15	15:00	Cloudy	303.8	758.5	2.8564	2.8590	0.0026	5367.0	5368.0	1.0	1.21	1.21	1.21	72.4	36
10-Jul-15	13:00	Sunny	304.0	752.4	2.8834	2.8845	0.0011	5392.0	5393.0	1.0	1.21	1.21	1.21	72.8	15
10-Jul-15	14:00	Sunny	304.1	752.2	2.8644	2.8672	0.0028	5393.0	5394.0	1.0	1.21	1.21	1.21	72.8	38
10-Jul-15	15:00	Sunny	304.3	752.1	2.8691	2.8703	0.0012	5394.0	5395.0	1.0	1.21	1.21	1.21	74.2	16
16-Jul-15	13:00	Sunny	299.1	752.6	2.8247	2.8261	0.0014	5419.0	5420.0	1.0	1.22	1.22	1.22	73.4	19
16-Jul-15	14:00	Sunny	299.3	752.4	2.8421	2.8433	0.0012	5420.0	5421.0	1.0	1.22	1.22	1.22	73.3	16
16-Jul-15	15:00	Sunny	299.5	752.3	2.8601	2.8609	0.0008	5421.0	5422.0	1.0	1.22	1.22	1.22	73.3	11
22-Jul-15	13:35	Cloudy	299.5	758.0	2.7542	2.7562	0.0020	5446.0	5447.0	1.0	1.23	1.23	1.23	73.6	27
22-Jul-15	14:40	Cloudy	299.7	757.9	2.7772	2.7798	0.0026	5447.0	5448.0	1.0	1.23	1.23	1.23	73.5	35
22-Jul-15	15:43	Cloudy	299.9	757.7	2.7061	2.7092	0.0031	5448.0	5449.0	1.0	1.23	1.22	1.23	73.5	42
28-Jul-15	13:20	Sunny	304.3	760.9	2.6705	2.6714	0.0009	5473.0	5474.0	1.0	1.22	1.22	1.22	73.2	12
28-Jul-15	14:20	Sunny	304.5	760.7	2.6813	2.6830	0.0017	5474.0	5475.0	1.0	1.22	1.22	1.22	73.1	23
28-Jul-15	15:20	Sunny	304.7	760.5	2.7073	2.7091	0.0018	5475.0	5476.0	1.0	1.22	1.22	1.22	73.1	25
														Min	11
														Max	279
														Average	43

1-hour TSP Concentration Levels





Title	Scale	Project	
Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Graphical Presentation of 1-hour TSP Monitoring Results	N.T.S	No. MA12014	CINOTECH
	Date Jul 15	Appendix E	

APPENDIX F
24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - 24-hour TSP Monitoring Results

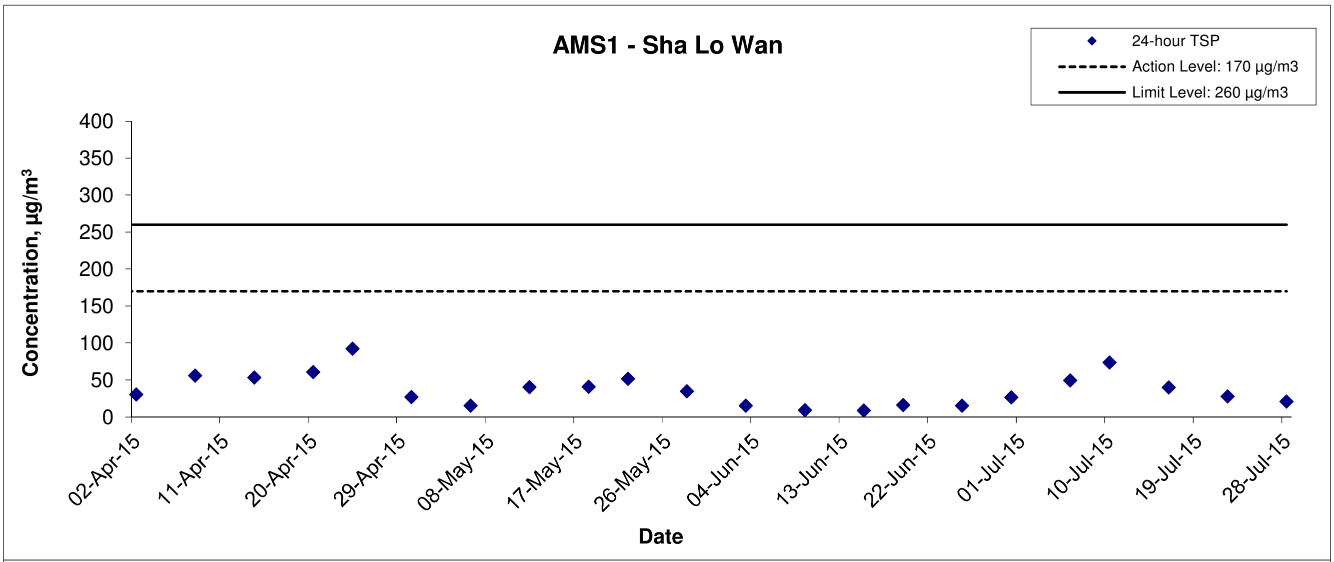
Location AMS1 - Sha Lo Wan

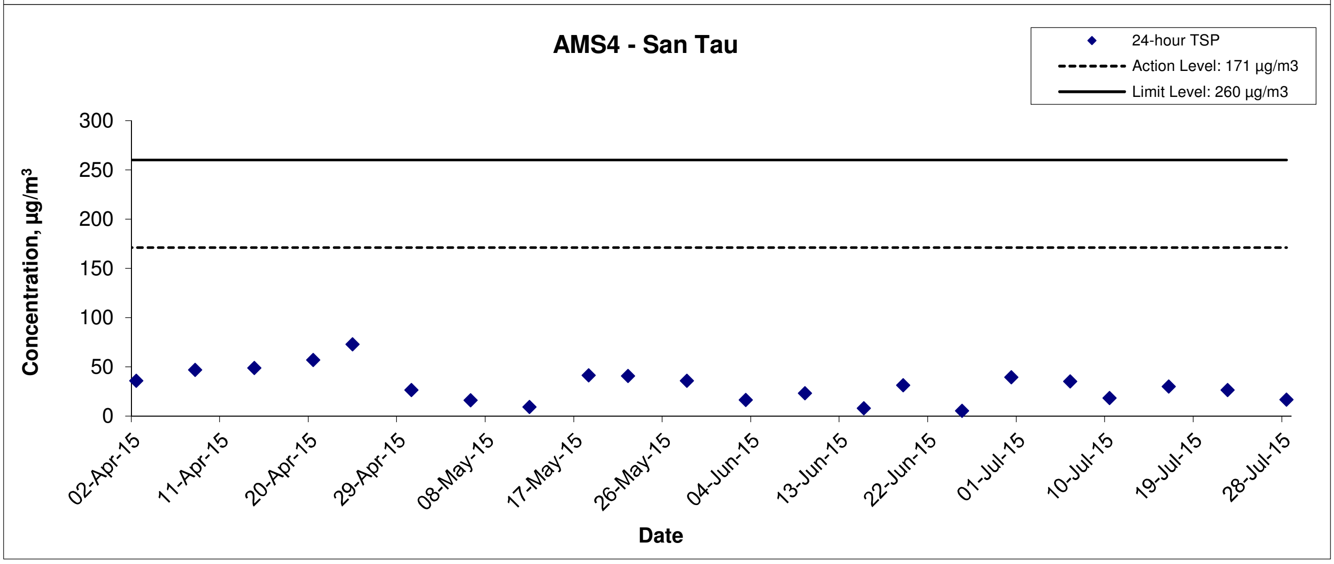
Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
					Initial	Final		Initial	Final		Initial	Final			
6-Jul-15	12:02	Cloudy	301.5	753.5	2.8679	2.9535	0.0856	5694.8	5718.8	24.0	1.20	1.20	1.20	1726.2	50
10-Jul-15	12:08	Sunny	302.9	752.7	2.8655	2.9948	0.1293	5721.8	5745.8	24.0	1.22	1.22	1.22	1750.2	74
16-Jul-15	12:05	Sunny	303.9	752.1	2.7694	2.8392	0.0698	5748.8	5772.8	24.0	1.21	1.21	1.21	1746.4	40
22-Jul-15	12:05	Cloudy	299.9	758.5	2.7192	2.7686	0.0494	5775.8	5799.8	24.0	1.23	1.23	1.23	1766.6	28
28-Jul-15	12:40	Sunny	301.9	761.1	2.6998	2.7368	0.0370	5802.8	5826.8	24.0	1.23	1.22	1.22	1763.6	21
														Min	21
														Max	74
														Average	42

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			
6-Jul-15	16:06	Cloudy	304.0	758.3	2.8628	2.9241	0.0613	5368.0	5392.0	24.0	1.21	1.21	1.21	1737.2	35
10-Jul-15	16:06	Sunny	304.5	751.9	2.8392	2.8712	0.0320	5395.0	5419.0	24.0	1.21	1.21	1.21	1745.5	18
16-Jul-15	16:20	Sunny	299.7	752.1	2.8608	2.9138	0.0530	5422.0	5446.0	24.0	1.22	1.22	1.22	1758.7	30
22-Jul-15	16:45	Cloudy	300.1	757.5	2.7293	2.7758	0.0465	5449.0	5473.0	24.0	1.22	1.22	1.22	1763.4	26
28-Jul-15	16:20	Sunny	304.9	760.3	2.6987	2.7282	0.0295	5476.0	5500.0	24.0	1.22	1.22	1.22	1753.5	17
														Min	17
														Max	35
														Average	25

24-hour TSP Concentration Levels





Title	Scale	Project	
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	N.T.S	No. MA12014	CINOTECH
	Date: Jul 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}
2-Jul-15	Sunny	13:25	70.2	72.3	50.2	68	66.9	68 Measured (i) Limit Level
		13:30	67.8	71.5	49.9			
		13:35	66.0	70.0	54.8			
		13:40	68.3	71.3	53.8			
		13:45	65.9	70.2	53.0			
		13:50	69.3	72.6	51.6			
7-Jul-15	Sunny	11:00	69.8	70.5	51.3	67		67 Measured (i) Limit Level
		11:05	68.3	69.5	50.5			
		11:10	66.9	68.1	51.5			
		11:15	65.6	69.7	53.1			
		11:20	66.7	68.5	51.9			
		11:25	65.4	67.9	50.9			
17-Jul-15	Sunny	14:10	70.3	72.4	51.2	70		70 Measured (i) Limit Level
		14:15	70.8	73.5	49.9			
		14:20	69.0	72.0	54.8			
		14:25	71.0	72.3	56.8			
		14:30	68.9	72.2	56.0			
		14:35	69.3	72.6	51.6			
23-Jul-15	Cloudy	11:25	72.2	74.3	52.2	71		71 Measured (i) Limit Level
		11:30	70.8	74.5	52.9			
		11:35	69.1	73.1	57.8			
		11:40	71.4	74.4	57.8			
		11:45	68.9	73.2	56.0			
		11:50	72.3	74.6	53.6			
29-Jul-15	Sunny	10:45	73.2	75.0	54.2	71		71 Measured I- Limit Level
		10:50	70.8	74.5	52.9			
		10:55	70.1	73.0	54.8			
		11:00	71.3	74.3	56.8			
		11:05	69.9	73.2	55.0			
		11:10	72.3	74.8	54.6			

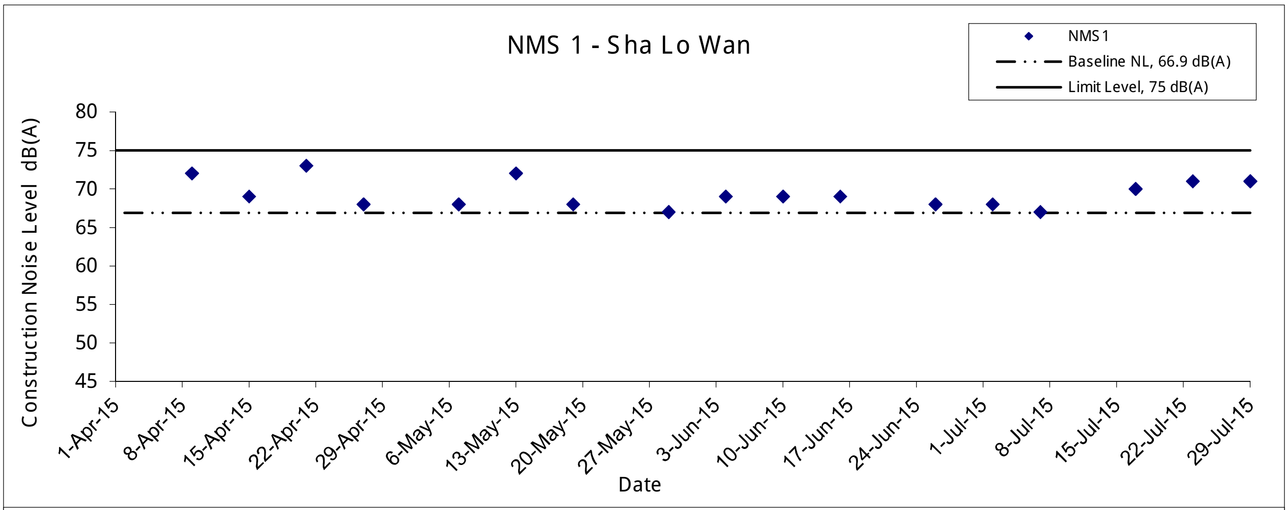
Remark: *+3dB(A) Fa´ade correction included

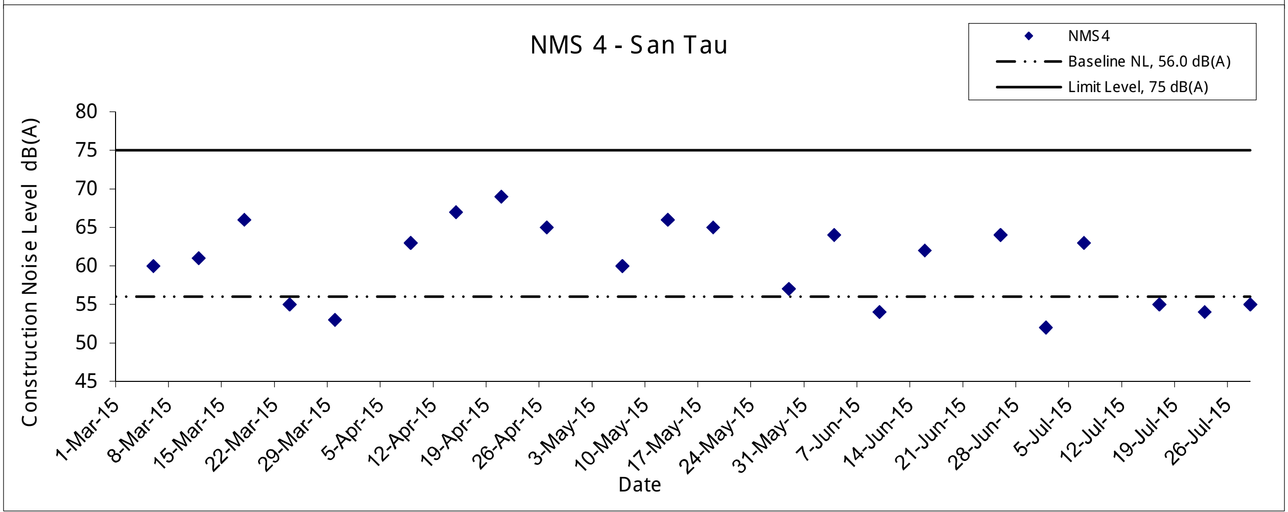
Location NMS 4 - San Tau

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}
2-Jul-15	Sunny	15:00	55.5	56.7	45.7	52	56.0	52 Measured (i) Limit Level
		15:05	53.9	56.7	45.2			
		15:10	49.3	51.7	44.4			
		15:15	49.7	52.6	45.2			
		15:20	50.8	51.9	44.9			
		15:25	49.6	52.3	45.2			
7-Jul-15	Sunny	13:00	62.2	62.9	58.1	63		63 Measured (i) Limit Level
		13:05	63.0	63.8	60.7			
		13:10	62.9	63.8	62.0			
		13:15	63.2	64.6	62.1			
		13:20	62.9	64.3	61.7			
		13:25	61.9	62.7	61.0			
17-Jul-15	Sunny	16:00	58.5	59.7	48.7	55		55 Measured (i) Limit Level
		16:05	52.3	54.7	47.4			
		16:10	53.9	55.7	45.7			
		16:15	52.7	53.6	45.2			
		16:20	53.8	54.9	47.9			
		16:25	52.6	55.3	48.2			
23-Jul-15	Cloudy	13:35	57.5	59.7	47.7	54		54 Measured (i) Limit Level
		13:40	55.9	58.7	47.2			
		13:45	51.3	53.7	46.4			
		13:50	51.7	54.6	47.2			
		13:55	52.8	53.9	46.9			
		14:00	51.6	54.3	47.2			
29-Jul-15	Sunny	14:20	58.5	60.7	48.7	55		55 Measured (i) Limit Level
		14:25	56.9	59.7	48.2			
		14:30	53.3	54.7	47.4			
		14:35	52.7	55.6	47.2			
		14:40	53.8	54.9	47.9			
		14:45	52.6	55.3	48.2			

Remark: *+3dB(A) Fa´ade 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 Jul 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) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
2-Jul-15	Sunny	Moderate	12:23	Surface	1	28.4 28.9	28.7	7.9 7.9	7.9	18.0 18.0	18.0	82.5 83.4	83.0	5.8 5.8	5.8	5.6	8.8 9.5	9.2	10.9	5.8 7.2	6.5	6.8
				Middle	5.5	28.3 28.9	28.6	7.9 7.9	7.9	18.0 18.0	18.0	76.7 77.6	77.2	5.4 5.4	5.4		9.8 10.1	10.0		6.0 5.7	5.9	
				Bottom	10	29.4 29.0	29.2	7.9 7.9	7.9	28.8 28.8	28.8	79.8 79.2	79.5	5.2 5.2	5.2	5.2	13.3 13.7	13.5		8.2 7.8	8.0	
4-Jul-15	Sunny	Moderate	14:01	Surface	1	29.6 29.5	29.6	7.8 7.8	7.8	18.6 18.7	18.7	86.7 85.9	86.3	6.0 5.9	6.0	5.9	3.8 3.1	3.5	8.4	4.8 8.2	6.5	7.6
				Middle	6.5	25.9 26.3	26.1	7.8 7.8	7.8	23.9 23.3	23.6	80.9 80.1	80.5	5.7 5.7	5.7		7.9 6.8	7.4		8.1 7.7	7.9	
				Bottom	12	24.2 24.2	24.2	7.8 7.7	7.8	32.9 32.1	32.5	72.1 71.7	71.9	5.0 5.0	5.0	5.0	14.1 14.5	14.3		8.5 8.3	8.4	
6-Jul-15	Sunny	Moderate	16:21	Surface	1	28.3 27.0	27.7	7.8 7.8	7.8	21.3 21.9	21.6	94.2 92.7	93.5	6.5 6.5	6.5	6.4	4.4 4.4	4.4	6.5	4.9 3.9	4.4	3.9
				Middle	5.5	28.3 27.0	27.7	7.7 7.8	7.8	23.3 24.0	23.7	94.2 82.7	88.5	6.5 5.8	6.2		6.8 6.5	6.7		2.4 3.3	2.9	
				Bottom	10	28.3 27.0	27.7	7.7 7.8	7.8	26.3 27.0	26.7	93.9 86.7	90.3	6.3 5.9	6.1	6.1	8.4 8.1	8.3		4.7 3.8	4.3	
8-Jul-15	Sunny	Moderate	16:46	Surface	1	27.9 27.9	27.9	8.1 8.1	8.1	24.8 24.8	24.8	83.1 83.9	83.5	6.7 6.8	6.8	6.7	3.9 3.6	3.8	7.6	2.2 2.4	2.3	4.0
				Middle	6.5	27.2 27.1	27.2	8.1 8.1	8.1	27.0 27.2	27.1	75.8 75.6	75.7	6.5 6.5	6.5		6.4 6.8	6.6		2.5 6.8	4.7	
				Bottom	12	25.3 25.3	25.3	8.0 8.0	8.0	32.7 32.7	32.7	45.2 44.6	44.9	5.0 4.9	5.0	5.0	12.0 12.7	12.4		6.5 3.7	5.1	
10-Jul-15	Sunny	Moderate	08:45	Surface	1	26.3 26.0	26.2	7.8 7.8	7.8	9.6 9.6	9.6	82.1 80.7	81.4	6.3 6.2	6.3	5.9	4.4 4.4	4.4	4.9	10.4 5.3	7.9	7.3
				Middle	6	25.6 25.5	25.6	7.7 7.8	7.8	13.6 13.5	13.6	72.6 70.7	71.7	5.5 5.4	5.5		4.5 4.5	4.5		5.1 9.5	7.3	
				Bottom	11	24.6 24.2	24.4	7.8 7.8	7.8	20.7 21.6	21.2	69.5 69.3	69.4	5.1 5.1	5.1	5.1	5.9 5.8	5.9		7.2 6.3	6.8	
13-Jul-15	Sunny	Moderate	11:26	Surface	1	28.7 28.5	28.6	7.8 7.8	7.8	20.5 19.7	20.1	73.0 72.7	72.9	5.7 5.8	5.8	5.7	4.3 3.8	4.1	7.0	2.8 1.7	2.3	6.1
				Middle	5.5	28.6 28.5	28.6	7.9 7.9	7.9	24.8 24.4	24.6	79.1 74.1	76.6	5.6 5.6	5.6		7.1 7.1	7.1		4.8 16.0	10.4	
				Bottom	10	28.5 28.9	28.7	7.9 7.9	7.9	31.6 30.8	31.2	80.8 72.6	76.7	5.0 5.1	5.1	5.1	9.8 9.5	9.7		7.8 3.2	5.5	
15-Jul-15	Sunny	Moderate	12:40	Surface	1	26.0 25.9	26.0	8.2 8.2	8.2	32.4 31.0	31.7	98.6 95.3	97.0	6.7 6.5	6.6	6.1	6.7 6.7	6.7	10.0	7.1 8.2	7.7	6.3
				Middle	6.5	25.9 25.8	25.9	8.2 8.3	8.3	32.9 27.8	30.4	82.7 79.2	81.0	5.6 5.5	5.6		9.8 10.0	9.9		4.7 6.9	5.8	
				Bottom	12	25.8 25.9	25.9	8.2 8.2	8.2	29.0 28.4	28.7	73.4 73.6	73.5	5.1 5.1	5.1	5.1	13.4 13.3	13.4		4.9 5.8	5.4	
17-Jul-15	Sunny	Moderate	13:24	Surface	1	27.1 26.9	27.0	7.7 7.7	7.7	32.6 31.7	32.2	79.4 79.1	79.3	5.3 5.3	5.3	5.5	8.7 8.8	8.8	11.2	6.3 6.8	6.6	7.7
				Middle	4.5	27.0 27.0	27.0	7.8 7.8	7.8	32.4 31.7	32.1	85.3 80.4	82.9	5.7 5.4	5.6		10.6 10.8	10.7		7.5 6.0	6.8	
				Bottom	8	26.9 27.4	27.2	7.8 7.8	7.8	32.7 32.4	32.6	87.0 79.0	83.0	5.8 5.2	5.5	5.5	13.6 14.7	14.2		10.7 8.5	9.6	

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-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	15:09	Surface	1	28.2 28.2	28.2	8.1 8.1	8.1	27.8 27.8	27.8	100.9 100.3	100.6	6.7 6.7	6.7	6.7	3.5 3.5	3.5	9.3	10.7 16.5	13.6	11.1
				Middle	6.5	28.1 28.1	28.1	8.2 8.2	8.2	29.6 29.6	29.6	100.3 100.1	100.2	6.7 6.6	6.7		10.2 10.0	10.1		9.0 9.7	9.4	
				Bottom	12	28.1 28.1	28.1	8.2 8.2	8.2	29.6 29.6	29.6	100.0 100.1	100.1	6.6 6.6	6.6	6.6	14.2 14.3	14.3		11.4 9.3	10.4	
22-Jul-15	Sunny	Moderate	16:09	Surface	1	27.3 27.3	27.3	7.6 7.6	7.6	16.0 16.0	16.0	71.3 72.0	71.7	5.6 5.5	5.6	5.4	11.0 11.0	11.0	6.6	5.2 9.0	7.1	7.0
				Middle	6	26.2 26.2	26.2	7.8 7.9	7.9	20.4 20.4	20.4	67.4 66.5	67.0	5.2 5.2	5.2		4.6 4.5	4.6		5.8 7.0	6.4	
				Bottom	11	26.1 26.1	26.1	7.9 7.9	7.9	24.1 24.1	24.1	63.5 64.0	63.8	5.0 5.0	5.0	5.0	4.3 4.3	4.3		7.4 7.3	7.4	
24-Jul-15	Fine	Moderate	16:55	Surface	1	27.5 27.7	27.6	7.9 7.7	7.8	17.7 17.2	17.5	79.3 79.3	79.3	5.7 5.7	5.7	5.7	4.7 4.8	4.8	8.5	14.0 34.2	24.1	14.2
				Middle	6	27.9 27.6	27.8	8.0 7.8	7.9	24.9 23.9	24.4	81.7 80.8	81.3	5.6 5.6	5.6		7.5 7.9	7.7		3.2 12.7	8.0	
				Bottom	11	27.8 27.8	27.8	8.0 7.9	8.0	24.1 24.3	24.2	81.4 83.5	82.5	5.6 5.7	5.7	5.7	12.3 13.7	13.0		9.6 11.2	10.4	
27-Jul-15	Sunny	Calm	09:33	Surface	1	28.7 28.7	28.7	8.1 8.1	8.1	23.7 23.7	23.7	110.4 110.4	110.4	8.0 8.0	8.0	7.9	2.5 2.5	2.5	2.7	2.9 2.8	2.9	3.0
				Middle	6.5	28.7 28.7	28.7	8.1 8.1	8.1	24.1 24.1	24.1	108.0 108.0	108.0	7.8 7.8	7.8		2.1 2.1	2.1		3.0 2.5	2.8	
				Bottom	12	27.8 27.8	27.8	8.0 8.0	8.0	29.1 28.9	29.0	89.5 88.0	88.8	6.4 6.3	6.4	6.4	3.4 3.3	3.4		2.7 3.6	3.2	
29-Jul-15	Sunny	Moderate	11:00	Surface	1	28.1 28.0	28.1	8.1 8.0	8.1	18.4 18.3	18.4	102.8 101.7	102.3	7.3 7.2	7.3	7.1	2.9 3.1	3.0	6.5	3.5 4.4	4.0	6.1
				Middle	6.5	25.6 25.6	25.6	8.0 8.0	8.0	31.4 31.3	31.4	100.1 97.0	98.6	6.9 6.6	6.8		6.7 7.3	7.0		4.6 11.0	7.8	
				Bottom	12	24.3 24.3	24.3	8.0 8.0	8.0	32.6 32.7	32.7	89.6 88.9	89.3	6.2 6.2	6.2	6.2	9.4 9.3	9.4		6.6 6.6	6.6	
31-Jul-15	Sunny	Moderate	12:58	Surface	1	28.0 28.2	28.1	7.9 7.9	7.9	21.7 20.5	21.1	83.9 81.9	82.9	5.8 5.7	5.8	5.6	15.5 16.5	16.0	18.8	30.0 29.8	29.9	30.4
				Middle	6.5	28.0 28.2	28.1	7.9 7.9	7.9	21.8 24.6	23.2	77.4 77.9	77.7	5.4 5.3	5.4		18.6 18.8	18.7		28.8 34.3	31.6	
				Bottom	12	28.2 28.2	28.2	8.1 8.1	8.1	20.6 24.6	22.6	71.1 73.1	72.1	5.0 5.0	5.0	5.0	21.2 22.1	21.7		28.0 31.2	29.6	

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 (^oC) Value	Temperature (^oC) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
2-Jul-15	Fine	Moderate	19:20	Surface	1	26.8 26.9	26.9	8.0 8.0	8.0	18.0 18.0	18.0	87.1 87.7	87.4	6.3 6.3	6.3	6.0	10.5 10.1	10.3	10.5	9.7 8.0	8.9	8.1
				Middle	5.5	28.5 28.5	28.5	8.0 7.9	8.0	18.0 18.0	18.0	81.1 81.1	81.1	5.7 5.7	5.7		8.8 10.7	9.8		7.3 8.2	7.8	
				Bottom	10	27.6 27.0	27.3	8.0 7.9	8.0	28.8 28.8	28.8	75.0 74.3	74.7	5.0 5.0	5.0	5.0	11.3 11.7	11.5		7.7 7.7	7.7	
4-Jul-15	Sunny	Moderate	07:51	Surface	1	28.7 28.4	28.6	7.8 7.8	7.8	24.5 24.5	24.5	92.4 91.6	92.0	6.2 6.2	6.2	6.0	4.1 4.4	4.3	4.8	6.3 7.8	7.1	5.0
				Middle	6	28.1 28.0	28.1	7.8 7.8	7.8	28.4 28.4	28.4	87.5 85.2	86.4	5.8 5.7	5.8		4.4 4.2	4.3		4.8 4.5	4.7	
				Bottom	11	26.9 26.8	26.9	7.8 7.8	7.8	30.5 30.4	30.5	76.7 75.7	76.2	5.2 5.1	5.2	5.2	5.8 5.8	5.8		3.6 2.7	3.2	
6-Jul-15	Sunny	Moderate	10:12	Surface	1	28.3 28.3	28.3	7.7 7.7	7.7	22.3 22.0	22.2	96.0 93.6	94.8	6.6 6.5	6.6	6.5	8.7 7.8	8.3	7.9	5.3 7.3	6.3	5.5
				Middle	5.5	28.3 28.3	28.3	7.7 7.7	7.7	24.0 24.0	24.0	91.6 92.8	92.2	6.2 6.3	6.3		8.6 8.0	8.3		3.7 4.3	4.0	
				Bottom	10	28.3 28.4	28.4	7.7 7.7	7.7	27.0 25.9	26.5	92.7 88.1	90.4	6.2 5.9	6.1	6.1	7.6 6.7	7.2		6.8 5.6	6.2	
8-Jul-15	Sunny	Moderate	11:27	Surface	1	28.0 28.0	28.0	8.1 8.1	8.1	25.1 25.1	25.1	87.6 87.9	87.8	7.0 7.0	7.0	6.5	4.3 3.7	4.0	7.2	4.9 4.9	4.9	4.5
				Middle	6	26.2 26.3	26.3	8.0 8.0	8.0	30.8 30.5	30.7	57.1 56.2	56.7	5.9 5.8	5.9		6.2 6.6	6.4		5.4 3.6	4.5	
				Bottom	11	25.5 25.5	25.5	8.0 8.0	8.0	32.7 32.7	32.7	46.5 45.7	46.1	5.0 5.0	5.0	5.0	10.6 11.5	11.1		3.6 4.7	4.2	
10-Jul-15	Sunny	Moderate	14:09	Surface	1	27.0 27.1	27.1	7.8 7.9	7.9	11.1 11.3	11.2	84.3 84.5	84.4	6.3 6.3	6.3	6.2	3.6 3.7	3.7	8.3	7.2 8.3	7.8	8.3
				Middle	6.5	23.4 23.9	23.7	7.8 7.8	7.8	23.9 23.4	23.7	82.0 81.2	81.6	6.1 6.0	6.1		7.4 6.5	7.0		8.5 8.0	8.3	
				Bottom	12	21.9 22.0	22.0	7.8 7.8	7.8	30.9 31.0	31.0	69.2 68.6	68.9	5.1 5.0	5.1	5.1	14.1 14.3	14.2		11.4 5.9	8.7	
13-Jul-15	Sunny	Moderate	17:17	Surface	1	28.6 28.5	28.6	7.8 7.8	7.8	20.6 20.6	20.6	76.1 78.7	77.4	5.4 5.6	5.5	5.6	2.8 2.8	2.8	4.9	6.5 7.2	6.9	6.7
				Middle	5.5	28.5 28.6	28.6	7.7 7.9	7.8	23.9 24.3	24.1	77.1 80.1	78.6	5.5 5.7	5.6		4.7 4.7	4.7		4.3 9.3	6.8	
				Bottom	10	28.9 28.7	28.8	7.9 7.9	7.9	27.0 27.1	27.1	72.6 77.8	75.2	5.2 5.1	5.2	5.2	6.8 7.3	7.1		5.5 7.2	6.4	
15-Jul-15	Fine	Moderate	19:26	Surface	1	26.0 26.0	26.0	8.1 8.1	8.1	31.8 31.8	31.8	93.8 93.0	93.4	6.4 6.3	6.4	6.4	6.7 6.7	6.7	9.5	5.3 6.0	5.7	5.6
				Middle	5.5	25.8 25.8	25.8	8.1 8.1	8.1	31.0 31.1	31.1	92.6 90.2	91.4	6.3 6.2	6.3		9.3 9.4	9.4		5.8 4.8	5.3	
				Bottom	10	25.8 25.7	25.8	8.1 8.1	8.1	31.6 30.8	31.2	89.0 88.1	88.6	6.1 6.0	6.1	6.1	12.4 12.3	12.4		5.9 5.8	5.9	
17-Jul-15	Sunny	Moderate	19:42	Surface	1	27.0 26.8	26.9	7.7 7.7	7.7	32.6 32.7	32.7	81.9 84.4	83.2	5.4 5.6	5.5	5.6	10.6 10.7	10.7	12.3	7.8 11.8	9.8	9.1
				Middle	4.5	26.9 27.0	27.0	7.6 7.8	7.7	31.9 32.4	32.2	82.8 85.8	84.3	5.5 5.7	5.6		10.7 11.2	11.0		6.5 9.7	8.1	
				Bottom	8	27.3 27.0	27.2	7.8 7.8	7.8	32.0 32.1	32.1	78.6 83.6	81.1	5.2 5.6	5.4	5.4	15.3 14.8	15.1		5.7 13.1	9.4	

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

Water Quality Monitoring Results at CS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC) Value	Temperature (^oC) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
20-Jul-15	Cloudy	Moderate	08:56	Surface	1	28.0 28.0	28.0	8.0 8.0	8.0	28.9 28.9	28.9	102.1 101.5	101.8	6.8 6.8	6.8	6.8	5.2 5.2	5.2	5.8	7.5 8.7	8.1	7.7
				Middle	6	28.0 28.0	28.0	8.0 8.0	8.0	29.3 29.4	29.4	101.6 101.5	101.6	6.8 6.8	6.8		5.0 5.3	5.2		6.7 7.0	6.9	
				Bottom	11	27.9 27.9	27.9	8.1 8.1	8.1	30.3 29.6	30.0	101.5 101.4	101.5	6.7 6.8	6.8	6.8	6.9 7.0	7.0		8.5 7.7	8.1	
22-Jul-15	Sunny	Moderate	10:01	Surface	1	27.3 27.3	27.3	7.6 7.6	7.6	15.2 15.1	15.2	73.6 74.4	74.0	5.6 5.8	5.7	5.6	11.1 11.0	11.1	6.7	8.7 7.2	8.0	7.6
				Middle	6	26.2 26.2	26.2	7.8 7.8	7.8	19.5 19.4	19.5	68.6 68.4	68.5	5.4 5.3	5.4		5.0 4.7	4.9		8.2 5.5	6.9	
				Bottom	11	26.1 26.1	26.1	7.8 7.8	7.8	24.4 24.1	24.3	64.4 63.5	64.0	5.0 5.0	5.0	5.0	4.2 4.2	4.2		7.7 8.0	7.9	
24-Jul-15	Sunny	Moderate	11:24	Surface	1	27.8 27.6	27.7	8.0 8.1	8.1	16.8 17.7	17.3	81.5 78.0	79.8	5.8 5.6	5.7	5.8	2.6 2.7	2.7	6.0	12.3 10.3	11.3	10.5
				Middle	6	27.8 27.7	27.8	7.8 8.0	7.9	23.9 22.7	23.3	83.7 83.6	83.7	5.8 5.8	5.8		6.2 6.3	6.3		10.0 10.7	10.4	
				Bottom	11	27.7 27.8	27.8	7.7 7.8	7.8	25.5 25.7	25.6	81.8 88.3	85.1	5.6 6.0	5.8	5.8	8.5 9.6	9.1		11.3 8.2	9.8	
27-Jul-15	Sunny	Calm	16:02	Surface	1	29.6 29.6	29.6	8.1 8.1	8.1	21.1 21.1	21.1	106.4 106.8	106.6	7.7 7.7	7.7	7.7	3.0 3.3	3.2	5.5	4.0 2.9	3.5	3.0
				Middle	6.5	28.9 28.8	28.9	8.0 8.0	8.0	24.1 24.2	24.2	107.5 105.4	106.5	7.8 7.6	7.7		3.5 3.6	3.6		2.5 2.3	2.4	
				Bottom	12	28.0 28.0	28.0	7.9 7.9	7.9	28.4 28.5	28.5	82.5 82.5	82.5	5.9 5.9	5.9	5.9	9.5 9.8	9.7		3.5 2.9	3.2	
29-Jul-15	Fine	Moderate	18:02	Surface	1	28.6 28.6	28.6	8.1 8.1	8.1	16.4 16.4	16.4	98.8 99.3	99.1	7.0 7.0	7.0	6.9	4.9 4.8	4.9	10.6	7.3 5.5	6.4	6.6
				Middle	6.5	26.8 27.0	26.9	7.9 7.9	7.9	25.5 24.5	25.0	94.5 95.8	95.2	6.6 6.7	6.7		11.0 11.6	11.3		6.9 6.4	6.7	
				Bottom	12	25.8 25.8	25.8	7.9 7.9	7.9	30.0 30.2	30.1	81.2 80.5	80.9	5.6 5.5	5.6	5.6	15.5 15.7	15.6		5.9 7.3	6.6	
31-Jul-15	Fine	Moderate	19:33	Surface	1	28.2 28.2	28.2	7.9 7.9	7.9	27.4 27.4	27.4	83.2 82.6	82.9	5.6 5.5	5.6	5.6	14.1 13.1	13.6	16.1	30.7 19.3	25.0	30.1
				Middle	6	28.0 28.0	28.0	7.9 7.9	7.9	26.6 26.7	26.7	82.4 80.3	81.4	5.6 5.4	5.5		15.7 15.8	15.8		34.0 32.3	33.2	
				Bottom	11	27.9 27.9	27.9	7.9 7.9	7.9	27.2 26.4	26.8	79.4 78.7	79.1	5.4 5.3	5.4	5.4	18.8 18.7	18.8		35.7 28.3	32.0	

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

Water Quality Monitoring Results at CS2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Jul-15	Sunny	Moderate	12:23	Surface	1	29.5 29.5	29.5	7.8 7.8	7.8	18.0 18.0	18.0	95.5 95.0	95.3	6.6 6.6	6.6	6.2	4.9 5.0	5.0	7.2	5.3 8.5	6.9	5.4
				Middle	4	28.6 28.7	28.7	7.8 7.8	7.8	20.0 19.3	19.7	83.0 82.5	82.8	5.8 5.7	5.8		5.0 5.4	5.2		4.8 4.2	4.5	
				Bottom	7	25.9 25.9	25.9	7.7 7.7	7.7	29.2 29.2	29.2	77.2 75.9	76.6	5.3 5.2	5.3	5.3	11.2 11.5	11.4		5.2 4.5	4.9	
4-Jul-15	Sunny	Moderate	13:08	Surface	1	28.7 28.7	28.7	7.7 7.7	7.7	22.1 22.1	22.1	90.9 90.6	90.8	6.2 6.2	6.2	6.1	4.2 3.7	4.0	5.7	4.9 4.8	4.9	6.2
				Middle	4	27.7 27.5	27.6	7.8 7.8	7.8	24.6 25.2	24.9	87.2 87.3	87.3	6.0 6.0	6.0		4.4 4.3	4.4		5.7 8.1	6.9	
				Bottom	7	25.7 25.7	25.7	7.7 7.7	7.7	29.8 29.8	29.8	73.7 73.1	73.4	5.1 5.0	5.1	5.1	8.2 8.9	8.6		6.8 6.8	6.8	
6-Jul-15	Sunny	Moderate	14:58	Surface	1	28.0 28.0	28.0	7.9 7.9	7.9	21.3 21.3	21.3	97.8 98.2	98.0	6.8 6.8	6.8	6.5	7.1 6.4	6.8	8.2	8.8 7.0	7.9	6.2
				Middle	4	27.4 27.6	27.5	7.8 7.8	7.8	23.2 22.5	22.9	87.8 89.4	88.6	6.1 6.2	6.2		10.6 11.6	11.1		4.4 8.2	6.3	
				Bottom	7	24.6 24.7	24.7	7.8 7.8	7.8	26.9 26.9	26.9	78.7 77.2	78.0	5.6 5.5	5.6	5.6	6.7 6.5	6.6		5.0 3.7	4.4	
8-Jul-15	Sunny	Moderate	16:19	Surface	1	29.3 29.3	29.3	8.1 8.1	8.1	22.3 22.3	22.3	107.5 107.9	107.7	7.3 7.3	7.3	7.0	9.6 9.0	9.3	10.3	4.4 2.9	3.7	4.3
				Middle	4	28.7 28.8	28.8	8.0 8.0	8.0	24.0 23.3	23.7	96.8 96.8	96.8	6.6 6.6	6.6		9.4 9.8	9.6		5.2 4.3	4.8	
				Bottom	7	25.8 25.8	25.8	7.9 7.9	7.9	33.7 33.7	33.7	76.8 75.0	75.9	5.2 5.1	5.2	5.2	12.5 11.5	12.0		3.1 5.7	4.4	
10-Jul-15	Sunny	Moderate	08:06	Surface	1	25.8 25.8	25.8	7.7 7.7	7.7	16.3 16.4	16.4	87.4 85.8	86.6	6.5 6.4	6.5	6.3	4.8 5.1	5.0	4.9	4.6 5.9	5.3	6.4
				Middle	4	25.8 25.8	25.8	7.8 7.8	7.8	16.5 16.6	16.6	81.5 81.3	81.4	6.1 6.0	6.1		4.7 4.9	4.8		6.1 7.1	6.6	
				Bottom	7	25.4 25.4	25.4	7.8 7.8	7.8	25.3 25.0	25.2	77.3 76.7	77.0	5.5 5.5	5.5	5.5	4.8 4.8	4.8		9.0 5.8	7.4	
13-Jul-15	Sunny	Moderate	10:28	Surface	1	28.7 28.7	28.7	7.9 8.0	8.0	19.2 19.2	19.2	88.6 88.9	88.8	6.7 6.7	6.7	6.2	2.8 2.9	2.9	4.9	4.0 14.0	9.0	5.8
				Middle	4	27.4 27.3	27.4	7.9 7.9	7.9	25.4 25.6	25.5	75.1 74.7	74.9	5.7 5.6	5.7		2.4 2.5	2.5		4.8 3.8	4.3	
				Bottom	7	25.8 25.8	25.8	7.9 7.9	7.9	30.9 30.9	30.9	66.9 66.3	66.6	5.1 5.0	5.1	5.1	9.0 9.4	9.2		4.7 3.5	4.1	
15-Jul-15	Sunny	Moderate	11:32	Surface	1	26.0 25.7	25.9	8.1 8.2	8.2	29.5 30.2	29.9	94.5 91.8	93.2	6.5 6.3	6.4	5.9	3.7 4.4	4.1	7.3	5.7 7.7	6.7	10.1
				Middle	4	26.3 25.9	26.1	8.1 8.2	8.2	29.4 29.6	29.5	79.3 76.7	78.0	5.4 5.3	5.4		6.7 6.5	6.6		12.5 13.3	12.9	
				Bottom	7	25.7 25.8	25.8	8.2 8.3	8.3	29.3 30.3	29.8	78.9 76.5	77.7	5.5 5.3	5.4	5.4	11.2 11.3	11.3		9.9 11.4	10.7	
17-Jul-15	Sunny	Moderate	12:37	Surface	1	28.0 28.0	28.0	7.8 7.8	7.8	30.8 30.7	30.8	86.5 85.5	86.0	6.1 6.1	6.1	5.7	4.2 4.5	4.4	10.3	4.6 7.1	5.9	6.4
				Middle	4	27.0 27.0	27.0	7.8 7.8	7.8	32.3 32.3	32.3	75.5 74.6	75.1	5.3 5.3	5.3		10.8 11.4	11.1		6.2 6.1	6.2	
				Bottom	7	26.8 26.8	26.8	7.8 7.8	7.8	33.0 33.0	33.0	72.9 72.5	72.7	5.1 5.1	5.1	5.1	15.2 15.4	15.3		8.0 6.2	7.1	

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

Water Quality Monitoring Results at 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*
20-Jul-15	Cloudy	Moderate	14:26	Surface	1	28.1 28.1	28.1	7.9 7.9	7.9	27.4 27.4	27.4	101.8 101.2	101.5	6.8 6.8	6.8	6.6	4.7 4.8	4.8		5.8 13.8	9.8	
				Middle	3	27.9 27.8	27.9	8.0 8.0	8.0	28.4 28.5	28.5	95.5 94.4	95.0	6.4 6.3	6.4		7.2 7.1	7.2	6.6	8.2 7.2	7.7	8.5
				Bottom	5	27.6 27.6	27.6	8.0 8.1	8.1	29.6 29.7	29.7	92.2 111.5	101.9	6.2 7.5	6.9	6.9	7.9 7.7	7.8		7.8 8.3	8.1	
22-Jul-15	Sunny	Moderate	15:23	Surface	1	27.4 27.4	27.4	8.0 8.0	8.0	16.3 16.2	16.3	81.4 82.0	81.7	5.9 5.9	5.9	5.7	5.7 6.0	5.9		5.5 7.4	6.5	
				Middle	4	26.7 26.8	26.8	8.0 8.0	8.0	20.8 20.7	20.8	76.2 76.5	76.4	5.4 5.5	5.5		7.5 8.2	7.9	7.9	4.1 5.0	4.6	5.6
				Bottom	7	25.8 25.8	25.8	8.0 8.0	8.0	26.5 26.4	26.5	70.6 70.7	70.7	5.0 5.0	5.0	5.0	10.2 9.5	9.9		6.7 4.5	5.6	
24-Jul-15	Fine	Moderate	17:03	Surface	1	27.7 27.6	27.7	7.7 7.7	7.7	16.1 16.1	16.1	92.2 91.4	91.8	6.6 6.6	6.6	6.4	6.3 6.1	6.2		1.9 3.7	2.8	
				Middle	4	26.1 26.1	26.1	7.8 7.8	7.8	26.8 26.8	26.8	87.4 85.5	86.5	6.1 6.0	6.1		5.1 5.0	5.1	6.7	3.4 4.3	3.9	3.5
				Bottom	7	25.8 25.8	25.8	7.9 7.9	7.9	30.0 30.0	30.0	83.4 82.5	83.0	5.7 5.7	5.7	5.7	8.5 8.8	8.7		4.4 3.3	3.9	
27-Jul-15	Sunny	Calm	09:21	Surface	1	28.9 28.9	28.9	8.1 8.1	8.1	20.7 20.9	20.8	103.7 102.7	103.2	7.5 7.5	7.5	7.1	5.0 4.5	4.8		2.1 1.9	2.0	
				Middle	4	28.7 28.7	28.7	8.1 7.9	8.0	25.8 26.0	25.9	92.7 91.8	92.3	6.6 6.5	6.6		10.4 10.2	10.3	10.0	1.6 3.0	2.3	2.3
				Bottom	7	27.5 27.6	27.6	7.9 7.9	7.9	30.7 30.1	30.4	90.1 89.7	89.9	6.3 6.3	6.3	6.3	15.4 14.6	15.0		3.0 2.3	2.7	
29-Jul-15	Sunny	Moderate	10:02	Surface	1	28.5 28.5	28.5	8.0 8.2	8.1	21.1 23.7	22.4	99.9 98.0	99.0	6.9 6.7	6.8	6.9	5.6 5.3	5.5		3.1 10.3	6.7	
				Middle	3	28.3 28.4	28.4	8.2 8.0	8.1	23.5 21.3	22.4	103.4 97.9	100.7	7.1 6.8	7.0		6.1 7.5	6.8	7.2	3.9 4.1	4.0	4.8
				Bottom	5	28.5 28.4	28.5	8.1 8.1	8.1	30.2 29.4	29.8	99.4 102.8	101.1	6.5 6.8	6.7	6.7	9.2 9.3	9.3		3.1 4.1	3.6	
31-Jul-15	Sunny	Moderate	11:47	Surface	1	28.4 28.4	28.4	8.0 8.0	8.0	20.1 20.8	20.5	85.6 84.5	85.1	6.0 5.9	6.0	5.9	8.5 10.6	9.6		33.3 36.7	35.0	
				Middle	3.5	27.5 27.6	27.6	8.0 8.0	8.0	23.0 22.7	22.9	82.0 82.1	82.1	5.7 5.7	5.7		17.7 14.3	16.0	15.6	39.7 23.0	31.4	40.2
				Bottom	6	27.2 27.3	27.3	8.0 8.0	8.0	23.7 23.6	23.7	77.4 78.0	77.7	5.4 5.4	5.4	5.4	20.9 21.6	21.3		62.0 46.3	54.2	

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

Water Quality Monitoring Results at CS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^{o}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-Jul-15	Fine	Moderate	18:37	Surface	1	29.1 29.1	29.1	8.0 8.0	8.0	17.7 17.7	17.7	94.4 94.9	94.7	6.6 6.6	6.6	6.3	5.9 5.3	5.6	6.6	5.6 5.4	5.5	4.9
				Middle	4	28.5 28.7	28.6	8.0 7.9	8.0	19.4 18.7	19.1	84.1 84.0	84.1	5.9 5.9	5.9		5.7 6.1	5.9		5.3 4.3	4.8	
				Bottom	7	25.6 25.6	25.6	7.8 7.8	7.8	29.1 29.1	29.1	73.2 71.4	72.3	5.1 5.0	5.1	5.1	8.8 7.8	8.3		5.0 3.8	4.4	
4-Jul-15	Sunny	Moderate	07:03	Surface	1	27.9 27.9	27.9	7.8 7.8	7.8	22.8 22.8	22.8	87.4 86.5	87.0	6.0 6.0	6.0	5.7	4.8 4.8	4.8	7.9	8.1 10.3	9.2	9.0
				Middle	4	25.8 25.8	25.8	7.7 7.7	7.7	29.1 29.1	29.1	78.4 76.9	77.7	5.4 5.3	5.4		7.2 7.5	7.4		12.9 8.9	10.9	
				Bottom	7	25.6 25.6	25.6	7.7 7.7	7.7	29.9 29.9	29.9	76.2 75.8	76.0	5.3 5.2	5.3	5.3	11.7 11.5	11.6		7.5 6.3	6.9	
6-Jul-15	Sunny	Moderate	08:56	Surface	1	28.3 28.4	28.4	7.7 7.7	7.7	21.6 21.5	21.6	99.0 98.4	98.7	6.8 6.8	6.8	6.5	5.9 6.0	6.0	8.6	2.7 3.9	3.3	4.1
				Middle	4	27.5 27.6	27.6	7.7 7.7	7.7	24.0 23.2	23.6	90.1 87.9	89.0	6.2 6.1	6.2		9.0 9.5	9.3		4.5 3.3	3.9	
				Bottom	7	24.9 24.9	24.9	7.7 7.7	7.7	27.1 27.1	27.1	77.0 75.8	76.4	5.5 5.4	5.5	5.5	10.4 10.8	10.6		7.8 2.4	5.1	
8-Jul-15	Sunny	Moderate	10:02	Surface	1	29.7 29.7	29.7	7.9 7.9	7.9	22.6 22.5	22.6	108.7 108.1	108.4	7.3 7.3	7.3	6.9	8.6 8.7	8.7	10.9	3.9 3.8	3.9	4.5
				Middle	4	28.8 28.9	28.9	7.9 7.9	7.9	24.6 23.9	24.3	95.8 95.2	95.5	6.5 6.4	6.5		8.7 9.1	8.9		4.9 3.6	4.3	
				Bottom	7	26.1 26.1	26.1	7.8 7.8	7.8	33.8 33.8	33.8	83.9 82.6	83.3	5.6 5.5	5.6	5.6	14.9 15.2	15.1		6.0 4.4	5.2	
10-Jul-15	Sunny	Moderate	12:51	Surface	1	25.9 25.9	25.9	7.7 7.7	7.7	18.8 18.8	18.8	90.7 87.8	89.3	6.6 6.4	6.5	6.3	3.5 3.9	3.7	5.6	8.6 8.3	8.5	7.7
				Middle	4	25.3 25.2	25.3	7.7 7.7	7.7	19.8 19.9	19.9	83.0 81.1	82.1	6.1 6.0	6.1		5.0 5.3	5.2		7.3 8.6	8.0	
				Bottom	7	24.8 24.8	24.8	7.7 7.7	7.7	28.1 28.2	28.2	77.0 74.9	76.0	5.4 5.3	5.4	5.4	7.8 7.9	7.9		7.1 5.8	6.5	
13-Jul-15	Sunny	Moderate	16:54	Surface	1	28.4 28.3	28.4	7.8 7.8	7.8	21.3 20.8	21.1	76.6 76.9	76.8	5.8 5.8	5.8	5.6	5.2 5.3	5.3	7.8	7.6 7.2	7.4	9.9
				Middle	4	27.5 27.5	27.5	7.8 7.8	7.8	23.9 23.1	23.5	70.6 69.9	70.3	5.4 5.4	5.4		8.4 8.8	8.6		9.7 12.2	11.0	
				Bottom	7	26.7 26.7	26.7	7.8 7.8	7.8	26.9 26.8	26.9	63.4 62.8	63.1	4.9 4.8	4.9	4.9	9.5 9.3	9.4		11.6 11.1	11.4	
15-Jul-15	Fine	Moderate	18:11	Surface	1	25.9 26.3	26.1	8.0 8.3	8.2	28.5 27.8	28.2	99.8 98.5	99.2	6.9 6.8	6.9	6.2	5.3 5.8	5.6	9.8	6.5 5.2	5.9	4.8
				Middle	4	25.9 26.4	26.2	8.1 8.1	8.1	28.0 29.1	28.6	77.0 81.7	79.4	5.3 5.6	5.5		9.5 9.4	9.5		4.6 4.2	4.4	
				Bottom	7	26.1 26.1	26.1	8.2 8.1	8.2	28.7 28.2	28.5	78.4 82.2	80.3	5.4 5.7	5.6	5.6	14.4 14.1	14.3		4.1 4.1	4.1	
17-Jul-15	Sunny	Moderate	19:01	Surface	1	27.6 27.5	27.6	7.9 7.9	7.9	30.4 30.5	30.5	86.3 86.4	86.4	6.2 6.2	6.2	5.9	6.2 5.0	5.6	8.9	6.2 6.8	6.5	7.9
				Middle	4	26.6 26.6	26.6	7.9 7.9	7.9	32.4 32.5	32.5	78.9 78.1	78.5	5.6 5.5	5.6		9.3 9.6	9.5		7.4 9.8	8.6	
				Bottom	7	26.2 26.2	26.2	7.9 7.9	7.9	33.6 33.6	33.6	74.6 74.3	74.5	5.3 5.3	5.3	5.3	11.1 11.9	11.5		8.8 8.5	8.7	

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

Water Quality Monitoring Results at CS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^{o}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*
20-Jul-15	Cloudy	Moderate	07:58	Surface	1	28.1 28.2	28.2	8.0 8.0	8.0	27.3 27.4	27.4	100.8 101.3	101.1	6.8 6.8	6.8	6.7	4.8 5.1	5.0	6.8	4.0 5.6	4.8	4.3
				Middle	3	27.8 27.8	27.8	8.0 8.0	8.0	27.5 27.6	27.6	96.0 95.7	95.9	6.5 6.5	6.5		7.0 6.8	6.9		6.5 2.6	4.6	
				Bottom	5	27.5 27.5	27.5	8.0 8.0	8.0	29.4 29.1	29.3	90.8 90.9	90.9	6.1 6.1	6.1	6.1	8.6 8.1	8.4		2.7 4.5	3.6	
22-Jul-15	Sunny	Moderate	08:48	Surface	1	27.8 27.8	27.8	7.7 7.7	7.7	14.5 14.6	14.6	72.6 73.2	72.9	5.3 5.3	5.3	5.4	5.6 5.8	5.7	5.8	3.4 4.0	3.7	4.6
				Middle	4	27.5 27.5	27.5	7.7 7.7	7.7	17.2 17.2	17.2	75.8 76.6	76.2	5.4 5.5	5.5		5.6 5.7	5.7		5.9 5.0	5.5	
				Bottom	7	26.7 26.9	26.8	7.8 7.8	7.8	21.1 21.1	21.1	70.4 71.7	71.1	5.0 5.1	5.1	5.1	5.7 6.2	6.0		4.7 4.4	4.6	
24-Jul-15	Sunny	Moderate	10:50	Surface	1	27.7 27.7	27.7	7.9 7.9	7.9	15.9 15.8	15.9	86.8 87.0	86.9	6.3 6.3	6.3	5.8	6.9 7.0	7.0	8.8	4.2 3.7	4.0	3.6
				Middle	4	26.5 26.5	26.5	8.0 8.0	8.0	22.1 22.2	22.2	73.9 73.7	73.8	5.3 5.2	5.3		8.7 8.6	8.7		4.3 3.8	4.1	
				Bottom	7	26.1 26.1	26.1	8.0 8.0	8.0	24.1 24.1	24.1	68.4 67.8	68.1	4.8 4.8	4.8	4.8	10.1 11.2	10.7		2.4 3.0	2.7	
27-Jul-15	Sunny	Calm	15:37	Surface	1	28.2 28.2	28.2	8.1 8.1	8.1	20.1 20.3	20.2	104.4 104.5	104.5	7.7 7.7	7.7	7.4	4.9 5.0	5.0	9.2	1.9 4.3	3.1	3.0
				Middle	4	27.2 27.2	27.2	8.1 8.0	8.1	24.9 25.1	25.0	97.0 96.2	96.6	7.1 7.0	7.1		9.3 9.6	9.5		3.2 2.7	3.0	
				Bottom	7	26.8 26.8	26.8	8.0 7.9	8.0	29.5 29.0	29.3	92.7 92.4	92.6	6.6 6.6	6.6	6.6	13.1 12.9	13.0		4.5 1.0	2.8	
29-Jul-15	Fine	Moderate	17:12	Surface	1	28.3 28.4	28.4	8.3 7.9	8.1	22.8 22.3	22.6	94.8 102.5	98.7	6.5 7.0	6.8	6.9	4.8 4.9	4.9	6.6	4.9 4.4	4.7	8.1
				Middle	3	28.6 28.3	28.5	7.9 8.0	8.0	22.9 22.4	22.7	99.3 101.3	100.3	6.8 7.0	6.9		6.8 6.2	6.5		6.8 4.2	5.5	
				Bottom	5	28.5 28.4	28.5	8.2 8.1	8.2	31.9 31.9	31.9	106.7 102.2	104.5	6.9 6.7	6.8	6.8	9.1 7.9	8.5		5.8 22.1	14.0	
31-Jul-15	Fine	Moderate	18:15	Surface	1	28.3 28.3	28.3	8.0 8.0	8.0	21.9 19.7	20.8	87.3 86.4	86.9	6.0 6.0	6.0	6.0	12.3 12.7	12.5	15.5	43.0 32.3	37.7	35.6
				Middle	3.5	27.7 27.6	27.7	8.0 8.0	8.0	22.9 23.5	23.2	86.5 86.3	86.4	6.0 6.0	6.0		12.5 14.5	13.5		37.3 27.3	32.3	
				Bottom	6	27.2 27.2	27.2	8.0 8.0	8.0	23.8 23.8	23.8	78.2 79.2	78.7	5.4 5.5	5.5	5.5	19.8 21.2	20.5		38.0 35.3	36.7	

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

Water Quality Monitoring Results at IS1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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-Jul-15	Sunny	Moderate	13:28	Surface	1	29.5 29.5	29.5	7.9 7.9	7.9	18.3 18.2	18.3	93.6 94.0	93.8	6.5 6.5	6.5	6.1	4.3 4.4	4.4	7.8	7.2 7.7	7.5	7.0
				Middle	5	28.2 28.3	28.3	7.9 7.9	7.9	21.1 20.9	21.0	81.2 80.7	81.0	5.6 5.6	5.6		6.5 6.7	6.6		8.5 6.2	7.4	
				Bottom	9	26.2 26.2	26.2	7.7 7.7	7.7	28.4 28.4	28.4	76.9 76.3	76.6	5.3 5.3	5.3	5.3	12.3 12.5	12.4		7.3 4.8	6.1	
4-Jul-15	Sunny	Moderate	14:11	Surface	1	28.2 28.2	28.2	7.8 7.8	7.8	23.1 23.1	23.1	90.1 89.6	89.9	6.2 6.2	6.2	5.6	6.9 6.8	6.9	8.7	5.5 6.1	5.8	8.2
				Middle	5	26.8 26.8	26.8	7.8 7.8	7.8	26.7 26.7	26.7	72.7 72.2	72.5	5.0 5.0	5.0		6.7 6.8	6.8		7.3 11.5	9.4	
				Bottom	9	25.7 25.7	25.7	7.7 7.7	7.7	29.6 29.6	29.6	72.8 72.3	72.6	5.0 5.0	5.0	5.0	12.1 12.5	12.3		7.9 10.7	9.3	
6-Jul-15	Sunny	Moderate	16:03	Surface	1	27.7 27.7	27.7	7.9 7.9	7.9	22.0 22.2	22.1	93.0 94.0	93.5	6.5 6.5	6.5	5.9	7.6 7.1	7.4	12.0	2.5 5.3	3.9	4.7
				Middle	5	26.8 26.9	26.9	7.9 7.9	7.9	25.1 24.8	25.0	75.3 77.3	76.3	5.2 5.4	5.3		14.6 14.6	14.6		4.3 3.2	3.8	
				Bottom	9	24.4 24.4	24.4	7.7 7.7	7.7	29.4 29.4	29.4	76.9 77.6	77.3	5.4 5.5	5.5	5.5	14.0 13.9	14.0		5.5 7.0	6.3	
8-Jul-15	Sunny	Moderate	17:10	Surface	1	29.0 29.0	29.0	8.1 8.1	8.1	22.9 23.1	23.0	102.7 103.7	103.2	7.0 7.0	7.0	6.6	10.0 9.6	9.8	12.0	1.0 2.8	1.9	3.1
				Middle	5	28.1 28.1	28.1	8.1 8.1	8.1	25.5 25.2	25.4	90.8 91.5	91.2	6.2 6.2	6.2		10.9 10.9	10.9		1.3 4.7	3.0	
				Bottom	9	25.6 25.6	25.6	7.9 7.9	7.9	34.9 34.9	34.9	75.6 74.7	75.2	5.1 5.0	5.1	5.1	15.2 15.1	15.2		6.4 2.4	4.4	
10-Jul-15	Sunny	Moderate	08:57	Surface	1	25.4 25.4	25.4	7.8 7.8	7.8	18.5 18.6	18.6	77.6 77.4	77.5	5.7 5.7	5.7	5.4	6.3 5.9	6.1	12.6	4.7 5.0	4.9	6.4
				Middle	5	24.4 24.4	24.4	7.8 7.8	7.8	22.8 22.8	22.8	69.6 69.3	69.5	5.1 5.1	5.1		15.3 15.7	15.5		8.0 6.3	7.2	
				Bottom	9	24.4 24.4	24.4	7.8 7.8	7.8	29.9 29.9	29.9	69.8 69.8	69.8	4.9 4.9	4.9	4.9	15.7 16.4	16.1		9.7 4.2	7.0	
13-Jul-15	Sunny	Moderate	11:23	Surface	1	29.1 29.1	29.1	8.0 8.0	8.0	21.3 21.3	21.3	79.2 79.1	79.2	5.9 5.9	5.9	5.8	2.1 2.0	2.1	3.7	2.6 3.6	3.1	3.2
				Middle	5	28.4 28.4	28.4	8.0 7.9	8.0	22.8 22.8	22.8	75.7 75.3	75.5	5.7 5.7	5.7		3.0 2.8	2.9		3.8 2.9	3.4	
				Bottom	9	26.2 26.2	26.2	7.9 7.9	7.9	29.8 29.9	29.9	66.8 65.4	66.1	5.1 5.0	5.1	5.1	5.4 6.6	6.0		2.0 3.9	3.0	
15-Jul-15	Sunny	Moderate	12:35	Surface	1	25.9 26.2	26.1	8.3 8.3	8.3	29.4 29.4	29.4	100.0 100.0	100.0	6.9 6.9	6.9	6.4	1.9 2.0	2.0	9.1	5.5 5.1	5.3	5.8
				Middle	5	25.7 25.6	25.7	8.2 8.1	8.2	30.1 29.5	29.8	85.6 81.6	83.6	5.9 5.6	5.8		12.4 12.2	12.3		6.2 4.6	5.4	
				Bottom	9	26.1 25.8	26.0	8.3 8.0	8.2	28.8 29.0	28.9	77.0 82.5	79.8	5.3 5.7	5.5	5.5	12.8 12.9	12.9		8.9 4.6	6.8	
17-Jul-15	Sunny	Moderate	13:42	Surface	1	27.9 27.9	27.9	7.9 7.9	7.9	27.7 27.7	27.7	83.0 82.4	82.7	5.9 5.8	5.9	5.6	8.1 8.3	8.2	10.1	7.9 7.3	7.6	7.0
				Middle	5	26.9 26.9	26.9	7.9 7.9	7.9	32.9 32.9	32.9	74.2 73.3	73.8	5.2 5.2	5.2		9.1 9.4	9.3		6.8 5.5	6.2	
				Bottom	9	26.5 26.5	26.5	7.9 7.9	7.9	34.1 34.1	34.1	71.5 71.0	71.3	5.0 5.0	5.0	5.0	12.5 13.1	12.8		6.0 8.2	7.1	

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 (^oC) Value	Temperature (^oC) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
20-Jul-15	Cloudy	Moderate	15:19	Surface	1	28.1 28.1	28.1	7.9 7.9	7.9	27.5 27.5	27.5	99.5 99.3	99.4	6.7 6.7	6.7	6.6	4.2 4.0	4.1	7.1	11.2 11.7	11.5	11.1
				Middle	5	27.7 27.7	27.7	8.0 8.0	8.0	28.1 28.1	28.1	94.1 94.5	94.3	6.3 6.4	6.4		8.5 8.2	8.4		11.0 11.0	11.0	
				Bottom	9	27.6 27.6	27.6	8.0 8.0	8.0	29.6 29.6	29.6	83.0 83.8	83.4	5.6 5.6	5.6	5.6	8.6 8.9	8.8		10.7 10.7	10.7	
22-Jul-15	Sunny	Moderate	16:26	Surface	1	26.6 26.6	26.6	8.0 8.0	8.0	22.7 22.4	22.6	72.1 73.4	72.8	5.1 5.2	5.2	5.2	7.4 7.7	7.6	10.4	6.3 7.7	7.0	7.1
				Middle	5	26.3 26.3	26.3	8.0 8.0	8.0	24.3 24.5	24.4	73.3 73.8	73.6	5.2 5.2	5.2		10.7 10.3	10.5		6.3 9.5	7.9	
				Bottom	9	25.7 25.7	25.7	8.1 8.1	8.1	27.2 27.3	27.3	69.6 68.8	69.2	4.9 4.8	4.9	4.9	12.0 13.9	13.0		7.2 5.4	6.3	
24-Jul-15	Fine	Moderate	18:07	Surface	1	28.0 28.0	28.0	7.8 7.8	7.8	16.0 16.0	16.0	75.2 74.1	74.7	5.9 5.8	5.9	5.6	6.1 6.0	6.1	7.4	3.3 3.6	3.5	3.8
				Middle	5	26.8 26.8	26.8	7.9 7.9	7.9	27.8 26.9	27.4	70.1 69.3	69.7	5.3 5.3	5.3		6.7 7.1	6.9		3.4 3.1	3.3	
				Bottom	9	26.8 26.8	26.8	7.9 7.9	7.9	28.1 28.1	28.1	71.6 71.1	71.4	5.4 5.4	5.4	5.4	9.1 9.2	9.2		5.3 3.9	4.6	
27-Jul-15	Sunny	Calm	10:27	Surface	1	28.7 28.8	28.8	8.1 8.1	8.1	20.3 20.6	20.5	99.6 100.5	100.1	7.3 7.3	7.3	7.0	7.4 7.6	7.5	9.4	2.0 3.3	2.7	2.6
				Middle	5	28.7 28.7	28.7	8.1 8.1	8.1	24.4 24.1	24.3	90.5 95.4	93.0	6.5 6.8	6.7		8.4 8.7	8.6		1.8 2.7	2.3	
				Bottom	9	28.3 28.3	28.3	8.1 8.1	8.1	28.7 28.3	28.5	88.2 91.9	90.1	6.2 6.5	6.4	6.4	11.8 12.4	12.1		3.7 1.7	2.7	
29-Jul-15	Sunny	Moderate	10:50	Surface	1	28.4 28.4	28.4	7.9 8.3	8.1	23.5 21.7	22.6	99.1 96.1	97.6	6.8 6.6	6.7	6.7	4.3 4.2	4.3	7.2	5.3 4.4	4.9	5.1
				Middle	5	28.5 28.5	28.5	7.9 8.0	8.0	22.4 23.5	23.0	95.2 98.7	97.0	6.5 6.7	6.6		7.6 8.1	7.9		5.7 3.6	4.7	
				Bottom	9	28.4 28.4	28.4	8.3 8.1	8.2	30.2 32.0	31.1	100.4 102.9	101.7	6.6 6.7	6.7	6.7	9.3 9.4	9.4		7.1 4.4	5.8	
31-Jul-15	Sunny	Moderate	12:54	Surface	1	28.5 28.5	28.5	8.0 8.0	8.0	21.9 21.9	21.9	82.8 82.5	82.7	5.7 5.7	5.7	5.6	12.0 11.8	11.9	16.5	41.0 36.7	38.9	46.9
				Middle	4.5	26.2 26.2	26.2	8.0 8.0	8.0	26.0 26.0	26.0	76.7 75.9	76.3	5.4 5.3	5.4		14.8 15.7	15.3		42.0 34.3	38.2	
				Bottom	8	26.1 26.1	26.1	8.0 8.0	8.0	26.2 26.1	26.2	69.9 71.1	70.5	4.9 5.0	5.0	5.0	22.9 21.6	22.3		63.0 64.3	63.7	

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

Water Quality Monitoring Results at IS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC) Value	Temperature (^oC) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
2-Jul-15	Fine	Moderate	19:36	Surface	1	28.8 28.8	28.8	8.0 8.0	8.0	18.3 18.5	18.4	89.8 90.7	90.3	6.3 6.3	6.3	5.9	6.3 5.9	6.1	8.3	6.5 4.0	5.3	5.3
				Middle	5	27.9 28.0	28.0	8.0 8.0	8.0	20.9 20.6	20.8	78.2 78.9	78.6	5.5 5.5	5.5		7.2 7.2	7.2		3.2 4.5	3.9	
				Bottom	9	25.4 25.4	25.4	7.8 7.8	7.8	30.3 30.4	30.4	70.5 69.6	70.1	4.9 4.8	4.9	4.9	11.5 11.4	11.5		5.0 8.3	6.7	
4-Jul-15	Sunny	Moderate	08:12	Surface	1	28.5 28.5	28.5	7.8 7.8	7.8	21.6 21.5	21.6	94.2 94.2	94.2	6.5 6.5	6.5	5.9	4.1 3.5	3.8	8.3	25.5 20.8	23.2	20.3
				Middle	4.5	25.0 24.9	25.0	7.7 7.7	7.7	31.7 31.9	31.8	75.4 74.8	75.1	5.2 5.2	5.2		6.6 6.1	6.4		17.0 19.7	18.4	
				Bottom	8	24.5 24.5	24.5	7.7 7.7	7.7	32.7 32.7	32.7	72.9 72.6	72.8	5.1 5.0	5.1	5.1	14.6 14.8	14.7		21.3 17.0	19.2	
6-Jul-15	Sunny	Moderate	10:04	Surface	1	28.3 28.4	28.4	7.8 7.8	7.8	22.0 21.8	21.9	97.0 97.2	97.1	6.7 6.7	6.7	6.2	5.2 5.3	5.3	10.3	5.3 4.0	4.7	4.2
				Middle	5	27.2 27.2	27.2	7.8 7.8	7.8	25.3 25.1	25.2	81.8 82.4	82.1	5.6 5.7	5.7		12.6 13.0	12.8		3.4 3.3	3.4	
				Bottom	9	25.1 25.1	25.1	7.7 7.7	7.7	29.0 29.1	29.1	79.8 80.8	80.3	5.6 5.7	5.7	5.7	11.8 14.0	12.9		4.0 4.9	4.5	
8-Jul-15	Sunny	Moderate	10:44	Surface	1	29.6 29.7	29.7	8.0 8.0	8.0	22.9 22.8	22.9	106.8 107.1	107.0	7.2 7.2	7.2	6.8	8.0 8.1	8.1	11.5	4.2 3.1	3.7	3.8
				Middle	5	28.4 28.5	28.5	8.0 8.0	8.0	25.7 25.5	25.6	94.0 93.4	93.7	6.3 6.3	6.3		10.2 10.4	10.3		5.6 2.0	3.8	
				Bottom	9	26.3 26.3	26.3	7.8 7.8	7.8	33.0 33.0	33.0	83.6 83.0	83.3	5.6 5.6	5.6	5.6	16.0 16.2	16.1		3.0 4.5	3.8	
10-Jul-15	Sunny	Moderate	13:43	Surface	1	26.0 26.0	26.0	7.8 7.8	7.8	18.8 18.8	18.8	76.0 76.4	76.2	5.6 5.6	5.6	5.6	4.3 4.5	4.4	6.0	5.0 6.5	5.8	5.8
				Middle	5	25.5 25.5	25.5	7.8 7.8	7.8	19.5 19.5	19.5	74.2 74.5	74.4	5.4 5.5	5.5		5.3 5.3	5.3		3.7 4.8	4.3	
				Bottom	9	25.1 25.1	25.1	7.8 7.8	7.8	28.0 28.1	28.1	76.6 76.7	76.7	5.4 5.4	5.4	5.4	8.0 8.3	8.2		7.1 7.4	7.3	
13-Jul-15	Sunny	Moderate	17:50	Surface	1	29.9 29.8	29.9	8.1 8.1	8.1	19.7 19.7	19.7	84.8 85.1	85.0	6.3 6.3	6.3	5.9	3.4 3.3	3.4	5.9	2.3 3.1	2.7	5.0
				Middle	4.5	28.1 28.1	28.1	7.9 7.9	7.9	23.1 23.2	23.2	70.8 69.5	70.2	5.4 5.3	5.4		4.6 5.0	4.8		6.0 5.5	5.8	
				Bottom	8	27.1 27.0	27.1	7.9 7.9	7.9	26.8 26.9	26.9	66.2 65.5	65.9	5.0 5.0	5.0	5.0	9.4 9.6	9.5		4.0 9.0	6.5	
15-Jul-15	Fine	Moderate	19:16	Surface	1	25.6 25.8	25.7	8.0 8.2	8.1	28.0 28.9	28.5	93.7 90.2	92.0	6.5 6.2	6.4	6.0	2.9 2.9	2.9	7.3	9.9 6.7	8.3	6.4
				Middle	5	26.1 25.8	26.0	8.3 8.0	8.2	28.6 30.1	29.4	82.7 79.2	81.0	5.7 5.4	5.6		6.9 6.8	6.9		3.0 2.6	2.8	
				Bottom	9	26.0 26.3	26.2	8.3 8.1	8.2	28.3 27.9	28.1	85.1 83.5	84.3	5.9 5.8	5.9	5.9	12.0 12.2	12.1		4.7 11.3	8.0	
17-Jul-15	Sunny	Moderate	20:02	Surface	1	27.4 27.4	27.4	7.9 7.9	7.9	31.3 31.3	31.3	83.3 83.5	83.4	5.9 6.0	6.0	5.9	7.6 7.5	7.6	12.0	7.5 7.0	7.3	7.5
				Middle	5.5	26.7 26.6	26.7	7.9 7.9	7.9	32.2 32.3	32.3	80.4 79.2	79.8	5.7 5.6	5.7		12.9 13.4	13.2		7.8 5.7	6.8	
				Bottom	10	26.0 26.0	26.0	7.9 7.9	7.9	34.0 34.0	34.0	74.8 74.4	74.6	5.3 5.3	5.3	5.3	14.9 15.2	15.1		7.9 8.6	8.3	

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

Water Quality Monitoring Results at IS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	08:49	Surface	1	28.1 28.1	28.1	8.1 8.0	8.1	27.5 27.5	27.5	101.0 102.1	101.6	6.8 6.9	6.9	6.6	5.0 4.7	4.9	7.1	16.5 9.8	13.2	9.7
				Middle	5	27.8 27.8	27.8	8.0 7.9	8.0	28.7 28.8	28.8	93.8 93.2	93.5	6.3 6.2	6.3		7.0 7.6	7.3		6.2 7.3	6.8	
				Bottom	9	27.5 27.5	27.5	7.9 8.0	8.0	28.8 28.9	28.9	78.6 78.9	78.8	5.3 5.3	5.3	5.3	9.5 8.5	9.0		8.4 10.0	9.2	
22-Jul-15	Sunny	Moderate	09:56	Surface	1	27.2 27.3	27.3	7.6 7.6	7.6	14.5 14.4	14.5	75.3 75.0	75.2	5.5 5.5	5.5	5.4	5.6 6.1	5.9	8.3	4.0 5.7	4.9	5.1
				Middle	5.5	26.4 26.3	26.4	7.6 7.6	7.6	20.3 20.4	20.4	72.8 72.7	72.8	5.2 5.2	5.2		8.5 8.1	8.3		5.8 4.8	5.3	
				Bottom	10	26.1 26.1	26.1	7.6 7.6	7.6	20.9 20.8	20.9	71.9 72.2	72.1	5.2 5.2	5.2	5.2	10.8 10.4	10.6		5.8 4.6	5.2	
24-Jul-15	Sunny	Moderate	11:54	Surface	1	27.6 27.6	27.6	7.8 7.8	7.8	16.4 16.1	16.3	74.2 72.4	73.3	6.2 6.2	6.2	6.3	7.9 8.0	8.0	8.9	4.7 2.8	3.8	4.4
				Middle	5	26.5 26.5	26.5	8.0 8.0	8.0	27.2 27.3	27.3	70.6 69.6	70.1	6.3 6.3	6.3		7.7 7.7	7.7		5.4 3.4	4.4	
				Bottom	9	26.4 26.4	26.4	8.0 8.0	8.0	28.5 27.0	27.8	67.8 67.3	67.6	5.8 5.7	5.8	5.8	10.6 11.2	10.9		3.9 6.1	5.0	
27-Jul-15	Sunny	Calm	16:42	Surface	1	28.1 28.1	28.1	8.1 8.1	8.1	19.9 20.2	20.1	101.4 101.6	101.5	7.5 7.5	7.5	7.4	7.6 7.5	7.6	10.6	3.7 1.3	2.5	2.2
				Middle	5	27.3 27.2	27.3	8.0 8.1	8.1	23.8 23.6	23.7	98.5 97.3	97.9	7.2 7.2	7.2		10.9 11.2	11.1		1.9 0.8	1.4	
				Bottom	9	26.6 26.6	26.6	8.0 8.0	8.0	27.9 27.6	27.8	92.9 92.5	92.7	6.7 6.7	6.7	6.7	12.9 13.3	13.1		1.5 4.0	2.8	
29-Jul-15	Fine	Moderate	18:02	Surface	1	28.4 28.4	28.4	8.0 7.9	8.0	23.8 24.0	23.9	101.8 101.0	101.4	6.9 6.9	6.9	6.9	3.7 4.4	4.1	6.6	7.5 6.3	6.9	5.5
				Middle	5	28.3 28.4	28.4	8.3 8.1	8.2	24.0 22.7	23.4	98.0 100.4	99.2	6.7 6.9	6.8		7.4 7.4	7.4		7.2 4.5	5.9	
				Bottom	9	28.4 28.4	28.4	8.0 8.0	8.0	29.8 29.9	29.9	106.4 104.7	105.6	7.0 6.9	7.0	7.0	7.6 8.8	8.2		2.7 4.9	3.8	
31-Jul-15	Fine	Moderate	19:20	Surface	1	28.1 28.2	28.2	8.0 8.0	8.0	21.6 21.6	21.6	80.6 79.4	80.0	5.6 5.5	5.6	5.4	17.6 17.4	17.5	19.0	43.7 35.3	39.5	39.8
				Middle	4.5	27.6 27.6	27.6	8.0 8.0	8.0	23.4 21.7	22.6	75.1 74.0	74.6	5.2 5.2	5.2		19.3 19.5	19.4		29.7 36.3	33.0	
				Bottom	8	27.1 27.1	27.1	8.0 8.0	8.0	23.7 23.7	23.7	71.3 70.4	70.9	5.0 4.9	5.0	5.0	20.3 19.6	20.0		39.3 54.3	46.8	

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

Water Quality Monitoring Results at IS2 - Mid-Ebb Tide IS2

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-Jul-15	Sunny	Moderate	13:42	Surface	1	29.5 29.5	29.5	8.0 8.0	8.0	17.1 17.1	17.1	97.0 96.7	96.9	6.7 6.7	6.7	5.6	4.6 4.9	4.8	8.0	2.9 3.8	3.4	3.9
				Middle	3	27.8 27.8	27.8	7.8 7.8	7.8	22.1 20.5	21.3	63.3 63.1	63.2	4.4 4.4	4.4		7.3 7.2	7.3		3.0 3.0	3.0	
				Bottom	5	26.6 26.6	26.6	7.8 7.8	7.8	26.7 26.7	26.7	80.4 80.3	80.4	5.6 5.6	5.6	5.6	11.9 12.1	12.0		6.7 4.1	5.4	
4-Jul-15	Sunny	Moderate	14:23	Surface	1	28.1 28.2	28.2	7.8 7.8	7.8	23.5 23.4	23.5	81.0 80.6	80.8	5.6 5.5	5.6	5.5	7.9 8.3	8.1	9.1	9.3 15.5	12.4	8.9
				Middle	3	26.8 26.8	26.8	7.8 7.8	7.8	26.8 26.8	26.8	76.7 76.3	76.5	5.3 5.3	5.3		6.0 5.9	6.0		10.2 5.6	7.9	
				Bottom	5	25.5 25.6	25.6	7.7 7.7	7.7	30.1 30.1	30.1	75.2 74.3	74.8	5.2 5.1	5.2	5.2	13.3 13.1	13.2		7.9 5.0	6.5	
6-Jul-15	Sunny	Moderate	16:19	Surface	1	28.3 28.3	28.3	7.9 7.9	7.9	20.3 20.3	20.3	100.4 100.4	100.4	7.0 7.0	7.0	6.7	6.2 5.9	6.1	10.3	1.3 3.9	2.6	6.2
				Middle	3.5	27.8 27.8	27.8	7.8 7.9	7.9	22.4 22.6	22.5	92.3 90.9	91.6	6.4 6.3	6.4		11.0 11.2	11.1		5.2 9.5	7.4	
				Bottom	6	25.6 25.6	25.6	7.7 7.7	7.7	27.4 27.6	27.5	74.2 73.1	73.7	5.2 5.1	5.2	5.2	13.5 14.0	13.8		6.5 10.7	8.6	
8-Jul-15	Sunny	Moderate	17:34	Surface	1	29.6 29.6	29.6	8.1 8.1	8.1	21.5 21.5	21.5	110.3 110.3	110.3	7.5 7.5	7.5	7.3	8.9 8.6	8.8	11.1	2.9 3.0	3.0	4.0
				Middle	3.5	29.1 29.1	29.1	8.0 8.1	8.1	22.4 22.6	22.5	102.6 102.7	102.7	7.0 7.0	7.0		9.5 9.7	9.6		4.5 3.2	3.9	
				Bottom	6	26.8 26.8	26.8	7.9 7.9	7.9	30.0 30.1	30.1	83.2 83.6	83.4	5.6 5.7	5.7	5.7	14.8 15.2	15.0		4.0 6.0	5.0	
10-Jul-15	Sunny	Moderate	09:10	Surface	1	25.5 25.5	25.5	7.8 7.8	7.8	18.1 18.1	18.1	79.3 79.3	79.3	5.9 5.9	5.9	5.8	5.3 5.4	5.4	6.7	8.0 10.2	9.1	8.7
				Middle	3.5	24.5 24.5	24.5	7.8 7.8	7.8	22.2 22.1	22.2	76.7 74.4	75.6	5.6 5.5	5.6		6.9 6.4	6.7		6.3 9.0	7.7	
				Bottom	6	24.5 24.5	24.5	7.8 7.8	7.8	29.5 29.5	29.5	71.9 71.2	71.6	5.1 5.0	5.1	5.1	8.3 7.9	8.1		6.1 12.3	9.2	
13-Jul-15	Sunny	Moderate	11:37	Surface	1	29.1 29.1	29.1	8.1 8.1	8.1	19.3 19.2	19.3	63.7 64.0	63.9	5.4 5.4	5.4	5.4	2.4 2.6	2.5	3.9	4.5 7.5	6.0	6.8
				Middle	3	28.2 28.1	28.2	7.9 7.9	7.9	23.1 23.1	23.1	62.4 61.7	62.1	5.3 5.2	5.3		2.9 2.7	2.8		4.5 5.2	4.9	
				Bottom	5	27.5 27.5	27.5	7.9 7.9	7.9	25.1 25.0	25.1	59.3 59.1	59.2	5.1 5.1	5.1	5.1	6.6 6.4	6.5		11.0 7.8	9.4	
15-Jul-15	Sunny	Moderate	12:51	Surface	1	26.0 25.7	25.9	8.2 8.2	8.2	28.9 29.0	29.0	98.6 92.6	95.6	6.8 6.4	6.6	6.0	3.5 3.5	3.5	7.9	5.7 9.2	7.5	6.9
				Middle	3	26.1 26.1	26.1	8.3 8.2	8.3	29.5 30.3	29.9	79.8 78.0	78.9	5.5 5.3	5.4		7.4 7.5	7.5		5.0 7.5	6.3	
				Bottom	5	25.6 26.2	25.9	8.2 8.1	8.2	28.4 28.4	28.4	76.9 82.3	79.6	5.4 5.7	5.6	5.6	11.7 13.7	12.7		6.8 7.1	7.0	
17-Jul-15	Sunny	Moderate	13:56	Surface	1	27.8 27.8	27.8	7.9 7.9	7.9	29.7 29.7	29.7	83.3 82.0	82.7	5.9 5.8	5.9	5.7	6.0 5.9	6.0	7.3	9.1 14.5	11.8	9.4
				Middle	3	27.1 27.1	27.1	7.9 7.9	7.9	31.8 31.8	31.8	78.2 77.7	78.0	5.5 5.5	5.5		6.0 6.1	6.1		6.6 6.8	6.7	
				Bottom	5	26.7 26.6	26.7	7.9 7.9	7.9	33.6 33.6	33.6	74.7 73.8	74.3	5.3 5.2	5.3	5.3	9.5 9.9	9.7		11.1 8.2	9.7	

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 IS2

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	15:33	Surface	1	28.1	28.1	7.9	7.9	27.5	27.5	100.3	100.6	6.7	6.8	6.7	4.6	4.6	6.9	9.0	9.2	10.6
						28.1		7.9		27.5		100.8		6.8			4.5			9.3		
				Middle	3.5	27.8	27.8	7.9	7.9	28.3	28.3	96.7	96.4	6.5	6.5		7.5	7.4		11.0	11.0	
						27.8		7.9		28.3		96.1		6.5			7.2			11.0		
				Bottom	6	27.7	27.7	7.9	7.9	29.8	29.9	86.9	86.1	5.8	5.8	5.8	8.5	8.8		12.2	11.7	
						27.7		7.9		29.9		85.3		5.7			9.0			11.2		
22-Jul-15	Sunny	Moderate	16:39	Surface	1	26.9	27.0	7.9	7.9	18.9	18.6	83.2	83.6	6.0	6.0	5.6	6.1	6.2	7.9	5.1	5.9	5.5
						27.0		7.9		18.3		84.0		6.0			6.3			6.7		
				Middle	3	26.1	26.1	8.0	8.0	25.3	25.4	72.7	72.6	5.1	5.1		8.8	8.8		5.9	5.7	
						26.0		8.0		25.4		72.5		5.1			8.7			5.5		
				Bottom	5	25.9	25.9	8.0	8.0	26.2	26.2	69.4	69.4	4.9	4.9	4.9	8.4	8.8		4.9	5.0	
						25.9		7.9		26.2		69.3		4.9			9.1			5.0		
24-Jul-15	Fine	Moderate	18:17	Surface	1	28.0	28.0	7.7	7.7	16.8	16.2	73.4	72.5	5.7	5.7	5.8	6.0	6.0	6.8	3.2	3.6	3.6
						27.9		7.7		15.6		71.6		5.7			6.0			3.9		
				Middle	3.5	27.6	27.6	7.9	7.9	21.6	21.8	75.1	75.5	5.8	5.8		4.7	4.7		3.1	3.4	
						27.6		7.9		21.9		75.8		5.8			4.6			3.6		
				Bottom	6	26.8	26.8	7.9	7.9	27.6	27.4	70.5	69.3	5.3	5.3	5.3	9.1	9.7		3.2	3.8	
						26.8		7.9		27.1		68.1		5.2			10.2			4.4		
27-Jul-15	Sunny	Calm	10:41	Surface	1	28.7	28.8	8.2	8.2	20.2	20.2	99.2	97.5	7.3	7.2	7.1	5.3	5.3	6.6	2.6	3.3	2.6
						28.8		8.2		20.2		95.7		7.0			5.2			4.0		
				Middle	3.5	28.6	28.6	8.1	8.1	22.3	22.3	94.9	94.5	6.9	6.9		5.3	5.4		2.6	2.4	
						28.6		8.1		22.3		94.1		6.8			5.4			2.1		
				Bottom	6	28.5	28.4	8.0	8.0	25.1	25.1	91.0	91.0	6.5	6.5	6.5	8.8	9.0		2.3	2.1	
						28.2		8.0		25.1		90.9		6.5			9.2			1.9		
29-Jul-15	Sunny	Moderate	11:03	Surface	1	28.3	28.3	8.1	8.1	23.6	22.7	98.2	98.2	6.7	6.8	6.9	5.5	5.8	7.7	4.5	5.0	6.4
						28.3		8.0		21.8		98.2		6.8			6.1			5.4		
				Middle	3.5	28.5	28.4	8.0	8.0	22.9	22.7	102.7	100.9	7.0	6.9		6.8	7.1		2.3	2.9	
						28.2		8.0		22.5		99.1		6.8			7.3			3.5		
				Bottom	6	28.4	28.5	8.2	8.1	31.4	30.4	100.9	102.3	6.6	6.7	6.7	10.2	10.1		4.1	11.2	
						28.5		8.0		29.3		103.6		6.8			9.9			18.2		
31-Jul-15	Sunny	Moderate	13:10	Surface	1	28.2	28.2	8.0	8.0	21.9	21.9	76.6	76.7	5.3	5.3	5.2	11.7	12.0	19.2	43.5	44.2	39.4
						28.2		8.0		21.9		76.8		5.3			12.2			44.8		
				Middle	3.5	27.4	27.4	8.0	8.0	21.7	22.5	71.8	71.8	5.0	5.0		21.0	21.6		34.7	35.2	
						27.4		8.0		23.3		71.8		5.0			22.2			35.7		
				Bottom	6	27.0	27.0	8.0	8.0	24.4	24.4	69.8	70.1	4.9	4.9	4.9	25.4	24.1		37.7	38.9	
						27.0		8.0		24.4		70.3		4.9			22.8			40.0		

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 (^oC)		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-Jul-15	Fine	Moderate	19:48	Surface	1	29.4 29.4	29.4	8.0 8.0	8.0	16.9 16.9	16.9	97.1 97.1	97.1	6.8 6.8	6.8	6.6	5.2 4.9	5.1	7.4	6.0 6.2	6.1	5.5
				Middle	3.5	28.9 28.9	28.9	8.0 8.0	8.0	17.8 18.0	17.9	89.7 89.8	89.8	6.3 6.3	6.3		5.8 6.0	5.9		5.5 4.9	5.2	
				Bottom	6	26.6 26.6	26.6	7.8 7.8	7.8	25.4 25.5	25.5	77.9 78.4	78.2	5.4 5.5	5.5	5.5	11.1 11.5	11.3		4.4 6.2	5.3	
4-Jul-15	Sunny	Moderate	08:22	Surface	1	27.9 27.9	27.9	7.8 7.8	7.8	22.8 22.8	22.8	86.0 86.0	86.0	5.9 5.9	5.9	5.5	8.9 8.1	8.5	11.7	17.8 13.2	15.5	16.7
				Middle	3	27.0 26.9	27.0	7.8 7.8	7.8	25.5 25.8	25.7	74.0 72.4	73.2	5.1 5.0	5.1		12.8 13.1	13.0		21.2 21.7	21.5	
				Bottom	5	25.3 25.3	25.3	7.7 7.7	7.7	30.7 30.8	30.8	73.3 72.6	73.0	5.1 5.0	5.1	5.1	13.9 13.3	13.6		14.2 11.7	13.0	
6-Jul-15	Sunny	Moderate	10:20	Surface	1	28.4 28.4	28.4	7.8 7.8	7.8	20.5 20.6	20.6	100.4 100.1	100.3	7.0 7.0	7.0	6.6	5.5 5.9	5.7	9.4	4.9 4.4	4.7	4.9
				Middle	3	26.7 26.7	26.7	7.7 7.7	7.7	23.5 23.7	23.6	88.3 88.8	88.6	6.2 6.2	6.2		11.8 10.6	11.2		4.0 6.1	5.1	
				Bottom	5	25.6 25.5	25.6	7.8 7.8	7.8	28.0 29.1	28.6	80.2 79.1	79.7	5.6 5.5	5.6	5.6	11.3 11.5	11.4		4.1 5.5	4.8	
8-Jul-15	Sunny	Moderate	10:55	Surface	1	29.7 29.7	29.7	8.0 8.0	8.0	21.7 21.7	21.7	110.1 109.8	110.0	7.4 7.4	7.4	6.3	8.3 8.6	8.5	11.7	3.7 2.4	3.1	3.6
				Middle	3	28.0 28.0	28.0	7.9 7.9	7.9	26.7 25.1	25.9	75.5 75.2	75.4	5.1 5.1	5.1		11.0 10.9	11.0		2.8 4.0	3.4	
				Bottom	5	26.8 26.8	26.8	7.8 7.8	7.8	31.3 31.3	31.3	75.4 75.2	75.3	5.1 5.1	5.1	5.1	15.6 15.8	15.7		3.5 5.2	4.4	
10-Jul-15	Sunny	Moderate	13:58	Surface	1	26.0 26.0	26.0	7.8 7.8	7.8	18.8 18.8	18.8	76.7 76.7	76.7	5.6 5.6	5.6	5.5	4.4 4.5	4.5	7.1	6.5 5.7	6.1	6.8
				Middle	3.5	25.4 25.3	25.4	7.8 7.8	7.8	19.7 19.7	19.7	73.1 71.5	72.3	5.4 5.3	5.4		5.4 5.5	5.5		11.6 6.4	9.0	
				Bottom	6	24.8 24.8	24.8	7.8 7.8	7.8	28.3 28.3	28.3	75.4 72.9	74.2	5.3 5.2	5.3	5.3	11.3 11.5	11.4		5.8 4.5	5.2	
13-Jul-15	Sunny	Moderate	18:01	Surface	1	29.0 29.0	29.0	8.0 8.0	8.0	21.3 21.3	21.3	74.9 74.8	74.9	5.6 5.6	5.6	5.5	4.6 4.4	4.5	6.0	3.8 1.8	2.8	4.6
				Middle	3	28.2 28.2	28.2	7.9 7.9	7.9	22.7 22.5	22.6	69.9 69.4	69.7	5.3 5.3	5.3		6.6 6.2	6.4		3.8 4.3	4.1	
				Bottom	5	28.0 28.0	28.0	7.9 7.9	7.9	23.1 23.2	23.2	66.8 66.4	66.6	5.1 5.1	5.1	5.1	7.2 7.2	7.2		8.1 5.7	6.9	
15-Jul-15	Fine	Moderate	19:32	Surface	1	25.9 26.0	26.0	8.1 8.0	8.1	28.4 28.2	28.3	99.2 90.5	94.9	6.9 6.3	6.6	6.1	2.8 2.9	2.9	8.4	5.4 6.9	6.2	6.6
				Middle	3.5	25.7 25.7	25.7	8.1 8.3	8.2	30.3 30.1	30.2	79.3 79.9	79.6	5.5 5.5	5.5		7.0 7.6	7.3		12.3 4.5	8.4	
				Bottom	6	26.3 26.0	26.2	8.2 8.2	8.2	29.0 29.4	29.2	80.0 81.6	80.8	5.5 5.6	5.6	5.6	14.2 15.7	15.0		3.3 7.1	5.2	
17-Jul-15	Sunny	Moderate	20:17	Surface	1	27.3 27.3	27.3	7.9 7.9	7.9	30.0 30.0	30.0	81.7 81.4	81.6	5.8 5.8	5.8	5.8	5.5 6.5	6.0	6.5	10.0 19.3	14.7	11.4
				Middle	4	26.6 26.6	26.6	7.9 7.9	7.9	32.3 32.2	32.3	80.3 79.8	80.1	5.7 5.7	5.7		5.9 6.0	6.0		7.1 12.5	9.8	
				Bottom	7	26.2 26.1	26.2	7.9 7.9	7.9	33.8 33.9	33.9	83.0 85.8	84.4	5.9 6.1	6.0	6.0	7.2 7.8	7.5		7.5 11.7	9.6	

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

Water Quality Monitoring Results at IS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	09:02	Surface	1	28.0 28.1	28.1	8.1 8.1	8.1	27.1 27.1	27.1	100.3 99.9	100.1	6.8 6.7	6.8	6.7	5.6 5.6	5.6		8.2 7.3	7.8	
				Middle	3.5	27.7 27.8	27.8	8.0 8.0	8.0	28.1 28.0	28.1	95.8 95.3	95.6	6.5 6.4	6.5		6.7 6.2	6.5	7.2	7.5 6.3	6.9	9.0
				Bottom	6	27.7 27.7	27.7	7.9 7.9	7.9	29.5 29.5	29.5	88.8 89.4	89.1	5.9 6.0	6.0	6.0	9.9 8.8	9.4		11.3 13.2	12.3	
22-Jul-15	Sunny	Moderate	10:08	Surface	1	27.8 27.9	27.9	7.6 7.6	7.6	15.9 15.9	15.9	73.6 73.2	73.4	5.3 5.3	5.3	5.2	5.3 5.4	5.4		5.5 5.6	5.6	
				Middle	3	26.2 26.2	26.2	7.6 7.6	7.6	19.1 19.3	19.2	70.2 69.9	70.1	5.1 5.1	5.1		5.6 5.6	5.6	5.4	6.6 5.1	5.9	5.6
				Bottom	5	26.1 26.1	26.1	7.6 7.6	7.6	20.8 20.7	20.8	68.3 68.3	68.3	4.9 4.9	4.9	4.9	5.2 5.0	5.1		5.4 5.4	5.4	
24-Jul-15	Sunny	Moderate	12:08	Surface	1	27.9 27.8	27.9	7.9 7.9	7.9	15.9 15.9	15.9	79.9 79.0	79.5	6.2 6.2	6.2	6.2	7.8 7.8	7.8		3.6 2.9	3.3	
				Middle	3	26.5 26.5	26.5	8.0 8.0	8.0	27.5 27.5	27.5	73.1 71.4	72.3	6.1 6.1	6.1		8.1 8.5	8.3	8.8	3.3 2.5	2.9	3.5
				Bottom	5	26.4 26.4	26.4	8.0 8.0	8.0	28.5 28.5	28.5	68.7 68.4	68.6	5.8 5.7	5.8	5.8	10.1 10.3	10.2		3.8 4.5	4.2	
27-Jul-15	Sunny	Calm	16:56	Surface	1	27.9 27.9	27.9	8.1 8.1	8.1	20.6 20.6	20.6	99.8 99.5	99.7	7.4 7.4	7.4	7.4	5.5 6.1	5.8		3.9 3.6	3.8	
				Middle	3.5	27.2 27.2	27.2	8.1 8.0	8.1	22.8 22.8	22.8	98.4 97.9	98.2	7.3 7.2	7.3		6.3 6.5	6.4	6.8	3.2 1.0	2.1	2.3
				Bottom	6	26.8 26.8	26.8	8.0 8.0	8.0	25.7 25.7	25.7	101.1 103.9	102.5	7.4 7.6	7.5	7.5	7.8 8.3	8.1		1.0 1.2	1.1	
29-Jul-15	Fine	Moderate	18:15	Surface	1	28.3 28.3	28.3	8.1 8.0	8.1	22.6 23.3	23.0	102.4 95.4	98.9	7.0 6.5	6.8	6.8	4.1 3.6	3.9		6.8 6.5	6.7	
				Middle	3.5	28.5 28.5	28.5	8.0 8.1	8.1	23.6 23.0	23.3	96.3 102.2	99.3	6.6 7.0	6.8		7.6 7.5	7.6	7.0	6.3 4.9	5.6	5.9
				Bottom	6	28.3 28.5	28.4	8.1 8.2	8.2	30.3 31.1	30.7	104.1 102.4	103.3	6.9 6.7	6.8	6.8	10.5 8.7	9.6		5.2 5.6	5.4	
31-Jul-15	Fine	Moderate	19:36	Surface	1	28.0 27.9	28.0	8.0 8.0	8.0	22.5 21.0	21.8	78.3 78.5	78.4	5.4 5.5	5.5	5.4	21.1 21.0	21.1		50.7 40.0	45.4	
				Middle	3.5	27.7 27.7	27.7	8.0 8.0	8.0	23.0 23.0	23.0	75.1 75.0	75.1	5.2 5.2	5.2		18.6 17.8	18.2	21.0	43.3 47.7	45.5	45.3
				Bottom	6	27.4 27.4	27.4	8.0 8.0	8.0	23.6 23.6	23.6	69.5 70.1	69.8	4.8 4.9	4.9	4.9	23.2 23.9	23.6		42.3 47.7	45.0	

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

Water Quality Monitoring Results at IS3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
2-Jul-15	Sunny	Moderate	12:05	Surface	1	28.9 29.2	29.1	7.9 8.0	8.0	18.0 18.1	18.1	83.4 83.6	83.5	5.8 5.8	5.8	5.8	12.5 13.4	13.0		4.0 4.2	4.1	
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	14.9	- -	-	6.0
				Bottom	4.1	29.0 28.8	28.9	7.9 7.9	7.9	28.8 28.8	28.8	82.5 81.8	82.2	5.4 5.4	5.4	5.4	16.1 17.2	16.7		7.7 8.0	7.9	
4-Jul-15	Sunny	Moderate	13:50	Surface	1	29.4 29.5	29.5	7.8 7.8	7.8	19.5 19.7	19.6	88.3 88.1	88.2	6.1 6.0	6.1	6.1	4.8 5.3	5.1		9.3 7.4	8.4	
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	8.8	- -	-	13.6
				Bottom	4.6	25.3 25.4	25.4	7.7 7.7	7.7	30.8 30.8	30.8	78.3 77.6	78.0	5.4 5.4	5.4	5.4	12.4 12.3	12.4		19.8 17.7	18.8	
6-Jul-15	Sunny	Moderate	15:46	Surface	1	28.6 28.3	28.5	7.8 7.8	7.8	22.3 23.1	22.7	93.6 93.3	93.5	6.4 6.4	6.4	6.4	5.2 5.3	5.3		5.1 4.3	4.7	
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	5.1	- -	-	4.5
				Bottom	3.1	28.3 28.3	28.3	7.8 7.8	7.8	26.0 26.2	26.1	92.7 92.3	92.5	6.2 6.2	6.2	6.2	4.8 4.8	4.8		4.5 4.1	4.3	
8-Jul-15	Sunny	Moderate	17:00	Surface	1	28.0 28.0	28.0	8.1 8.1	8.1	25.4 25.3	25.4	81.3 81.2	81.3	6.5 6.5	6.5	6.5	6.0 6.0	6.0		5.6 3.3	4.5	
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	8.7	- -	-	4.2
				Bottom	4.6	26.3 26.3	26.3	8.0 8.0	8.0	30.0 30.0	30.0	51.1 50.3	50.7	5.2 5.1	5.2	5.2	11.6 11.2	11.4		3.3 4.5	3.9	
10-Jul-15	Sunny	Moderate	08:32	Surface	1	26.1 26.3	26.2	7.7 7.8	7.8	10.5 10.6	10.6	77.2 77.0	77.1	5.9 5.9	5.9	5.9	5.7 6.2	6.0		4.6 6.4	5.5	
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	10.0	- -	-	6.2
				Bottom	4.5	25.9 26.0	26.0	7.8 7.7	7.8	13.1 13.1	13.1	69.6 69.0	69.3	5.3 5.2	5.3	5.3	13.6 14.2	13.9		4.4 9.3	6.9	
13-Jul-15	Sunny	Moderate	11:10	Surface	1	28.6 28.7	28.7	7.9 7.7	7.8	24.4 23.9	24.2	76.6 70.6	73.6	5.4 5.5	5.5	5.5	5.7 5.8	5.8		3.7 1.7	2.7	
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	7.4	- -	-	3.7
				Bottom	4.1	28.8 28.5	28.7	7.8 8.0	7.9	30.8 31.7	31.3	84.1 87.2	85.7	5.5 5.6	5.6	5.6	9.2 8.7	9.0		3.7 5.5	4.6	
15-Jul-15	Sunny	Moderate	12:10	Surface	1	26.1 26.0	26.1	8.3 8.2	8.3	30.1 30.0	30.1	81.1 80.1	80.6	5.6 5.5	5.6	5.6	6.8 6.9	6.9		7.6 8.4	8.0	
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	8.0	- -	-	6.4
				Bottom	4.4	25.9 25.9	25.9	8.3 8.1	8.2	31.8 32.3	32.1	79.5 80.4	80.0	5.4 5.4	5.4	5.4	9.0 9.0	9.0		5.6 4.0	4.8	
17-Jul-15	Sunny	Moderate	13:12	Surface	1	27.0 27.2	27.1	7.8 7.6	7.7	32.3 31.8	32.1	82.9 77.0	80.0	5.5 5.1	5.3	5.3	11.5 11.8	11.7		8.3 6.4	7.4	
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	12.2	- -	-	6.6
				Bottom	4.1	27.2 27.0	27.1	7.7 7.9	7.8	31.8 32.7	32.3	90.2 93.2	91.7	6.0 6.2	6.1	6.1	12.5 12.7	12.6		5.3 6.0	5.7	

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

Water Quality Monitoring Results at IS3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	15:33	Surface	1	28.1 28.1	28.1	8.1 8.1	8.1	27.8 27.8	27.8	100.7 99.8	100.3	6.7 6.7	6.7	6.7	4.5 4.5	4.5	4.9	10.4 8.5	9.5	8.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.6	28.2 28.2	28.2	8.1 8.1	8.1	27.9 27.9	27.9	99.0 98.7	98.9	6.6 6.6	6.6	6.6	5.5 5.1	5.3		9.5 7.0	8.3	
22-Jul-15	Sunny	Moderate	15:57	Surface	1	27.5 27.5	27.5	7.5 7.5	7.5	15.9 15.9	15.9	77.3 76.1	76.7	6.0 5.9	6.0	6.0	10.7 10.6	10.7	10.4	8.6 12.3	10.5	10.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.4	26.7 26.8	26.8	7.8 7.8	7.8	19.2 18.9	19.1	70.0 70.0	70.0	5.4 5.4	5.4	5.4	10.3 9.7	10.0		10.2 11.5	10.9	
24-Jul-15	Fine	Moderate	17:19	Surface	1	27.8 27.5	27.7	8.0 7.8	7.9	18.5 16.5	17.5	79.7 81.7	80.7	5.7 5.9	5.8	5.8	6.2 5.6	5.9	7.6	10.2 10.7	10.5	10.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.9	27.7 27.9	27.8	8.0 7.8	7.9	23.8 22.8	23.3	86.4 85.3	85.9	6.0 5.9	6.0	6.0	8.8 9.7	9.3		12.3 10.3	11.3	
27-Jul-15	Sunny	Calm	09:12	Surface	1	28.7 28.7	28.7	8.1 8.1	8.1	23.8 23.7	23.8	108.1 108.3	108.2	7.8 7.8	7.8	7.8	2.2 2.3	2.3	5.1	8.4 9.1	8.8	8.2
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.8	28.5 28.6	28.6	8.1 8.1	8.1	24.5 24.4	24.5	101.0 102.5	101.8	7.3 7.4	7.4	7.4	7.2 8.3	7.8		6.4 8.6	7.5	
29-Jul-15	Sunny	Moderate	10:40	Surface	1	28.3 28.2	28.3	8.0 8.0	8.0	18.7 18.8	18.8	98.0 93.0	95.5	6.9 6.5	6.7	6.7	2.6 2.8	2.7	4.1	5.8 4.0	4.9	5.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.8	26.9 26.9	26.9	8.0 8.0	8.0	25.8 25.6	25.7	93.3 89.5	91.4	6.5 6.2	6.4	6.4	5.4 5.6	5.5		6.7 5.3	6.0	
31-Jul-15	Sunny	Moderate	12:27	Surface	1	27.5 28.3	27.9	7.9 7.9	7.9	24.0 19.9	22.0	77.3 76.4	76.9	5.3 5.3	5.3	5.3	17.6 15.7	16.7	18.0	26.7 32.0	29.4	28.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.4	27.5 28.3	27.9	7.9 7.9	7.9	23.9 20.2	22.1	69.7 69.7	69.7	4.8 4.9	4.9	4.9	19.8 18.8	19.3		25.5 29.5	27.5	

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 (^{o}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*
				Surface	1	28.4 28.3	28.4	8.0 8.0	8.0	18.0 18.0	18.0	85.0 85.0	85.0	6.0 6.0	6.0	6.0	12.0 13.9	13.0		4.7 5.4	5.1	
2-Jul-15	Fine	Moderate	19:03	Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	14.9	- -	-	6.7
				Bottom	4.1	26.1 26.3	26.2	7.9 7.9	7.9	28.9 28.9	28.9	78.0 78.6	78.3	5.4 5.4	5.4	5.4	17.2 16.1	16.7		8.8 7.7	8.3	
				Surface	1	28.5 28.6	28.6	7.8 7.8	7.8	25.4 25.4	25.4	98.3 97.9	98.1	6.6 6.6	6.6	6.6	5.9 6.2	6.1		7.5 3.6	5.6	
4-Jul-15	Sunny	Moderate	07:38	Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	9.9	- -	-	5.9
				Bottom	4.5	28.2 28.6	28.4	7.8 7.8	7.8	27.9 27.9	27.9	79.2 79.4	79.3	5.3 5.3	5.3	5.3	13.5 13.9	13.7		4.3 7.9	6.1	
				Surface	1	28.5 28.4	28.5	7.7 7.7	7.7	23.9 24.2	24.1	97.1 95.1	96.1	6.6 6.5	6.6	6.6	7.0 7.5	7.3		7.9 5.9	6.9	
6-Jul-15	Sunny	Moderate	09:34	Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	7.4	- -	-	4.5
				Bottom	3.1	28.5 28.4	28.5	7.7 7.7	7.7	26.9 27.2	27.1	94.7 93.9	94.3	6.3 6.3	6.3	6.3	7.3 7.4	7.4		0.7 3.2	2.0	
				Surface	1	28.2 28.2	28.2	8.1 8.1	8.1	24.3 24.3	24.3	86.3 86.1	86.2	6.0 6.0	6.0	6.0	7.1 7.9	7.5		3.6 8.7	6.2	
8-Jul-15	Sunny	Moderate	11:06	Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	9.5	- -	-	5.5
				Bottom	4.5	26.7 26.7	26.7	8.0 8.0	8.0	29.2 29.2	29.2	56.5 55.4	56.0	5.8 5.7	5.8	5.8	11.4 11.3	11.4		4.6 4.9	4.8	
				Surface	1	27.0 26.9	27.0	7.9 7.8	7.9	12.1 12.3	12.2	86.6 86.1	86.4	6.5 6.4	6.5	6.5	4.7 5.5	5.1		8.1 10.6	9.4	
10-Jul-15	Sunny	Moderate	13:58	Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	8.9	- -	-	9.9
				Bottom	4.6	22.9 23.1	23.0	7.8 7.8	7.8	27.7 27.9	27.8	69.8 69.8	69.8	5.1 5.1	5.1	5.1	12.5 12.6	12.6		14.0 6.7	10.4	
				Surface	1	28.7 28.5	28.6	7.9 7.7	7.8	24.4 23.6	24.0	72.3 86.1	79.2	4.7 5.6	5.2	5.2	5.2 5.4	5.3		7.0 6.3	6.7	
13-Jul-15	Sunny	Moderate	17:01	Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	6.2	- -	-	6.0
				Bottom	4.2	28.5 28.9	28.7	7.9 7.9	7.9	27.1 26.9	27.0	77.8 74.4	76.1	5.1 5.0	5.1	5.1	6.9 7.0	7.0		6.6 3.8	5.2	
				Surface	1	25.8 25.6	25.7	8.3 8.3	8.3	31.8 31.4	31.6	100.2 97.7	99.0	6.8 6.7	6.8	6.8	7.7 7.8	7.8		10.9 14.5	12.7	
15-Jul-15	Fine	Moderate	18:49	Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	8.4	- -	-	8.7
				Bottom	3.9	25.7 25.8	25.8	8.3 8.3	8.3	31.1 31.7	31.4	95.0 94.6	94.8	6.5 6.4	6.5	6.5	8.9 9.0	9.0		4.1 5.1	4.6	
				Surface	1	27.1 26.8	27.0	7.8 7.7	7.8	32.4 31.7	32.1	78.2 91.6	84.9	5.2 6.1	5.7	5.7	13.5 16.1	14.8		10.4 4.4	7.4	
17-Jul-15	Sunny	Moderate	19:31	Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	15.6	- -	-	7.6
				Bottom	4.1	26.9 27.3	27.1	7.8 7.9	7.9	32.2 32.0	32.1	83.5 80.2	81.9	5.6 5.3	5.5	5.5	17.5 15.2	16.4		7.9 7.7	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 IS3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^{o}C) Value	Temperature (^{o}C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
20-Jul-15	Cloudy	Moderate	08:24	Surface	1	28.0 28.0	28.0	8.0 8.0	8.0	28.4 28.6	28.5	98.4 98.1	98.3	6.6 6.6	6.6	6.6	3.5 3.6	3.6	5.5	6.0 5.8	5.9	6.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.6	27.9 27.9	27.9	8.0 8.0	8.0	29.5 29.5	29.5	98.9 98.7	98.8	6.6 6.6	6.6	6.6	7.5 7.2	7.4		11.1 4.2	7.7	
22-Jul-15	Sunny	Moderate	09:50	Surface	1	27.4 27.5	27.5	7.5 7.5	7.5	15.9 15.9	15.9	78.6 78.4	78.5	6.0 6.0	6.0	6.0	10.5 10.6	10.6	10.6	6.4 14.3	10.4	9.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	26.7 26.7	26.7	7.7 7.8	7.8	20.3 20.3	20.3	66.5 67.6	67.1	5.2 5.3	5.3	5.3	10.6 10.3	10.5		9.2 7.8	8.5	
24-Jul-15	Sunny	Moderate	11:03	Surface	1	27.6 27.8	27.7	7.7 8.0	7.9	17.9 16.8	17.4	81.4 78.9	80.2	5.8 5.7	5.8	5.8	4.5 4.4	4.5	5.7	10.0 7.0	8.5	9.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4	27.6 27.7	27.7	8.0 8.1	8.1	24.6 23.9	24.3	87.1 85.9	86.5	6.0 5.9	6.0	6.0	6.7 6.9	6.8		9.4 10.8	10.1	
27-Jul-15	Sunny	Calm	16:15	Surface	1	29.6 29.6	29.6	8.2 8.2	8.2	21.9 21.9	21.9	111.0 112.1	111.6	8.0 8.1	8.1	8.1	6.1 6.5	6.3	8.1	3.3 5.0	4.2	3.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	28.8 28.8	28.8	8.0 8.0	8.0	25.4 25.2	25.3	103.6 100.3	102.0	7.4 7.2	7.3	7.3	10.0 9.6	9.8		3.4 2.3	2.9	
29-Jul-15	Fine	Moderate	18:23	Surface	1	27.8 27.8	27.8	8.0 8.0	8.0	21.6 21.4	21.5	96.4 94.9	95.7	6.7 6.6	6.7	6.7	7.2 7.6	7.4	9.6	7.8 16.8	12.3	10.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.8	26.7 26.6	26.7	8.0 8.0	8.0	26.8 27.0	26.9	88.1 86.0	87.1	6.1 5.9	6.0	6.0	11.5 12.0	11.8		8.2 10.1	9.2	
31-Jul-15	Fine	Moderate	18:54	Surface	1	28.0 27.8	27.9	8.1 8.1	8.1	27.3 27.0	27.2	88.4 86.4	87.4	6.0 5.8	5.9	5.9	14.1 14.2	14.2	15.8	29.3 29.7	29.5	30.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.9	27.9 28.0	28.0	8.2 8.1	8.2	26.7 27.3	27.0	84.3 84.0	84.2	5.7 5.7	5.7	5.7	17.3 17.4	17.4		31.3 33.0	32.2	

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-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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-Jul-15	Sunny	Moderate	13:53	Surface	1	29.5 29.6	29.6	8.0 8.0	8.0	17.1 17.0	17.1	94.2 94.7	94.5	6.5 6.6	6.6	6.5	4.8 4.4	4.6	7.5	3.0 2.4	2.7	2.7
				Middle	3	29.2 29.2	29.2	7.9 7.9	7.9	17.7 17.7	17.7	91.4 90.8	91.1	6.4 6.3	6.4		5.3 5.3	5.3		3.2 2.8	3.0	
				Bottom	5	26.6 26.6	26.6	7.8 7.8	7.8	26.4 26.4	26.4	80.6 80.0	80.3	5.6 5.5	5.6	5.6	12.9 12.5	12.7		2.9 1.9	2.4	
4-Jul-15	Sunny	Moderate	14:34	Surface	1	28.1 28.0	28.1	7.7 7.7	7.7	24.2 24.5	24.4	82.0 81.7	81.9	5.6 5.6	5.6	5.5	6.9 7.1	7.0	10.3	9.8 9.8	9.8	13.3
				Middle	3	25.9 25.9	25.9	7.7 7.7	7.7	29.4 29.4	29.4	77.6 76.1	76.9	5.3 5.2	5.3		10.4 10.8	10.6		11.6 14.8	13.2	
				Bottom	5	25.6 25.6	25.6	7.7 7.7	7.7	30.3 30.3	30.3	73.2 72.7	73.0	5.0 5.0	5.0	5.0	13.5 13.0	13.3		16.2 17.7	17.0	
6-Jul-15	Sunny	Moderate	16:35	Surface	1	28.2 28.2	28.2	7.9 7.9	7.9	20.4 20.5	20.5	99.8 100.1	100.0	7.0 7.0	7.0	6.9	6.2 6.2	6.2	9.4	4.3 4.1	4.2	3.8
				Middle	3.5	27.2 27.3	27.3	7.9 7.9	7.9	22.9 22.7	22.8	95.4 94.8	95.1	6.7 6.6	6.7		9.2 10.0	9.6		3.0 3.9	3.5	
				Bottom	6	25.3 25.3	25.3	7.7 7.7	7.7	28.1 28.1	28.1	71.5 71.3	71.4	5.0 5.0	5.0	5.0	12.6 12.4	12.5		4.7 2.6	3.7	
8-Jul-15	Sunny	Moderate	17:47	Surface	1	29.5 29.5	29.5	8.1 8.1	8.1	21.6 21.6	21.6	109.5 109.8	109.7	7.4 7.4	7.4	7.1	8.9 8.9	8.9	10.7	7.8 4.1	6.0	5.1
				Middle	3.5	28.5 28.5	28.5	8.1 8.1	8.1	23.7 23.5	23.6	97.9 97.1	97.5	6.7 6.6	6.7		9.2 9.1	9.2		4.6 4.2	4.4	
				Bottom	6	26.5 26.5	26.5	7.9 7.9	7.9	31.3 31.3	31.3	81.0 80.6	80.8	5.5 5.4	5.5	5.5	14.0 13.9	14.0		5.8 4.2	5.0	
10-Jul-15	Sunny	Moderate	09:22	Surface	1	25.5 25.5	25.5	7.8 7.8	7.8	18.2 18.2	18.2	75.5 75.5	75.5	5.6 5.6	5.6	5.5	5.8 5.9	5.9	6.5	14.1 5.3	9.7	10.3
				Middle	4	24.7 24.6	24.7	7.8 7.8	7.8	21.9 21.9	21.9	72.7 72.7	72.7	5.3 5.3	5.3		6.2 6.2	6.2		8.5 6.6	7.6	
				Bottom	7	24.5 24.5	24.5	7.8 7.8	7.8	29.3 29.3	29.3	76.0 74.4	75.2	5.4 5.3	5.4	5.4	7.2 7.7	7.5		10.5 16.5	13.5	
13-Jul-15	Sunny	Moderate	11:45	Surface	1	29.2 29.2	29.2	8.1 8.1	8.1	18.9 18.8	18.9	67.8 68.4	68.1	5.7 5.7	5.7	5.6	2.8 2.7	2.8	4.2	5.3 7.7	6.5	5.2
				Middle	3	27.9 27.8	27.9	7.9 7.9	7.9	23.7 23.9	23.8	64.5 62.8	63.7	5.4 5.3	5.4		2.4 2.3	2.4		4.2 3.5	3.9	
				Bottom	5	26.7 26.6	26.7	7.9 7.9	7.9	28.7 27.8	28.3	58.6 58.0	58.3	5.0 5.0	5.0	5.0	7.2 7.5	7.4		4.2 6.1	5.2	
15-Jul-15	Sunny	Moderate	13:18	Surface	1	25.8 26.0	25.9	8.3 8.1	8.2	29.1 28.8	29.0	94.2 93.9	94.1	6.5 6.5	6.5	6.1	1.9 2.0	2.0	5.2	1.5 9.3	5.4	7.3
				Middle	3	25.9 26.0	26.0	8.0 8.2	8.1	28.2 28.5	28.4	79.5 81.7	80.6	5.5 5.6	5.6		4.8 4.7	4.8		9.6 7.1	8.4	
				Bottom	5	26.4 25.8	26.1	8.1 8.2	8.2	30.0 29.8	29.9	80.2 76.3	78.3	5.5 5.3	5.4	5.4	9.2 8.3	8.8		8.9 7.1	8.0	
17-Jul-15	Sunny	Moderate	14:08	Surface	1	27.8 27.8	27.8	7.9 7.9	7.9	29.7 29.7	29.7	78.5 78.4	78.5	5.5 5.5	5.5	5.5	5.3 5.2	5.3	6.9	15.7 11.6	13.7	8.0
				Middle	3	27.2 27.2	27.2	7.9 7.9	7.9	31.8 31.8	31.8	76.9 76.6	76.8	5.4 5.4	5.4		6.8 6.7	6.8		1.3 2.7	2.0	
				Bottom	5	26.7 26.6	26.7	7.9 7.9	7.9	33.6 33.6	33.6	73.7 73.0	73.4	5.2 5.1	5.2	5.2	8.6 8.6	8.6		9.1 7.2	8.2	

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-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	15:44	Surface	1	28.1 28.1	28.1	8.0 8.0	8.0	27.5 27.5	27.5	101.7 101.2	101.5	6.8 6.8	6.8	6.6	5.8 5.2	5.5	6.5	8.3 7.0	7.7	9.7
				Middle	3	27.8 27.9	27.9	8.0 8.0	8.0	28.3 28.3	28.3	95.1 94.5	94.8	6.4 6.3	6.4		6.2 6.3	6.3		14.0 7.2	10.6	
				Bottom	5	27.7 27.7	27.7	8.0 8.0	8.0	29.9 29.9	29.9	86.5 85.4	86.0	5.8 5.7	5.8	5.8	7.9 7.5	7.7		12.7 8.8	10.8	
22-Jul-15	Sunny	Moderate	16:49	Surface	1	27.6 27.6	27.6	7.9 7.9	7.9	15.7 15.7	15.7	85.7 85.5	85.6	6.2 6.2	6.2	6.2	8.6 8.8	8.7	10.2	4.8 6.0	5.4	5.0
				Middle	3	27.4 27.3	27.4	7.9 7.9	7.9	16.1 16.2	16.2	84.8 85.2	85.0	6.1 6.2	6.2		10.1 10.0	10.1		3.6 5.7	4.7	
				Bottom	5	27.0 27.0	27.0	8.0 8.0	8.0	17.4 17.4	17.4	82.0 81.7	81.9	5.9 5.9	5.9	5.9	11.5 11.8	11.7		4.1 5.6	4.9	
24-Jul-15	Fine	Moderate	18:29	Surface	1	27.9 27.8	27.9	7.8 7.7	7.8	16.9 16.3	16.6	72.1 71.8	72.0	5.7 5.7	5.7	5.7	5.8 5.9	5.9	7.3	3.0 3.8	3.4	3.9
				Middle	3.5	27.3 27.3	27.3	7.8 7.9	7.9	23.4 22.7	23.1	72.8 72.6	72.7	5.6 5.6	5.6		4.8 4.8	4.8		5.0 4.2	4.6	
				Bottom	6	26.8 26.8	26.8	7.9 7.9	7.9	27.8 27.8	27.8	69.7 69.3	69.5	5.3 5.2	5.3	5.3	11.2 11.4	11.3		3.4 3.9	3.7	
27-Jul-15	Sunny	Calm	10:53	Surface	1	28.9 28.8	28.9	8.2 8.2	8.2	20.2 20.1	20.2	95.6 96.6	96.1	7.0 7.1	7.1	7.0	4.6 4.5	4.6	6.2	3.6 3.5	3.6	3.2
				Middle	3	28.7 28.3	28.5	8.1 8.1	8.1	22.2 22.3	22.3	93.8 94.0	93.9	6.8 6.8	6.8		6.1 6.0	6.1		3.1 1.7	2.4	
				Bottom	5	27.6 27.7	27.7	8.1 8.1	8.1	25.0 25.1	25.1	90.2 90.6	90.4	6.5 6.6	6.6	6.6	7.9 7.9	7.9		3.9 3.2	3.6	
29-Jul-15	Sunny	Moderate	11:15	Surface	1	28.4 28.5	28.5	8.3 8.2	8.3	22.4 21.6	22.0	100.6 99.0	99.8	6.9 6.8	6.9	6.9	4.3 4.3	4.3	7.0	3.6 4.8	4.2	4.4
				Middle	3	28.4 28.5	28.5	8.3 8.3	8.3	23.7 23.5	23.6	98.7 100.4	99.6	6.7 6.8	6.8		6.4 7.2	6.8		5.8 4.0	4.9	
				Bottom	5	28.3 28.3	28.3	8.2 8.1	8.2	30.8 31.1	31.0	102.9 106.7	104.8	6.8 7.0	6.9	6.9	9.9 10.0	10.0		3.6 4.5	4.1	
31-Jul-15	Sunny	Moderate	13:25	Surface	1	28.3 28.4	28.4	8.0 8.0	8.0	21.9 21.8	21.9	82.3 81.1	81.7	5.7 5.6	5.7	5.6	8.8 9.8	9.3	14.9	39.5 38.5	39.0	35.8
				Middle	3.5	27.5 27.6	27.6	8.0 8.0	8.0	23.0 23.0	23.0	77.4 76.1	76.8	5.4 5.3	5.4		17.0 18.3	17.7		35.0 33.5	34.3	
				Bottom	6	27.3 27.2	27.3	8.0 8.0	8.0	23.9 23.7	23.8	75.2 74.3	74.8	5.2 5.2	5.2	5.2	17.1 18.4	17.8		39.0 29.0	34.0	

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

Water Quality Monitoring Results at IS4 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Jul-15	Fine	Moderate	19:57	Surface	1	29.3 29.3	29.3	8.0 8.0	8.0	17.0 17.1	17.1	96.4 96.6	96.5	6.7 6.7	6.7	6.4	5.2 5.2	5.2	7.0	4.4 3.6	4.0	4.5
				Middle	3.5	28.3 28.4	28.4	8.0 8.0	8.0	19.1 19.0	19.1	85.1 84.4	84.8	6.0 5.9	6.0		5.5 5.4	5.5		3.0 4.3	3.7	
				Bottom	6	26.3 26.3	26.3	7.8 7.8	7.8	26.8 26.7	26.8	75.8 75.5	75.7	5.3 5.2	5.3	5.3	10.3 10.2	10.3		7.2 4.5	5.9	
4-Jul-15	Sunny	Moderate	08:33	Surface	1	28.2 28.2	28.2	7.8 7.8	7.8	20.6 20.6	20.6	81.1 80.5	80.8	5.6 5.6	5.6	5.6	11.1 10.8	11.0	11.1	8.2 9.2	8.7	12.1
				Middle	3.5	28.2 28.2	28.2	7.8 7.8	7.8	20.8 20.7	20.8	78.9 78.8	78.9	5.5 5.5	5.5		11.2 11.5	11.4		16.6 12.0	14.3	
				Bottom	6	28.1 28.1	28.1	7.8 7.8	7.8	21.0 21.0	21.0	75.8 76.2	76.0	5.3 5.3	5.3	5.3	11.0 10.6	10.8		12.6 13.7	13.2	
6-Jul-15	Sunny	Moderate	10:34	Surface	1	28.4 28.4	28.4	7.9 7.9	7.9	20.5 20.4	20.5	97.5 98.0	97.8	6.8 6.8	6.8	6.4	5.8 5.3	5.6	9.2	9.8 11.1	10.5	9.1
				Middle	3	28.1 28.1	28.1	7.8 7.8	7.8	22.2 22.2	22.2	85.9 85.1	85.5	5.9 5.9	5.9		9.8 9.8	9.8		11.1 13.9	12.5	
				Bottom	5	25.6 25.6	25.6	7.8 7.8	7.8	28.7 28.7	28.7	82.5 81.9	82.2	5.7 5.7	5.7	5.7	12.5 12.0	12.3		4.5 4.0	4.3	
8-Jul-15	Sunny	Moderate	11:07	Surface	1	29.7 29.8	29.8	8.1 8.1	8.1	21.7 21.6	21.7	107.3 107.9	107.6	7.2 7.3	7.3	7.2	8.5 8.1	8.3	11.2	3.4 4.3	3.9	3.4
				Middle	3	29.4 29.4	29.4	8.0 8.0	8.0	22.2 22.3	22.3	104.4 103.8	104.1	7.1 7.0	7.1		9.0 9.0	9.0		1.9 3.2	2.6	
				Bottom	5	26.8 26.8	26.8	7.8 7.8	7.8	31.0 31.0	31.0	75.5 74.9	75.2	5.1 5.0	5.1	5.1	16.6 16.2	16.4		3.0 4.1	3.6	
10-Jul-15	Sunny	Moderate	14:09	Surface	1	26.0 26.0	26.0	7.8 7.8	7.8	18.8 18.8	18.8	77.1 77.1	77.1	5.6 5.6	5.6	5.4	4.3 4.2	4.3	7.3	5.9 6.1	6.0	7.6
				Middle	3.5	25.3 25.3	25.3	7.8 7.8	7.8	19.7 19.7	19.7	70.2 70.2	70.2	5.2 5.2	5.2		5.6 5.7	5.7		6.3 13.1	9.7	
				Bottom	6	24.8 24.7	24.8	7.8 7.8	7.8	28.3 28.4	28.4	72.9 71.1	72.0	5.2 5.0	5.1	5.1	11.7 12.3	12.0		9.6 4.8	7.2	
13-Jul-15	Sunny	Moderate	18:11	Surface	1	29.0 29.1	29.1	8.0 8.0	8.0	21.2 21.2	21.2	73.8 74.0	73.9	5.5 5.6	5.6	5.4	4.1 4.3	4.2	6.8	4.1 9.3	6.7	6.6
				Middle	3	28.3 28.3	28.3	7.9 7.9	7.9	22.5 22.6	22.6	68.1 68.0	68.1	5.2 5.2	5.2		7.3 6.4	6.9		7.7 6.2	7.0	
				Bottom	5	27.7 27.7	27.7	7.9 7.9	7.9	24.4 24.5	24.5	63.5 62.7	63.1	4.9 4.8	4.9	4.9	9.2 9.6	9.4		5.5 6.8	6.2	
15-Jul-15	Fine	Moderate	19:48	Surface	1	26.4 25.6	26.0	8.1 8.2	8.2	28.6 28.6	28.6	94.2 89.9	92.1	6.5 6.3	6.4	6.1	3.2 3.3	3.3	8.7	3.3 5.3	4.3	4.9
				Middle	3.5	26.1 25.7	25.9	8.3 8.2	8.3	27.8 29.5	28.7	80.3 83.7	82.0	5.6 5.8	5.7		8.1 8.1	8.1		5.3 5.6	5.5	
				Bottom	6	26.2 25.8	26.0	8.3 8.2	8.3	29.0 28.5	28.8	77.4 80.4	78.9	5.3 5.6	5.5	5.5	14.3 14.8	14.6		4.5 5.3	4.9	
17-Jul-15	Sunny	Moderate	20:28	Surface	1	27.3 27.3	27.3	7.9 7.9	7.9	30.0 30.0	30.0	82.8 82.3	82.6	5.9 5.8	5.9	5.8	8.4 7.4	7.9	7.9	6.8 6.6	6.7	13.8
				Middle	3	26.7 26.7	26.7	7.9 7.9	7.9	32.0 32.0	32.0	81.0 80.3	80.7	5.7 5.7	5.7		6.9 6.9	6.9		16.3 20.4	18.4	
				Bottom	5	26.2 26.2	26.2	7.9 7.9	7.9	33.8 33.8	33.8	76.6 75.9	76.3	5.4 5.4	5.4	5.4	8.5 9.1	8.8		11.0 21.4	16.2	

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 (^oC)		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*
20-Jul-15	Cloudy	Moderate	09:14	Surface	1	28.1 28.1	28.1	8.0 7.9	8.0	27.1 27.1	27.1	103.1 103.3	103.2	6.9 6.9	6.9	6.7	6.2 6.5	6.4	7.7	6.5 4.6	5.6	7.7
				Middle	3	27.8 27.8	27.8	8.0 7.9	8.0	28.9 28.9	28.9	94.6 95.1	94.9	6.3 6.4	6.4		6.9 6.9	6.9		8.2 7.3	7.8	
				Bottom	5	27.6 27.6	27.6	7.9 8.0	8.0	29.2 29.3	29.3	90.0 91.2	90.6	6.0 6.1	6.1	6.1	9.3 10.2	9.8		9.8 9.8	9.8	
22-Jul-15	Sunny	Moderate	10:21	Surface	1	27.4 27.4	27.4	7.6 7.7	7.7	14.6 14.6	14.6	76.4 76.3	76.4	5.6 5.6	5.6	5.5	6.8 6.3	6.6	8.3	8.4 5.9	7.2	6.1
				Middle	3	26.2 26.2	26.2	7.7 7.6	7.7	20.0 20.0	20.0	74.3 73.6	74.0	5.4 5.3	5.4		9.2 9.8	9.5		5.5 6.9	6.2	
				Bottom	5	26.1 26.1	26.1	7.7 7.7	7.7	20.6 20.7	20.7	71.8 72.1	72.0	5.2 5.2	5.2	5.2	8.7 8.9	8.8		5.6 4.1	4.9	
24-Jul-15	Sunny	Moderate	12:20	Surface	1	28.0 28.0	28.0	7.9 7.9	7.9	15.5 15.5	15.5	82.3 81.3	81.8	5.9 5.8	5.9	5.7	7.8 7.7	7.8	7.8	2.5 4.6	3.6	3.9
				Middle	3.5	27.0 27.0	27.0	7.9 7.9	7.9	23.1 22.6	22.9	76.6 75.6	76.1	5.4 5.3	5.4		6.7 6.6	6.7		3.1 4.2	3.7	
				Bottom	6	26.5 26.5	26.5	8.0 8.0	8.0	27.9 26.5	27.2	71.1 70.6	70.9	4.9 4.9	4.9	4.9	8.7 8.8	8.8		4.1 4.9	4.5	
27-Jul-15	Sunny	Calm	17:08	Surface	1	27.9 27.9	27.9	8.1 8.1	8.1	20.6 20.5	20.6	100.9 100.4	100.7	7.5 7.4	7.5	7.4	4.5 4.9	4.7	6.7	1.8 1.0	1.4	1.9
				Middle	3	27.4 27.3	27.4	8.1 8.1	8.1	22.7 22.8	22.8	99.1 98.4	98.8	7.3 7.3	7.3		6.9 6.5	6.7		3.0 2.9	3.0	
				Bottom	5	26.8 26.8	26.8	8.0 8.1	8.1	25.6 25.7	25.7	94.7 94.0	94.4	6.9 6.9	6.9	6.9	8.5 8.8	8.7		2.1 <0.5	1.3	
29-Jul-15	Fine	Moderate	18:27	Surface	1	28.5 28.2	28.4	8.1 8.2	8.2	23.1 22.9	23.0	97.7 96.5	97.1	6.7 6.6	6.7	6.8	4.1 4.4	4.3	7.0	4.1 3.5	3.8	5.9
				Middle	3	28.3 28.3	28.3	8.1 8.2	8.2	22.4 21.2	21.8	96.7 100.0	98.4	6.7 6.9	6.8		6.8 7.2	7.0		4.0 8.8	6.4	
				Bottom	5	28.4 28.6	28.5	7.9 8.1	8.0	29.3 30.7	30.0	103.4 107.2	105.3	6.8 7.0	6.9	6.9	9.7 9.9	9.8		9.2 5.8	7.5	
31-Jul-15	Fine	Moderate	19:52	Surface	1	27.8 27.9	27.9	8.0 8.0	8.0	21.7 21.8	21.8	78.7 79.4	79.1	5.5 5.5	5.5	5.3	21.2 20.8	21.0	22.0	48.0 46.3	47.2	48.7
				Middle	3.5	27.7 27.7	27.7	8.0 8.0	8.0	23.1 23.1	23.1	73.7 73.4	73.6	5.1 5.1	5.1		17.4 18.6	18.0		45.7 59.7	52.7	
				Bottom	6	27.3 27.2	27.3	8.0 8.0	8.0	24.0 24.0	24.0	71.1 70.5	70.8	4.9 4.9	4.9	4.9	26.2 27.9	27.1		50.0 42.3	46.2	

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

Water Quality Monitoring Results at SR1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC) Value	Temperature (^oC) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.3	- -	-		- -	-	
2-Jul-15	Sunny	Moderate	12:15	Middle	1	28.6 28.0	28.3	7.9 7.9	7.9	18.1 18.1	18.1	89.4 88.7	89.1	6.3 6.3	6.3		16.2 16.1	16.2	16.2	5.0 6.8	5.9	5.9
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.7	- -	-		- -	-	
4-Jul-15	Sunny	Moderate	14:26	Middle	1	28.7 28.5	28.6	7.7 7.7	7.7	20.9 21.0	21.0	82.5 81.7	82.1	5.7 5.6	5.7		3.3 3.3	3.3	3.3	7.1 7.1	7.1	7.1
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.7	- -	-		- -	-	
6-Jul-15	Sunny	Moderate	16:05	Middle	1.1	28.3 28.3	28.3	7.8 7.8	7.8	21.2 21.3	21.3	98.4 94.9	96.7	6.8 6.6	6.7		4.7 4.6	4.7	4.7	7.6 4.7	6.2	6.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.9	- -	-		- -	-	
8-Jul-15	Sunny	Moderate	16:19	Middle	1.1	27.9 27.9	27.9	8.1 8.1	8.1	24.7 24.8	24.8	85.0 84.9	85.0	5.9 5.9	5.9		6.3 6.2	6.3	6.3	9.8 4.9	7.4	7.4
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.8	- -	-		- -	-	
10-Jul-15	Sunny	Moderate	09:10	Middle	1	25.9 25.8	25.9	7.8 7.8	7.8	12.2 12.1	12.2	76.0 75.6	75.8	5.8 5.8	5.8		5.8 5.4	5.6	5.6	6.0 17.6	11.8	11.8
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.2	- -	-		- -	-	
13-Jul-15	Sunny	Moderate	11:19	Middle	1.1	28.7 28.8	28.8	7.8 7.8	7.8	19.9 20.6	20.3	72.5 86.6	79.6	4.7 5.6	5.2		3.7 3.9	3.8	3.8	4.3 5.0	4.7	4.7
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.8	- -	-		- -	-	
15-Jul-15	Sunny	Moderate	12:35	Middle	1.3	26.0 26.1	26.1	8.2 8.2	8.2	32.7 30.3	31.5	86.2 84.3	85.3	5.8 5.8	5.8		7.3 7.2	7.3	7.3	6.0 6.0	6.0	6.0
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.7	- -	-		- -	-	
17-Jul-15	Sunny	Moderate	13:21	Middle	1.1	27.1 27.3	27.2	7.7 7.7	7.7	31.9 32.5	32.2	78.9 92.7	85.8	5.3 6.1	5.7		14.8 14.7	14.8	14.8	9.2 6.0	7.6	7.6
				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 (^{o}C) Value	Temperature (^{o}C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
20-Jul-15	Cloudy	Moderate	14:32	Middle	1.1	28.2 28.2	28.2	8.1 8.1	8.1	27.7 27.8	27.8	107.3 107.1	107.2	7.2 7.2	7.2	7.2	7.4 7.5	7.5	7.5	7.3 8.2	7.8	7.8
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
22-Jul-15	Sunny	Moderate	16:44	Middle	1	27.4 27.4	27.4	7.8 7.8	7.8	16.0 16.0	16.0	72.0 71.4	71.7	5.6 5.5	5.6	5.6	9.9 10.2	10.1	10.1	8.8 17.8	13.3	13.3
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
24-Jul-15	Fine	Moderate	16:31	Middle	1.1	27.9 27.6	27.8	7.9 8.1	8.0	21.0 20.7	20.9	83.4 80.4	81.9	5.8 5.7	5.8	5.8	4.2 4.2	4.2	4.2	11.5 15.0	13.3	13.3
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
27-Jul-15	Sunny	Calm	09:59	Middle	1.2	28.8 28.8	28.8	8.1 8.1	8.1	23.7 23.7	23.7	110.3 110.3	110.3	8.0 8.0	8.0	8.0	2.7 2.5	2.6	2.6	2.7 2.1	2.4	2.4
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
29-Jul-15	Sunny	Moderate	11:25	Middle	1.2	28.1 28.2	28.2	8.1 8.1	8.1	17.0 16.3	16.7	92.0 91.7	91.9	6.5 6.5	6.5	6.5	4.7 3.8	4.3	4.3	5.6 6.1	5.9	5.9
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
31-Jul-15	Sunny	Moderate	12:53	Middle	1.3	28.4 28.4	28.4	7.9 7.9	7.9	20.0 20.0	20.0	74.0 73.2	73.6	5.2 5.1	5.2	5.2	10.1 11.0	10.6	10.6	16.5 31.3	23.9	23.9
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Water Quality Monitoring Results at SR1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^{o}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-Jul-15	Fine	Moderate	19:12	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1	28.2 27.3	27.8	8.0 8.0	8.0	18.0 18.0	18.0	87.0 85.1	86.1	6.1 6.1	6.1	6.1	10.4 10.3	10.4	10.4	7.7 8.7	8.2	8.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
4-Jul-15	Sunny	Moderate	08:15	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1	28.3 28.3	28.3	7.8 7.8	7.8	26.9 27.0	27.0	78.2 77.7	78.0	5.3 5.2	5.3	5.3	5.5 4.9	5.2	5.2	9.4 8.9	9.2	9.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
6-Jul-15	Sunny	Moderate	09:57	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1	28.4 28.4	28.4	7.7 7.7	7.7	22.2 22.2	22.2	98.4 98.9	98.7	6.8 6.8	6.8	6.8	7.0 8.5	7.8	7.8	2.8 5.8	4.3	4.3
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
8-Jul-15	Sunny	Moderate	11:52	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1.1	28.0 27.9	28.0	8.1 8.1	8.1	25.0 25.1	25.1	81.8 82.3	82.1	5.7 5.7	5.7	5.7	4.7 5.3	5.0	5.0	4.9 4.5	4.7	4.7
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
10-Jul-15	Sunny	Moderate	14:34	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1	26.1 26.0	26.1	7.7 7.7	7.7	13.5 13.6	13.6	68.5 68.8	68.7	5.1 5.2	5.2	5.2	3.6 3.3	3.5	3.5	6.8 6.5	6.7	6.7
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
13-Jul-15	Sunny	Moderate	17:10	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1.2	28.4 28.8	28.6	7.8 8.0	7.9	22.2 22.0	22.1	86.9 82.8	84.9	5.7 5.4	5.6	5.6	3.2 3.4	3.3	3.3	5.2 9.7	7.5	7.5
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Jul-15	Fine	Moderate	19:20	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1	25.7 25.6	25.7	8.2 8.2	8.2	30.7 31.6	31.2	95.3 93.6	94.5	6.5 6.4	6.5	6.5	7.2 7.0	7.1	7.1	5.3 4.9	5.1	5.1
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
17-Jul-15	Sunny	Moderate	19:40	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1.2	26.8 27.2	27.0	7.7 7.9	7.8	32.2 32.1	32.2	92.4 88.4	90.4	6.2 5.9	6.1	6.1	11.8 11.6	11.7	11.7	6.0 7.7	6.9	6.9
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Water Quality Monitoring Results at SR1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^{o}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*
20-Jul-15	Cloudy	Moderate	09:31	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1.1	28.0 28.0	28.0	8.0 8.0	8.0	28.6 28.7	28.7	104.1 103.2	103.7	7.0 6.9	7.0	7.0	4.6 4.8	4.7	4.7	9.7 7.3	8.5	8.5
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
22-Jul-15	Sunny	Moderate	10:31	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1	27.3 27.3	27.3	7.9 7.9	7.9	16.0 16.0	16.0	74.2 72.1	73.2	5.7 5.6	5.7	5.7	9.2 9.4	9.3	9.3	5.5 4.7	5.1	5.1
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
24-Jul-15	Sunny	Moderate	11:55	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1.1	27.7 27.6	27.7	7.9 8.0	8.0	22.0 21.0	21.5	79.9 84.3	82.1	5.6 5.9	5.8	5.8	6.8 7.1	7.0	7.0	11.2 10.0	10.6	10.6
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
27-Jul-15	Sunny	Calm	15:29	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1.1	29.1 29.1	29.1	8.1 8.1	8.1	23.4 23.5	23.5	109.5 108.1	108.8	7.9 7.8	7.9	7.9	2.9 2.9	2.9	2.9	1.2 3.0	2.1	2.1
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
29-Jul-15	Fine	Moderate	17:30	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1.3	28.6 28.6	28.6	8.1 8.0	8.1	16.2 16.1	16.2	102.8 101.9	102.4	7.3 7.2	7.3	7.3	4.9 4.6	4.8	4.8	4.7 5.3	5.0	5.0
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
31-Jul-15	Fine	Moderate	19:26	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Middle	1	27.9 27.8	27.9	8.0 8.1	8.1	26.3 27.1	26.7	84.5 83.2	83.9	5.7 5.6	5.7	5.7	13.6 13.4	13.5	13.5	37.7 36.0	36.9	36.9
				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 SR2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.3	- -	-		- -	-	
2-Jul-15	Sunny	Moderate	11:56	Middle	1.1	29.1 28.6	28.9	7.9 7.9	7.9	18.0 18.1	18.1	92.3 87.1	89.7	6.4 6.1	6.3		10.5 10.4	10.5	10.5	5.3 7.3	6.3	6.3
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.9	- -	-		- -	-	
4-Jul-15	Sunny	Moderate	13:44	Middle	1.1	28.2 28.2	28.2	7.8 7.7	7.8	24.5 23.9	24.2	87.2 86.5	86.9	5.9 5.9	5.9		7.6 7.5	7.6	7.6	14.2 10.3	12.3	12.3
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.8	- -	-		- -	-	
6-Jul-15	Sunny	Moderate	15:38	Middle	1	28.6 28.6	28.6	7.8 7.8	7.8	20.2 20.1	20.2	98.6 97.4	98.0	6.8 6.8	6.8		7.0 6.3	6.7	6.7	4.8 6.0	5.4	5.4
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.4	- -	-		- -	-	
8-Jul-15	Sunny	Moderate	17:09	Middle	0.8	28.0 28.0	28.0	8.0 8.0	8.0	25.7 25.8	25.8	78.1 77.6	77.9	5.4 5.4	5.4		6.3 6.4	6.4	6.4	8.4 9.2	8.8	8.8
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.5	- -	-		- -	-	
10-Jul-15	Sunny	Moderate	08:24	Middle	0.7	26.0 26.0	26.0	7.9 7.9	7.9	16.2 16.4	16.3	74.7 74.0	74.4	5.5 5.5	5.5		9.6 9.5	9.6	9.6	7.3 7.1	7.2	7.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.2	- -	-		- -	-	
13-Jul-15	Sunny	Moderate	11:00	Middle	1.1	28.6 28.9	28.8	7.9 7.9	7.9	22.3 22.0	22.2	83.4 78.1	80.8	5.4 5.0	5.2		4.8 4.7	4.8	4.8	7.1 5.5	6.3	6.3
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.3	- -	-		- -	-	
15-Jul-15	Sunny	Moderate	12:03	Middle	1.3	26.0 26.1	26.1	8.3 8.2	8.3	30.8 31.5	31.2	91.8 93.1	92.5	6.3 6.3	6.3		7.2 6.9	7.1	7.1	7.0 7.9	7.5	7.5
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.8	- -	-		- -	-	
17-Jul-15	Sunny	Moderate	13:02	Middle	1.1	27.0 27.3	27.2	7.9 7.8	7.9	32.3 31.9	32.1	89.5 84.3	86.9	6.0 5.6	5.8		13.5 13.8	13.7	13.7	4.3 4.8	4.6	4.6
				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 (^oC)		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*
20-Jul-15	Cloudy	Moderate	15:45	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.7	- -	-	9.3	- -	-	12.1
				Middle	0.8	28.2 28.2	28.2	8.1 8.2	8.2	29.2 29.2	29.2	101.6 101.4	101.5	6.7 6.7	6.7		9.6 9.0	9.3		15.2 9.0	12.1	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
22-Jul-15	Sunny	Moderate	15:50	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.6	- -	-	7.1	- -	-	11.9
				Middle	1	27.6 27.6	27.6	7.8 7.8	7.8	15.7 15.7	15.7	71.5 72.6	72.1	5.6 5.6	5.6		7.0 7.2	7.1		14.3 9.5	11.9	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
24-Jul-15	Fine	Moderate	17:28	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.8	- -	-	4.6	- -	-	11.7
				Middle	1.1	27.6 27.7	27.7	8.1 8.1	8.1	21.0 22.0	21.5	82.8 82.5	82.7	5.8 5.7	5.8		4.5 4.6	4.6		12.0 11.3	11.7	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
27-Jul-15	Sunny	Calm	09:03	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.6	- -	-	3.6	- -	-	5.3
				Middle	0.9	29.0 28.7	28.9	8.1 8.1	8.1	24.4 24.7	24.6	106.3 105.0	105.7	7.6 7.6	7.6		3.6 3.5	3.6		7.1 3.5	5.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
29-Jul-15	Sunny	Moderate	10:32	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.2	- -	-	4.5	- -	-	5.9
				Middle	0.9	27.9 27.9	27.9	8.0 8.0	8.0	20.2 20.1	20.2	91.8 86.0	88.9	6.4 6.0	6.2		4.2 4.7	4.5		6.0 5.7	5.9	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
31-Jul-15	Sunny	Moderate	12:20	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.6	- -	-	11.0	- -	-	27.6
				Middle	1	27.9 27.9	27.9	7.9 7.9	7.9	22.2 22.3	22.3	79.3 80.1	79.7	5.5 5.6	5.6		11.2 10.7	11.0		25.7 29.5	27.6	
				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 (^oC) Value	Temperature Average	pH Value	pH Average	Salinity ppt Value	Salinity Average	DO Saturation (%) Value	DO Saturation Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen Average	Dissolved Oxygen DA*	Turbidity(NTU) Value	Turbidity Average	Turbidity DA*	Suspended Solids (mg/L) Value	Suspended Solids Average	Suspended Solids DA*
2-Jul-15	Fine	Moderate	18:54	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.3	- -	-	9.8	- -	-	6.9
				Middle	1	28.6 28.5	28.6	8.0 8.0	8.0	18.0 18.0	18.0	90.4 89.9	90.2	6.3 6.3	6.3		10.1 9.5	9.8		7.6 6.2	6.9	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
4-Jul-15	Sunny	Moderate	07:30	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.1	- -	-	9.2	- -	-	7.7
				Middle	0.7	28.4 28.4	28.4	7.6 7.6	7.6	31.1 31.1	31.1	93.6 93.3	93.5	6.1 6.1	6.1		9.2 9.2	9.2		7.2 8.1	7.7	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
6-Jul-15	Sunny	Moderate	09:28	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.9	- -	-	7.2	- -	-	4.4
				Middle	1	28.5 28.5	28.5	7.7 7.7	7.7	21.9 21.9	21.9	100.4 99.0	99.7	6.9 6.8	6.9		7.2 7.2	7.2		5.8 2.9	4.4	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
8-Jul-15	Sunny	Moderate	10:57	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.2	- -	-	11.4	- -	-	10.3
				Middle	0.6	28.4 28.4	28.4	8.0 8.0	8.0	25.8 25.8	25.8	74.8 74.1	74.5	5.2 5.1	5.2		11.3 11.5	11.4		7.6 12.9	10.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
10-Jul-15	Sunny	Moderate	13:52	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.0	- -	-	7.7	- -	-	5.1
				Middle	1.1	25.8 25.9	25.9	7.8 7.8	7.8	17.2 16.5	16.9	80.5 80.1	80.3	6.0 5.9	6.0		7.8 7.6	7.7		5.8 4.4	5.1	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
13-Jul-15	Sunny	Moderate	16:52	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.2	- -	-	7.3	- -	-	5.4
				Middle	1.1	28.8 28.5	28.7	7.8 7.9	7.9	21.9 22.0	22.0	79.7 79.7	79.7	5.2 5.2	5.2		7.2 7.3	7.3		6.7 4.0	5.4	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Jul-15	Fine	Moderate	18:40	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.9	- -	-	7.7	- -	-	9.9
				Middle	1.3	25.7 25.6	25.7	8.1 8.1	8.1	27.1 27.8	27.5	101.6 96.5	99.1	7.1 6.7	6.9		7.8 7.6	7.7		13.4 6.3	9.9	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
17-Jul-15	Sunny	Moderate	19:22	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.7	- -	-	12.7	- -	-	7.2
				Middle	1.1	27.1 26.8	27.0	7.8 7.9	7.9	32.0 32.1	32.1	85.4 85.3	85.4	5.7 5.7	5.7		14.1 11.3	12.7		7.4 7.0	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-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.5	- -	-		- -	-	
20-Jul-15	Cloudy	Moderate	08:16	Middle	0.9	28.0 28.0	28.0	8.0 8.0	8.0	29.5 29.6	29.6	98.3 97.6	98.0	6.5 6.5	6.5		9.8 9.5	9.7	9.7	11.2 5.1	8.2	8.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.6	- -	-		- -	-	
22-Jul-15	Sunny	Moderate	09:42	Middle	1	27.5 27.5	27.5	7.8 7.8	7.8	15.8 15.7	15.8	72.6 71.5	72.1	5.6 5.6	5.6		7.3 7.3	7.3	7.3	13.7 5.6	9.7	9.7
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.7	- -	-		- -	-	
24-Jul-15	Sunny	Moderate	10:36	Middle	1.1	27.7 27.7	27.7	7.9 7.8	7.9	21.6 20.7	21.2	80.6 81.3	81.0	5.6 5.7	5.7		4.2 5.1	4.7	4.7	10.9 8.8	9.9	9.9
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-		- -	-	
27-Jul-15	Sunny	Calm	16:22	Middle	0.8	29.1 29.1	29.1	8.1 8.1	8.1	28.7 28.8	28.8	100.6 99.9	100.3	7.0 7.0	7.0		9.1 9.8	9.5	9.5	6.4 7.7	7.1	7.1
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.8	- -	-		- -	-	
29-Jul-15	Fine	Moderate	18:30	Middle	0.8	27.9 27.9	27.9	8.1 8.1	8.1	22.9 22.9	22.9	98.2 97.5	97.9	6.8 6.7	6.8		11.5 11.2	11.4	11.4	26.7 26.5	26.6	26.6
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.1	- -	-		- -	-	
31-Jul-15	Fine	Moderate	18:44	Middle	1.3	27.9 27.8	27.9	8.0 8.0	8.0	22.7 23.4	23.1	89.4 85.4	87.4	6.2 5.9	6.1		10.2 9.9	10.1	10.1	28.7 25.7	27.2	27.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	

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

Water Quality Monitoring Results at SR3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.3	- -	-		- -	-	
2-Jul-15	Sunny	Moderate	11:37	Middle	1.1	28.8 28.1	28.5	8.0 8.0	8.0	18.1 18.1	18.1	90.1 89.1	89.6	6.3 6.3	6.3		9.5 9.2	9.4	9.4	6.4 6.3	6.4	6.4
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.5	- -	-		- -	-	
4-Jul-15	Sunny	Moderate	13:26	Middle	0.9	29.4 29.5	29.5	8.0 8.0	8.0	21.8 21.8	21.8	111.3 111.3	111.3	7.5 7.5	7.5		6.5 6.9	6.7	6.7	12.2 8.7	10.5	10.5
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-		- -	-	
6-Jul-15	Sunny	Moderate	15:18	Middle	1	27.3 27.4	27.4	7.7 7.7	7.7	25.1 24.9	25.0	101.8 101.3	101.6	7.0 7.0	7.0		9.4 8.7	9.1	9.1	4.9 3.5	4.2	4.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.5	- -	-		- -	-	
8-Jul-15	Sunny	Moderate	17:25	Middle	0.7	29.0 28.9	29.0	8.0 8.0	8.0	24.3 24.3	24.3	80.7 79.9	80.3	5.5 5.5	5.5		7.3 7.5	7.4	7.4	5.5 4.8	5.2	5.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.3	- -	-		- -	-	
10-Jul-15	Sunny	Moderate	08:04	Middle	0.8	26.3 26.7	26.5	8.0 8.0	8.0	14.8 14.7	14.8	98.7 99.1	98.9	7.3 7.3	7.3		8.6 7.8	8.2	8.2	3.7 3.4	3.6	3.6
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.4	- -	-		- -	-	
13-Jul-15	Sunny	Moderate	10:38	Middle	1.1	28.9 28.7	28.8	7.8 7.8	7.8	22.2 21.7	22.0	75.7 74.1	74.9	5.4 5.3	5.4		4.8 4.9	4.9	4.9	8.8 6.5	7.7	7.7
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.5	- -	-		- -	-	
15-Jul-15	Sunny	Moderate	11:30	Middle	1.1	25.8 25.7	25.8	8.2 8.2	8.2	29.2 31.2	30.2	97.4 92.3	94.9	6.7 6.3	6.5		10.4 10.9	10.7	10.7	7.6 8.4	8.0	8.0
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.4	- -	-		- -	-	
17-Jul-15	Sunny	Moderate	12:40	Middle	1.1	27.3 27.1	27.2	7.7 7.8	7.8	32.1 31.6	31.9	82.0 80.4	81.2	5.4 5.4	5.4		5.6 5.8	5.7	5.7	5.2 5.0	5.1	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 (^oC)		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*
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
20-Jul-15	Cloudy	Moderate	16:03	Middle	1.1	28.2 28.2	28.2	8.1 8.1	8.1	27.9 27.8	27.9	99.2 98.7	99.0	6.6 6.6	6.6	6.6	7.2 6.1	6.7	6.7	7.8 11.1	9.5	9.5
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
22-Jul-15	Sunny	Moderate	15:24	Middle	1	27.7 27.7	27.7	7.8 7.8	7.8	15.5 15.5	15.5	71.7 72.3	72.0	5.6 5.6	5.6	5.6	4.8 5.1	5.0	5.0	7.8 7.8	7.8	7.8
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
24-Jul-15	Fine	Moderate	17:44	Middle	1.1	27.8 27.8	27.8	7.9 8.1	8.0	20.8 22.6	21.7	84.8 84.1	84.5	5.9 5.8	5.9	5.9	6.5 6.4	6.5	6.5	10.8 13.7	12.3	12.3
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
27-Jul-15	Sunny	Calm	08:45	Middle	0.9	28.4 28.3	28.4	8.0 8.0	8.0	28.4 28.4	28.4	103.4 103.2	103.3	7.3 7.3	7.3	7.3	2.6 2.6	2.6	2.6	16.2 14.2	15.2	15.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
29-Jul-15	Sunny	Moderate	10:17	Middle	0.8	28.6 28.6	28.6	8.1 8.1	8.1	19.1 19.2	19.2	107.6 105.6	106.6	7.5 7.4	7.5	7.5	3.0 3.4	3.2	3.2	6.0 6.3	6.2	6.2
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
				Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
31-Jul-15	Sunny	Moderate	11:44	Middle	1.1	28.2 28.1	28.2	7.8 7.8	7.8	20.8 20.8	20.8	80.3 79.6	80.0	5.6 5.5	5.6	5.6	9.0 9.5	9.3	9.3	30.7 28.7	29.7	29.7
				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 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-Jul-15	Fine	Moderate	18:36	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.3	- -	-	8.9	- -	-	7.4
				Middle	1.1	28.7 28.7	28.7	8.0 8.0	8.0	18.0 18.0	18.0	89.4 89.9	89.7	6.3 6.3	6.3		8.8 9.0	8.9		6.7 8.0	7.4	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
4-Jul-15	Sunny	Moderate	07:10	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.6	- -	-	8.1	- -	-	7.5
				Middle	0.8	29.0 29.3	29.2	7.7 7.7	7.7	29.5 29.4	29.5	100.3 102.0	101.2	6.6 6.6	6.6		8.3 7.8	8.1		6.2 8.7	7.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
6-Jul-15	Sunny	Moderate	09:07	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-	6.0	- -	-	3.3
				Middle	1	28.7 28.7	28.7	7.6 7.6	7.6	21.3 21.3	21.3	101.5 101.8	101.7	7.0 7.0	7.0		6.1 5.9	6.0		3.7 2.9	3.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
8-Jul-15	Sunny	Moderate	10:40	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.7	- -	-	5.2	- -	-	5.5
				Middle	0.9	28.9 28.9	28.9	8.0 8.0	8.0	24.6 24.6	24.6	83.3 83.1	83.2	5.7 5.7	5.7		5.2 5.1	5.2		6.1 4.9	5.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
10-Jul-15	Sunny	Moderate	13:35	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.4	- -	-	6.6	- -	-	6.4
				Middle	0.9	26.9 27.3	27.1	8.1 8.1	8.1	14.4 14.4	14.4	99.8 101.6	100.7	7.4 7.4	7.4		6.2 6.9	6.6		8.3 4.5	6.4	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
13-Jul-15	Sunny	Moderate	16:31	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.2	- -	-	3.4	- -	-	5.6
				Middle	1.1	28.6 28.4	28.5	7.8 7.7	7.8	22.2 22.2	22.2	75.2 84.3	79.8	4.9 5.5	5.2		3.4 3.4	3.4		6.7 4.5	5.6	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Jul-15	Fine	Moderate	18:10	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.0	- -	-	9.8	- -	-	18.9
				Middle	1.1	26.0 25.9	26.0	8.2 8.2	8.2	29.9 28.9	29.4	102.1 99.9	101.0	7.0 6.9	7.0		9.9 9.7	9.8		9.4 28.4	18.9	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
17-Jul-15	Sunny	Moderate	19:01	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.7	- -	-	8.9	- -	-	9.7
				Middle	1.1	27.0 26.8	26.9	7.8 7.7	7.8	32.3 32.2	32.3	81.0 89.9	85.5	5.4 6.0	5.7		8.6 9.1	8.9		9.7 9.6	9.7	
				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 SR3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	08:02	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.5	- -	-	9.0	- -	-	8.5
				Middle	0.9	28.0 28.0	28.0	8.0 8.0	8.0	27.3 27.2	27.3	95.8 95.9	95.9	6.4 6.5	6.5		9.4 8.6	9.0		9.7 7.2	8.5	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
22-Jul-15	Sunny	Moderate	09:16	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.8	- -	-	4.5	- -	-	13.3
				Middle	1	27.7 27.7	27.7	7.7 7.8	7.8	15.8 15.8	15.8	77.3 73.0	75.2	5.9 5.7	5.8		4.3 4.6	4.5		13.5 13.0	13.3	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
24-Jul-15	Sunny	Moderate	10:55	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	5.9	- -	-	4.5	- -	-	9.1
				Middle	1	27.9 27.6	27.8	7.9 8.1	8.0	21.5 20.8	21.2	86.7 81.7	84.2	6.0 5.7	5.9		4.5 4.4	4.5		8.0 10.2	9.1	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
27-Jul-15	Sunny	Calm	16:46	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.1	- -	-	5.0	- -	-	4.6
				Middle	1.3	28.8 28.8	28.8	8.1 8.1	8.1	28.6 28.6	28.6	100.9 101.1	101.0	7.1 7.1	7.1		5.1 4.9	5.0		4.2 5.0	4.6	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
29-Jul-15	Fine	Moderate	18:43	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	7.1	- -	-	6.8	- -	-	5.7
				Middle	0.9	28.4 28.3	28.4	8.2 8.1	8.2	21.2 21.4	21.3	102.2 102.0	102.1	7.1 7.1	7.1		6.7 6.9	6.8		5.3 6.1	5.7	
				Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
31-Jul-15	Fine	Moderate	18:11	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	6.1	- -	-	10.2	- -	-	31.0
				Middle	1.1	26.6 29.0	27.8	7.8 8.0	7.9	23.2 23.7	23.5	86.6 89.3	88.0	6.1 6.0	6.1		10.3 10.1	10.2		32.0 30.0	31.0	
				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 (^oC)		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-Jul-15	Sunny	Moderate	12:43	Surface	1	29.5 29.5	29.5	7.9 7.9	7.9	17.9 17.8	17.9	93.3 93.6	93.5	6.5 6.5	6.5	6.5	4.6 4.6	4.6	4.7	6.5 4.7	5.6	5.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	27.7 27.7	27.7	7.9 7.9	7.9	23.0 23.1	23.1	75.4 74.4	74.9	5.2 5.2	5.2	5.2	4.8 4.6	4.7		5.3 4.7	5.0	
4-Jul-15	Sunny	Moderate	13:29	Surface	1	28.6 28.6	28.6	7.8 7.8	7.8	22.4 22.4	22.4	87.0 87.0	87.0	6.0 6.0	6.0	6.0	4.1 4.2	4.2	4.9	8.4 4.7	6.6	5.9
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	26.9 26.8	26.9	7.8 7.8	7.8	26.6 26.8	26.7	80.6 80.7	80.7	5.5 5.6	5.6	5.6	5.5 5.5	5.5		5.3 5.1	5.2	
6-Jul-15	Sunny	Moderate	15:15	Surface	1	28.0 28.0	28.0	7.9 7.9	7.9	21.3 21.3	21.3	98.4 98.6	98.5	6.8 6.9	6.9	6.9	6.7 6.8	6.8	8.5	4.4 3.3	3.9	4.1
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	26.8 26.9	26.9	7.8 7.8	7.8	24.6 26.0	25.3	81.9 82.1	82.0	5.7 5.7	5.7	5.7	10.1 10.1	10.1		3.5 4.8	4.2	
8-Jul-15	Sunny	Moderate	16:32	Surface	1	29.3 29.3	29.3	8.1 8.1	8.1	22.4 22.3	22.4	108.1 108.3	108.2	7.3 7.3	7.3	7.3	9.3 9.4	9.4	9.5	6.9 3.4	5.2	4.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	28.1 28.1	28.1	8.0 8.0	8.0	25.1 26.2	25.7	91.4 91.6	91.5	6.2 6.2	6.2	6.2	9.6 9.6	9.6		3.8 3.8	3.8	
10-Jul-15	Sunny	Moderate	08:18	Surface	1	25.8 25.8	25.8	7.8 7.8	7.8	16.3 16.3	16.3	80.6 80.6	80.6	6.0 6.0	6.0	6.0	4.6 4.6	4.6	4.6	12.1 4.6	8.4	6.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	25.8 25.8	25.8	7.8 7.8	7.8	23.5 23.5	23.5	82.7 82.5	82.6	5.9 5.9	5.9	5.9	4.6 4.4	4.5		5.3 4.3	4.8	
13-Jul-15	Sunny	Moderate	10:48	Surface	1	28.7 28.7	28.7	8.0 8.0	8.0	19.2 19.2	19.2	89.6 90.6	90.1	6.2 6.3	6.3	6.3	3.5 3.2	3.4	3.5	5.0 4.0	4.5	4.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.6	26.2 26.2	26.2	7.9 7.9	7.9	29.8 29.8	29.8	71.2 70.0	70.6	4.9 4.8	4.9	4.9	3.5 3.5	3.5		4.0 5.0	4.5	
15-Jul-15	Sunny	Moderate	11:48	Surface	1	25.9 25.9	25.9	8.3 8.2	8.3	28.3 28.8	28.6	93.8 91.7	92.8	6.5 6.3	6.4	6.4	1.9 1.9	1.9	2.8	8.8 8.7	8.8	13.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		0.0 0.0	0.0	
				Bottom	4	26.1 26.4	26.3	8.2 8.0	8.1	27.7 29.3	28.5	80.2 84.5	82.4	5.6 5.8	5.7	5.7	3.5 3.6	3.6		14.6 20.8	17.7	
17-Jul-15	Sunny	Moderate	12:57	Surface	1	28.1 28.1	28.1	7.9 7.8	7.9	30.5 30.4	30.5	83.6 83.6	83.6	5.9 5.9	5.9	5.9	5.4 4.8	5.1	7.9	4.4 8.6	6.5	6.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	27.0 27.0	27.0	7.8 7.8	7.8	32.4 32.4	32.4	76.8 75.7	76.3	5.4 5.3	5.4	5.4	10.6 10.6	10.6		5.5 7.7	6.6	

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

Water Quality Monitoring Results at SR6 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^{o}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*
20-Jul-15	Cloudy	Moderate	14:40	Surface	1	28.0 28.1	28.1	8.0 8.0	8.0	27.4 27.4	27.4	102.7 104.5	103.6	6.9 7.0	7.0	7.0	4.9 5.4	5.2	5.6	13.8 5.9	9.9	10.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.1	27.8 27.8	27.8	7.9 7.9	7.9	28.2 28.2	28.2	94.2 94.7	94.5	6.3 6.4	6.4	6.4	5.7 6.3	6.0		6.7 13.2	10.0	
22-Jul-15	Sunny	Moderate	15:44	Surface	1	27.4 27.3	27.4	7.9 7.9	7.9	16.3 16.4	16.4	74.9 76.8	75.9	5.4 5.6	5.5	5.5	4.7 4.7	4.7	6.3	4.8 4.8	4.8	5.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	26.9 26.9	26.9	7.9 7.9	7.9	19.7 19.7	19.7	77.6 77.3	77.5	5.6 5.5	5.6	5.6	8.0 7.7	7.9		5.9 5.9	5.9	
24-Jul-15	Fine	Moderate	17:24	Surface	1	27.6 27.5	27.6	7.7 7.7	7.7	16.0 16.0	16.0	84.0 83.8	83.9	6.1 6.1	6.1	6.1	6.0 6.0	6.0	5.6	5.7 3.2	4.5	3.5
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		0.0 0.0	0.0	
				Bottom	4.2	26.1 26.1	26.1	7.8 7.8	7.8	27.1 27.1	27.1	79.3 78.7	79.0	5.5 5.5	5.5	5.5	5.2 5.0	5.1		3.4 1.5	2.5	
27-Jul-15	Sunny	Calm	09:42	Surface	1	28.9 28.7	28.8	8.1 8.1	8.1	21.9 21.3	21.6	100.8 101.6	101.2	7.3 7.4	7.4	7.4	4.7 4.1	4.4	7.2	5.0 0.9	3.0	2.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	27.3 27.4	27.4	7.9 8.0	8.0	25.1 25.1	25.1	96.6 97.5	97.1	7.0 7.1	7.1	7.1	9.9 9.9	9.9		1.5 2.0	1.8	
29-Jul-15	Sunny	Moderate	10:12	Surface	1	28.4 28.4	28.4	8.3 8.1	8.2	22.7 23.6	23.2	100.2 97.1	98.7	6.9 6.6	6.8	6.8	5.5 5.6	5.6	6.5	5.5 2.1	3.8	3.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.2	28.5 28.4	28.5	8.3 8.1	8.2	31.7 31.3	31.5	102.6 106.9	104.8	6.7 7.0	6.9	6.9	8.2 6.6	7.4		3.7 3.0	3.4	
31-Jul-15	Sunny	Moderate	12:04	Surface	1	28.4 28.4	28.4	8.0 8.0	8.0	20.7 20.7	20.7	83.6 82.1	82.9	5.8 5.7	5.8	5.8	8.4 9.3	8.9	10.3	29.3 42.7	36.0	39.0
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3	27.5 27.8	27.7	8.0 8.0	8.0	22.7 21.9	22.3	79.2 77.9	78.6	5.5 5.4	5.5	5.5	11.6 11.5	11.6		49.7 34.0	41.9	

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

Water Quality Monitoring Results at SR6 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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-Jul-15	Fine	Moderate	18:55	Surface	1	29.1 29.1	29.1	8.0 8.0	8.0	17.8 17.8	17.8	95.0 95.2	95.1	6.6 6.6	6.6	6.6	5.6 5.7	5.7	5.8	4.9 4.5	4.7	5.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.4	27.9 28.0	28.0	7.9 7.9	7.9	20.5 21.7	21.1	78.8 78.9	78.9	5.5 5.5	5.5	5.5	5.9 5.9	5.9		5.2 6.6	5.9	
4-Jul-15	Sunny	Moderate	07:25	Surface	1	27.8 27.7	27.8	7.8 7.8	7.8	23.0 23.5	23.3	99.6 99.2	99.4	6.9 6.9	6.9	6.9	4.4 4.7	4.6	8.8	7.8 8.8	8.3	10.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.4	25.7 25.7	25.7	7.7 7.7	7.7	29.5 29.6	29.6	79.3 78.1	78.7	5.5 5.4	5.5	5.5	12.1 13.8	13.0		9.0 15.7	12.4	
6-Jul-15	Sunny	Moderate	09:13	Surface	1	28.3 28.4	28.4	7.8 7.8	7.8	21.4 21.4	21.4	96.7 96.9	96.8	6.7 6.7	6.7	6.7	5.5 5.5	5.5	8.1	4.6 9.5	7.1	7.1
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	26.7 26.6	26.7	7.8 7.8	7.8	27.6 27.7	27.7	78.8 77.8	78.3	5.4 5.3	5.4	5.4	10.8 10.5	10.7		4.2 9.9	7.1	
8-Jul-15	Sunny	Moderate	10:12	Surface	1	29.7 29.7	29.7	8.0 8.0	8.0	22.5 22.4	22.5	106.4 106.7	106.6	7.2 7.2	7.2	7.2	8.3 8.3	8.3	8.4	3.5 1.9	2.7	3.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	27.9 27.9	27.9	7.9 7.9	7.9	27.6 27.7	27.7	88.1 87.0	87.6	5.9 5.9	5.9	5.9	8.5 8.3	8.4		1.3 8.2	4.8	
10-Jul-15	Sunny	Moderate	13:05	Surface	1	26.0 26.0	26.0	7.8 7.8	7.8	18.8 18.8	18.8	78.5 79.0	78.8	5.7 5.8	5.8	5.8	4.4 4.3	4.4	4.8	7.2 6.4	6.8	7.7
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.1	25.4 25.4	25.4	7.8 7.8	7.8	26.6 26.6	26.6	73.7 72.3	73.0	5.2 5.1	5.2	5.2	5.1 5.0	5.1		4.2 12.7	8.5	
13-Jul-15	Sunny	Moderate	17:12	Surface	1	28.3 28.4	28.4	7.8 7.9	7.9	21.5 20.2	20.9	78.3 78.2	78.3	5.9 5.9	5.9	5.9	8.5 6.9	7.7	9.7	5.1 5.4	5.3	8.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	27.2 27.2	27.2	7.8 7.8	7.8	25.0 24.9	25.0	68.3 67.6	68.0	5.2 5.2	5.2	5.2	11.5 11.8	11.7		12.5 11.1	11.8	
15-Jul-15	Fine	Moderate	18:27	Surface	1	26.1 25.8	26.0	8.3 8.2	8.3	29.0 29.2	29.1	91.4 82.4	86.9	6.3 5.7	6.0	6.0	3.0 2.9	3.0	4.5	6.2 6.8	6.5	7.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	26.1 25.7	25.9	8.1 8.3	8.2	29.6 29.3	29.5	79.2 81.0	80.1	5.4 5.6	5.5	5.5	5.9 6.0	6.0		7.3 10.1	8.7	
17-Jul-15	Sunny	Moderate	19:18	Surface	1	27.6 27.6	27.6	7.9 7.9	7.9	30.8 30.8	30.8	85.2 85.5	85.4	6.1 6.1	6.1	6.1	4.2 4.3	4.3	7.0	6.0 9.4	7.7	7.6
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.3	26.6 26.8	26.7	7.9 7.9	7.9	32.2 31.6	31.9	77.3 76.9	77.1	5.5 5.5	5.5	5.5	9.9 9.4	9.7		5.0 10.0	7.5	

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

Water Quality Monitoring Results at SR6 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	08:10	Surface	1	28.2 28.1	28.2	8.0 8.0	8.0	27.3 27.3	27.3	105.3 105.3	105.3	7.1 7.1	7.1	7.1	5.4 5.7	5.6	6.4	13.2 6.7	10.0	8.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.1	27.8 27.7	27.8	8.0 7.9	8.0	27.5 27.5	27.5	96.4 95.7	96.1	6.5 6.5	6.5	6.5	6.8 7.4	7.1		6.7 6.3	6.5	
22-Jul-15	Sunny	Moderate	09:04	Surface	1	27.5 27.6	27.6	7.4 7.4	7.4	9.2 9.2	9.2	73.4 73.0	73.2	5.5 5.5	5.5	5.5	5.9 6.3	6.1	6.9	4.9 5.0	5.0	4.8
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.2	26.3 26.3	26.3	7.6 7.6	7.6	17.7 17.6	17.7	69.7 69.6	69.7	5.1 5.1	5.1	5.1	7.9 7.5	7.7		4.9 4.2	4.6	
24-Jul-15	Sunny	Moderate	11:11	Surface	1	27.6 27.6	27.6	7.9 7.9	7.9	16.0 15.9	16.0	86.9 86.6	86.8	6.3 6.2	6.3	6.3	6.9 7.1	7.0	9.3	3.7 2.5	3.1	4.1
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.5	26.2 26.2	26.2	8.0 8.0	8.0	23.9 23.9	23.9	70.7 70.4	70.6	5.0 5.0	5.0	5.0	11.5 11.4	11.5		5.1 5.0	5.1	
27-Jul-15	Sunny	Calm	15:57	Surface	1	28.2 28.2	28.2	8.1 8.1	8.1	21.2 20.6	20.9	103.3 103.6	103.5	7.6 7.6	7.6	7.6	4.2 4.3	4.3	7.0	2.6 4.0	3.3	3.4
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	4.6	27.2 27.4	27.3	7.9 8.0	8.0	24.2 24.2	24.2	95.4 95.0	95.2	7.0 7.0	7.0	7.0	9.9 9.4	9.7		2.2 4.5	3.4	
29-Jul-15	Fine	Moderate	17:24	Surface	1	28.5 28.3	28.4	8.3 7.9	8.1	22.9 22.1	22.5	98.5 97.8	98.2	6.7 6.7	6.7	6.7	3.7 4.1	3.9	6.1	5.0 5.5	5.3	6.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.1	28.3 28.5	28.4	8.0 8.3	8.2	30.1 31.3	30.7	103.7 104.0	103.9	6.8 6.8	6.8	6.8	8.2 8.3	8.3		4.6 10.0	7.3	
31-Jul-15	Fine	Moderate	18:32	Surface	1	28.1 28.0	28.1	8.0 8.0	8.0	22.2 22.2	22.2	85.7 86.2	86.0	5.9 6.0	6.0	6.0	15.5 15.7	15.6	16.1	44.3 39.7	42.0	44.3
				Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
				Bottom	3.1	27.6 27.6	27.6	8.0 8.0	8.0	23.3 23.3	23.3	79.6 78.3	79.0	5.5 5.4	5.5	5.5	16.3 16.6	16.5		46.7 46.3	46.5	

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

Water Quality Monitoring Results at SRA - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC) Value	Temperature (^oC) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
				Surface	1	29.2 27.8	28.5	8.0 7.9	8.0	18.0 18.0	18.0	92.5 90.2	91.4	6.4 6.4	6.4	6.3	8.9 8.8	8.9		4.2 4.0	4.1	
2-Jul-15	Sunny	Moderate	11:47	Middle	3	29.2 28.3	28.8	7.9 7.9	7.9	18.0 18.1	18.1	87.3 86.4	86.9	6.1 6.1	6.1		9.9 10.3	10.1	10.2	6.0 6.3	6.2	5.6
				Bottom	5	29.1 28.3	28.7	8.0 7.9	8.0	28.8 28.8	28.8	85.2 83.8	84.5	5.6 5.6	5.6	5.6	11.8 11.6	11.7		7.2 5.7	6.5	
				Surface	1	29.4 29.0	29.2	7.8 7.8	7.8	21.1 21.1	21.1	106.2 105.4	105.8	7.2 7.2	7.2	7.1	6.0 6.4	6.2		8.4 6.2	7.3	
4-Jul-15	Sunny	Moderate	13:33	Middle	3	27.9 27.8	27.9	7.8 7.7	7.8	25.0 26.0	25.5	101.5 101.8	101.7	6.9 6.9	6.9		10.1 10.5	10.3	9.6	6.0 9.2	7.6	7.5
				Bottom	5	25.8 25.8	25.8	7.8 7.7	7.8	28.7 28.4	28.6	78.4 77.9	78.2	5.4 5.4	5.4	5.4	12.4 12.4	12.4		8.5 6.5	7.5	
				Surface	1	27.4 27.5	27.5	7.7 7.8	7.8	24.8 24.6	24.7	100.5 101.4	101.0	6.9 7.0	7.0	7.0	8.5 8.1	8.3		3.2 4.8	4.0	
6-Jul-15	Sunny	Moderate	15:28	Middle	3	27.5 27.3	27.4	7.7 7.8	7.8	26.6 27.3	27.0	102.5 102.0	102.3	7.0 6.9	7.0		11.8 11.2	11.5	9.3	3.8 3.5	3.7	3.7
				Bottom	5	27.5 28.5	28.0	7.8 7.8	7.8	29.5 25.3	27.4	103.3 101.2	102.3	6.9 6.8	6.9	6.9	7.4 8.8	8.1		3.4 3.5	3.5	
				Surface	1	28.8 28.8	28.8	8.0 8.0	8.0	25.1 25.1	25.1	76.5 75.8	76.2	6.2 6.1	6.2	6.3	7.9 7.7	7.8		6.1 6.0	6.1	
8-Jul-15	Sunny	Moderate	17:15	Middle	3	28.0 28.0	28.0	8.0 8.0	8.0	26.0 26.0	26.0	64.0 63.4	63.7	6.3 6.3	6.3		11.0 11.3	11.2	10.6	4.2 10.5	7.4	7.4
				Bottom	5	27.7 27.6	27.7	8.0 8.0	8.0	26.7 26.9	26.8	56.1 56.4	56.3	5.7 5.7	5.7	5.7	12.9 12.6	12.8		7.9 9.2	8.6	
				Surface	1	26.6 26.3	26.5	8.1 8.0	8.1	15.1 15.2	15.2	78.7 77.6	78.2	5.8 5.8	5.8	5.5	10.9 10.8	10.9		5.2 3.4	4.3	
10-Jul-15	Sunny	Moderate	08:12	Middle	3.5	26.4 26.4	26.4	8.0 8.0	8.0	15.8 15.4	15.6	70.8 69.7	70.3	5.2 5.2	5.2		10.7 11.7	11.2	11.7	5.0 8.0	6.5	5.5
				Bottom	6	25.6 25.6	25.6	7.9 7.9	7.9	18.5 18.6	18.6	65.5 65.4	65.5	4.8 4.8	4.8	4.8	13.2 12.7	13.0		7.1 4.5	5.8	
				Surface	1	28.8 28.4	28.6	7.8 7.8	7.8	20.1 20.4	20.3	79.0 71.6	75.3	5.6 5.2	5.4	5.4	6.3 5.9	6.1		5.0 3.2	4.1	
13-Jul-15	Sunny	Moderate	10:48	Middle	3	28.5 28.5	28.5	7.9 7.9	7.9	23.8 24.5	24.2	79.4 77.3	78.4	5.7 5.0	5.4		7.2 7.4	7.3	7.1	4.4 3.1	3.8	3.7
				Bottom	5	28.9 28.4	28.7	7.8 7.9	7.9	31.6 31.0	31.3	84.6 72.1	78.4	5.4 4.7	5.1	5.1	7.8 7.7	7.8		2.4 4.0	3.2	
				Surface	1	25.9 25.8	25.9	8.3 8.3	8.3	31.6 30.7	31.2	88.4 81.2	84.8	6.0 5.6	5.8	5.5	7.4 7.6	7.5		9.6 5.3	7.5	
15-Jul-15	Sunny	Moderate	11:36	Middle	3.5	25.7 25.7	25.7	8.2 8.2	8.2	30.6 31.5	31.1	75.5 73.6	74.6	5.2 5.0	5.1		9.7 9.9	9.8	10.1	6.2 4.1	5.2	5.7
				Bottom	6	25.6 25.6	25.6	8.3 8.3	8.3	31.8 31.8	31.8	73.7 74.3	74.0	5.0 5.1	5.1	5.1	13.0 12.9	13.0		5.8 3.2	4.5	
				Surface	1	27.3 26.9	27.1	7.7 7.7	7.7	32.1 32.4	32.3	85.2 78.0	81.6	5.7 5.2	5.5	5.6	7.3 7.5	7.4		7.5 7.1	7.3	
17-Jul-15	Sunny	Moderate	12:50	Middle	3	26.9 26.9	26.9	7.8 7.8	7.8	31.8 32.4	32.1	85.6 83.6	84.6	5.7 5.6	5.7		3.9 3.7	3.8	6.3	12.8 6.6	9.7	7.8
				Bottom	5	27.3 26.8	27.1	7.7 7.8	7.8	32.6 31.9	32.3	90.7 78.4	84.6	6.0 5.2	5.6	5.6	7.7 7.8	7.8		5.6 7.1	6.4	

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

Water Quality Monitoring Results at SRA - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	15:53	Surface	1	28.1 28.2	28.2	8.1 8.1	8.1	27.8 27.8	27.8	106.0 105.7	105.9	7.1 7.1	7.1	7.1	9.5 9.7	9.6	10.1	17.0 8.7	12.9	11.3
				Middle	3.5	28.1 28.1	28.1	8.1 8.1	8.1	27.9 27.9	27.9	104.8 104.5	104.7	7.0 7.0	7.0		10.0 10.3	10.2		11.5 10.3	10.9	
				Bottom	6	28.2 28.2	28.2	8.1 8.1	8.1	27.9 27.9	27.9	104.3 104.0	104.2	7.0 7.0	7.0	7.0	10.2 10.8	10.5		9.3 10.8	10.1	
22-Jul-15	Sunny	Moderate	15:33	Surface	1	27.9 27.9	27.9	7.9 7.9	7.9	15.4 15.4	15.4	69.6 70.0	69.8	5.4 5.4	5.4	5.4	5.9 6.2	6.1	7.5	9.2 8.3	8.8	11.4
				Middle	4	26.6 26.6	26.6	7.9 7.9	7.9	17.9 17.9	17.9	69.1 68.2	68.7	5.3 5.3	5.3		7.2 7.0	7.1		18.7 11.0	14.9	
				Bottom	7	26.2 26.2	26.2	8.0 8.0	8.0	21.9 21.9	21.9	63.9 64.7	64.3	5.0 5.0	5.0	5.0	9.4 9.2	9.3		12.5 8.5	10.5	
24-Jul-15	Fine	Moderate	17:34	Surface	1	27.5 27.7	27.6	7.9 8.0	8.0	18.1 16.7	17.4	77.9 83.0	80.5	5.6 6.0	5.8	5.8	7.1 7.0	7.1	10.3	10.7 13.5	12.1	12.5
				Middle	3	27.9 27.7	27.8	7.9 7.7	7.8	23.2 24.4	23.8	83.7 83.2	83.5	5.8 5.7	5.8		10.8 9.6	10.2		12.2 9.2	10.7	
				Bottom	5	27.9 27.8	27.9	7.8 7.9	7.9	24.5 23.4	24.0	83.2 85.1	84.2	5.7 5.9	5.8	5.8	13.5 13.5	13.5		13.5 15.8	14.7	
27-Jul-15	Sunny	Calm	08:51	Surface	1	28.4 28.4	28.4	8.1 8.1	8.1	27.4 27.3	27.4	101.4 101.7	101.6	7.2 7.3	7.3	7.1	3.2 3.1	3.2	4.9	10.5 11.2	10.9	11.0
				Middle	3	28.2 28.3	28.3	8.0 8.0	8.0	29.0 28.3	28.7	96.3 96.1	96.2	6.8 6.8	6.8		4.3 3.9	4.1		12.3 12.4	12.4	
				Bottom	5	27.7 27.8	27.8	8.0 8.0	8.0	32.0 31.3	31.7	78.5 81.9	80.2	5.5 5.8	5.7	5.7	7.6 7.4	7.5		10.1 9.4	9.8	
29-Jul-15	Sunny	Moderate	10:22	Surface	1	28.2 28.2	28.2	8.1 8.1	8.1	19.3 19.3	19.3	99.7 98.5	99.1	7.0 6.9	7.0	6.8	4.2 4.2	4.2	7.0	6.0 6.4	6.2	6.7
				Middle	3.5	27.2 27.3	27.3	8.0 8.0	8.0	24.5 24.3	24.4	94.9 93.9	94.4	6.6 6.5	6.6		7.1 7.2	7.2		5.5 7.1	6.3	
				Bottom	6	25.2 25.3	25.3	7.9 7.9	7.9	33.0 32.6	32.8	97.9 98.5	98.2	6.7 6.7	6.7	6.7	9.5 9.4	9.5		7.9 7.5	7.7	
31-Jul-15	Sunny	Moderate	11:51	Surface	1	27.8 27.4	27.6	7.9 7.9	7.9	22.6 24.3	23.5	76.6 79.4	78.0	5.3 5.5	5.4	5.3	11.1 11.4	11.3	13.3	27.7 28.7	28.2	28.1
				Middle	5	27.6 28.3	28.0	7.9 7.9	7.9	22.5 20.4	21.5	72.5 73.4	73.0	5.0 5.1	5.1		12.5 13.1	12.8		28.0 29.8	28.9	
				Bottom	9	27.4 28.2	27.8	7.9 7.9	7.9	24.4 20.6	22.5	71.8 70.9	71.4	5.0 4.9	5.0	5.0	15.8 15.7	15.8		30.0 24.5	27.3	

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

Water Quality Monitoring Results at SRA - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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-Jul-15	Fine	Moderate	18:45	Surface	1	28.6 28.8	28.7	8.0 8.0	8.0	18.0 18.0	18.0	82.7 83.3	83.0	5.8 5.8	5.8	5.7	9.4 8.9	9.2	9.3	6.2 6.0	6.1	6.3
				Middle	3	27.2 27.1	27.2	8.0 8.0	8.0	18.0 18.0	18.0	76.4 76.0	76.2	5.5 5.5	5.5		8.8 9.5	9.2		6.5 6.7	6.6	
				Bottom	5	26.9 27.0	27.0	8.0 8.0	8.0	28.8 29.8	29.3	74.7 74.9	74.8	5.1 5.1	5.1	5.1	9.7 9.2	9.5		5.8 6.7	6.3	
4-Jul-15	Sunny	Moderate	07:18	Surface	1	29.1 28.9	29.0	7.7 7.7	7.7	29.9 30.1	30.0	100.4 99.8	100.1	6.5 6.5	6.5	6.3	10.6 11.0	10.8	11.6	5.4 3.8	4.6	5.3
				Middle	3.5	28.9 28.7	28.8	7.7 7.7	7.7	30.4 30.4	30.4	93.8 93.3	93.6	6.1 6.1	6.1		10.5 11.8	11.2		6.9 5.2	6.1	
				Bottom	6	28.1 28.0	28.1	7.6 7.6	7.6	33.4 33.4	33.4	78.0 77.3	77.7	5.1 5.0	5.1	5.1	12.9 12.6	12.8		5.2 5.4	5.3	
6-Jul-15	Sunny	Moderate	09:18	Surface	1	28.7 28.6	28.7	7.6 7.7	7.7	21.3 21.6	21.5	100.6 100.8	100.7	6.9 6.9	6.9	7.0	6.0 7.2	6.6	6.8	3.0 4.4	3.7	4.5
				Middle	3	28.7 28.7	28.7	7.7 7.7	7.7	23.3 23.5	23.4	103.1 103.1	103.1	7.0 7.0	7.0		6.0 6.9	6.5		5.7 6.2	6.0	
				Bottom	5	28.7 28.7	28.7	7.7 7.7	7.7	26.5 26.5	26.5	104.1 103.8	104.0	7.0 6.9	7.0	7.0	7.1 7.3	7.2		3.4 4.4	3.9	
8-Jul-15	Sunny	Moderate	10:47	Surface	1	29.2 29.2	29.2	8.0 8.0	8.0	24.0 24.0	24.0	81.2 81.2	81.2	7.2 7.2	7.2	6.7	7.7 7.9	7.8	8.6	8.5 6.8	7.7	11.4
				Middle	3	28.0 28.0	28.0	7.9 7.9	7.9	26.1 26.1	26.1	61.4 60.9	61.2	6.1 6.1	6.1		6.8 6.7	6.8		11.5 9.8	10.7	
				Bottom	5	27.6 27.6	27.6	7.9 7.9	7.9	27.3 27.3	27.3	54.0 53.3	53.7	5.3 5.3	5.3	5.3	11.1 11.2	11.2		15.0 16.5	15.8	
10-Jul-15	Sunny	Moderate	13:42	Surface	1	27.0 26.9	27.0	7.9 7.9	7.9	13.6 13.7	13.7	88.7 88.3	88.5	6.6 6.5	6.6	6.2	6.0 6.4	6.2	9.7	5.8 5.6	5.7	6.1
				Middle	3	25.5 25.4	25.5	7.8 7.8	7.8	17.7 18.5	18.1	78.5 78.5	78.5	5.8 5.8	5.8		10.6 10.6	10.6		6.0 6.1	6.1	
				Bottom	5	23.4 23.5	23.5	7.8 7.8	7.8	25.6 25.4	25.5	67.9 67.4	67.7	5.0 5.0	5.0	5.0	12.1 12.2	12.2		6.3 6.4	6.4	
13-Jul-15	Sunny	Moderate	16:40	Surface	1	28.7 28.7	28.7	7.8 7.8	7.8	20.3 20.1	20.2	81.6 85.6	83.6	5.3 5.5	5.4	5.4	4.4 4.5	4.5	5.0	4.0 7.0	5.5	7.3
				Middle	3	28.5 28.6	28.6	7.8 7.9	7.9	24.3 24.5	24.4	85.8 79.2	82.5	5.6 5.1	5.4		4.4 4.3	4.4		7.5 11.0	9.3	
				Bottom	5	28.6 28.9	28.8	8.0 7.9	8.0	27.3 27.1	27.2	78.8 84.7	81.8	5.1 5.5	5.3	5.3	6.0 6.1	6.1		5.8 8.3	7.1	
15-Jul-15	Fine	Moderate	18:20	Surface	1	25.9 25.8	25.9	8.1 8.2	8.2	27.2 26.8	27.0	96.9 97.1	97.0	6.8 6.8	6.8	6.7	7.9 7.8	7.9	11.0	16.4 20.9	18.7	21.6
				Middle	3.5	25.5 25.5	25.5	8.3 8.3	8.3	30.8 30.8	30.8	96.7 94.8	95.8	6.7 6.5	6.6		10.8 10.7	10.8		16.4 10.4	13.4	
				Bottom	6	25.4 25.4	25.4	8.2 8.3	8.3	32.4 32.2	32.3	88.5 86.8	87.7	6.0 5.9	6.0	6.0	14.2 14.3	14.3		37.5 27.9	32.7	
17-Jul-15	Sunny	Moderate	19:10	Surface	1	27.0 27.0	27.0	7.7 7.7	7.7	32.3 32.2	32.3	87.3 91.1	89.2	5.8 6.1	6.0	6.0	10.8 10.2	10.5	10.1	8.3 10.1	9.2	7.6
				Middle	3	26.8 26.9	26.9	7.8 7.8	7.8	32.3 32.5	32.4	91.3 85.0	88.2	6.1 5.7	5.9		10.3 9.5	9.9		7.2 5.2	6.2	
				Bottom	5	27.0 27.3	27.2	7.9 7.8	7.9	32.3 32.1	32.2	84.5 90.3	87.4	5.6 6.0	5.8	5.8	8.7 10.8	9.8		6.4 8.3	7.4	

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

Water Quality Monitoring Results at SRA - Mid-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*
20-Jul-15	Cloudy	Moderate	08:06	Surface	1	28.0 28.0	28.0	8.0 8.0	8.0	29.0 29.0	29.0	98.0 97.4	97.7	6.5 6.5	6.5	6.5	7.9 8.0	8.0	8.3	12.0 7.0	9.5	7.7
				Middle	3	28.0 28.0	28.0	8.0 8.0	8.0	28.9 28.4	28.7	96.7 97.2	97.0	6.5 6.5	6.5		7.9 8.5	8.2		6.2 7.3	6.8	
				Bottom	5	28.0 28.0	28.0	8.0 8.0	8.0	28.9 28.4	28.7	96.3 97.1	96.7	6.4 6.5	6.5	6.5	8.6 8.7	8.7		5.7 7.9	6.8	
22-Jul-15	Sunny	Moderate	09:26	Surface	1	27.9 27.9	27.9	7.9 7.9	7.9	15.4 15.4	15.4	72.3 70.3	71.3	5.6 5.5	5.6	5.5	5.8 5.9	5.9	7.4	12.4 10.8	11.6	10.3
				Middle	4	26.6 26.6	26.6	7.9 7.9	7.9	18.3 18.4	18.4	69.4 70.1	69.8	5.4 5.4	5.4		6.9 7.0	7.0		5.8 13.3	9.6	
				Bottom	7	26.2 26.2	26.2	7.9 7.9	7.9	22.8 22.9	22.9	62.7 61.5	62.1	4.9 4.9	4.9	4.9	9.4 9.2	9.3		10.0 9.3	9.7	
24-Jul-15	Sunny	Moderate	10:42	Surface	1	27.8 27.6	27.7	8.1 7.8	8.0	19.0 16.4	17.7	83.6 83.0	83.3	5.9 6.0	6.0	5.9	4.8 4.9	4.9	6.8	8.6 10.1	9.4	11.9
				Middle	3.5	27.9 27.7	27.8	7.8 7.9	7.9	22.7 23.3	23.0	80.7 82.2	81.5	5.6 5.7	5.7		6.4 6.1	6.3		12.5 12.7	12.6	
				Bottom	6	27.8 27.9	27.9	8.0 7.8	7.9	24.8 25.2	25.0	83.6 82.6	83.1	5.7 5.6	5.7	5.7	9.0 9.1	9.1		14.7 12.4	13.6	
27-Jul-15	Sunny	Calm	16:27	Surface	1	28.6 28.8	28.7	8.1 8.1	8.1	29.1 29.3	29.2	96.3 99.6	98.0	6.8 7.0	6.9	7.0	8.9 10.0	9.5	10.5	3.7 1.5	2.6	3.0
				Middle	3.5	28.6 28.5	28.6	8.0 8.0	8.0	29.4 29.3	29.4	99.2 98.8	99.0	7.0 7.0	7.0		10.4 10.4	10.4		2.9 3.3	3.1	
				Bottom	6	27.7 27.5	27.6	8.0 8.0	8.0	32.6 33.4	33.0	88.9 89.6	89.3	6.2 6.3	6.3	6.3	11.0 12.4	11.7		2.9 3.7	3.3	
29-Jul-15	Fine	Moderate	18:35	Surface	1	28.2 28.2	28.2	8.1 8.1	8.1	22.1 22.2	22.2	98.2 97.2	97.7	6.8 6.7	6.8	6.5	8.4 8.4	8.4	12.7	12.1 11.2	11.7	16.5
				Middle	3	26.6 26.6	26.6	8.0 8.0	8.0	28.4 27.5	28.0	89.1 86.5	87.8	6.1 6.0	6.1		13.9 14.0	14.0		13.0 15.0	14.0	
				Bottom	5	25.6 25.5	25.6	7.9 7.9	7.9	31.9 32.1	32.0	86.6 86.2	86.4	5.9 5.9	5.9	5.9	15.5 16.0	15.8		22.8 25.0	23.9	
31-Jul-15	Fine	Moderate	18:15	Surface	1	29.1 28.0	28.6	8.0 8.0	8.0	23.6 22.4	23.0	87.5 85.9	86.7	5.9 5.9	5.9	5.9	9.3 9.2	9.3	12.4	28.3 29.0	28.7	30.0
				Middle	4.5	27.7 27.7	27.7	8.1 8.2	8.2	26.4 26.4	26.4	85.7 84.1	84.9	5.8 5.7	5.8		12.2 12.1	12.2		27.3 31.7	29.5	
				Bottom	8	27.6 27.6	27.6	8.0 8.1	8.1	28.0 27.8	27.9	79.1 77.6	78.4	5.3 5.2	5.3	5.3	15.6 15.7	15.7		32.7 30.7	31.7	

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

Water Quality Monitoring Results at ST1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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-Jul-15	Sunny	Moderate	13:16	Surface	1	29.2 29.2	29.2	7.9 7.9	7.9	18.0 17.9	18.0	96.0 95.5	95.8	6.7 6.6	6.7	5.8	4.9 4.7	4.8	6.5	6.8 6.7	6.8	6.1
				Middle	5	27.5 27.5	27.5	7.8 7.9	7.9	23.5 23.4	23.5	69.3 68.9	69.1	4.8 4.8	4.8		4.9 4.9	4.9		6.7 5.7	6.2	
				Bottom	9	25.6 25.6	25.6	7.7 7.7	7.7	30.5 30.5	30.5	71.4 71.3	71.4	4.9 4.9	4.9	4.9	10.1 9.6	9.9		5.6 5.2	5.4	
4-Jul-15	Sunny	Moderate	13:57	Surface	1	28.9 28.9	28.9	7.8 7.8	7.8	22.8 22.8	22.8	102.2 101.5	101.9	6.9 6.9	6.9	6.1	3.5 3.3	3.4	4.4	6.7 6.3	6.5	5.3
				Middle	5.5	27.0 27.0	27.0	7.8 7.8	7.8	26.9 26.9	26.9	77.9 77.6	77.8	5.3 5.3	5.3		4.7 4.6	4.7		4.6 5.4	5.0	
				Bottom	10	25.3 25.3	25.3	7.7 7.7	7.7	30.9 30.9	30.9	75.0 74.3	74.7	5.2 5.1	5.2	5.2	4.9 5.0	5.0		5.7 3.2	4.5	
6-Jul-15	Sunny	Moderate	15:48	Surface	1	27.9 27.9	27.9	7.9 7.9	7.9	22.3 22.3	22.3	94.8 95.2	95.0	6.6 6.6	6.6	6.0	7.3 7.2	7.3	10.4	4.8 8.0	6.4	5.1
				Middle	5	27.1 27.1	27.1	7.8 7.8	7.8	24.7 24.8	24.8	77.2 76.5	76.9	5.4 5.3	5.4		10.2 11.0	10.6		7.1 2.2	4.7	
				Bottom	9	24.9 24.9	24.9	7.7 7.7	7.7	28.2 28.1	28.2	78.1 78.6	78.4	5.5 5.6	5.6	5.6	13.4 13.3	13.4		5.6 2.9	4.3	
8-Jul-15	Sunny	Moderate	16:59	Surface	1	29.2 29.2	29.2	8.1 8.1	8.1	23.2 23.2	23.2	104.3 104.9	104.6	7.0 7.1	7.1	6.9	9.8 9.7	9.8	11.3	2.2 2.5	2.4	4.3
				Middle	5	28.4 28.3	28.4	8.0 8.0	8.0	25.2 25.2	25.2	97.7 97.0	97.4	6.6 6.6	6.6		9.2 9.5	9.4		3.7 5.8	4.8	
				Bottom	9	26.0 26.1	26.1	7.9 7.9	7.9	33.1 33.0	33.1	76.4 75.5	76.0	5.1 5.1	5.1	5.1	14.7 14.6	14.7		9.0 2.3	5.7	
10-Jul-15	Sunny	Moderate	08:42	Surface	1	25.8 25.8	25.8	7.8 7.8	7.8	16.3 16.3	16.3	84.6 84.6	84.6	6.3 6.3	6.3	6.3	4.6 4.3	4.5	4.7	11.2 9.5	10.4	8.9
				Middle	5	25.3 25.3	25.3	7.8 7.8	7.8	18.1 18.0	18.1	83.3 83.3	83.3	6.2 6.2	6.2		4.2 4.2	4.2		8.3 5.4	6.9	
				Bottom	9	24.7 24.7	24.7	7.8 7.8	7.8	29.7 29.7	29.7	82.7 82.6	82.7	5.8 5.8	5.8	5.8	5.3 5.4	5.4		12.9 6.0	9.5	
13-Jul-15	Sunny	Moderate	11:12	Surface	1	29.5 29.5	29.5	8.2 8.2	8.2	14.9 14.9	14.9	89.6 89.9	89.8	6.8 6.8	6.8	6.3	4.4 3.8	4.1	4.3	2.6 3.4	3.0	3.4
				Middle	5.5	27.9 27.9	27.9	7.9 7.9	7.9	22.9 23.0	23.0	76.6 75.1	75.9	5.8 5.7	5.8		2.6 2.2	2.4		7.0 2.4	4.7	
				Bottom	10	25.8 25.9	25.9	7.9 7.9	7.9	30.5 30.4	30.5	63.5 62.5	63.0	4.9 4.8	4.9	4.9	6.6 6.3	6.5		2.5 2.2	2.4	
15-Jul-15	Sunny	Moderate	12:20	Surface	1	25.7 26.3	26.0	8.2 8.1	8.2	27.8 28.4	28.1	94.0 96.4	95.2	6.6 6.6	6.6	6.1	4.6 4.6	4.6	8.0	3.7 6.8	5.3	5.8
				Middle	5	26.1 25.7	25.9	8.1 8.0	8.1	28.7 29.2	29.0	77.0 83.2	80.1	5.3 5.8	5.6		8.4 9.1	8.8		5.7 8.0	6.9	
				Bottom	9	25.7 26.1	25.9	8.3 8.2	8.3	28.6 28.6	28.6	78.6 84.7	81.7	5.5 5.8	5.7	5.7	10.6 10.6	10.6		6.4 4.0	5.2	
17-Jul-15	Sunny	Moderate	13:28	Surface	1	27.6 27.6	27.6	7.9 7.9	7.9	32.3 32.3	32.3	86.4 85.5	86.0	6.1 6.0	6.1	5.8	5.1 4.9	5.0	7.5	4.8 6.6	5.7	6.6
				Middle	5	27.0 27.0	27.0	7.9 7.9	7.9	32.5 32.5	32.5	77.3 76.0	76.7	5.4 5.4	5.4		10.1 9.8	10.0		5.0 8.0	6.5	
				Bottom	9	26.8 26.8	26.8	7.9 7.9	7.9	32.9 32.9	32.9	75.2 75.1	75.2	5.3 5.3	5.3	5.3	7.7 7.5	7.6		7.5 7.4	7.5	

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

Water Quality Monitoring Results at ST1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^{o}C) Value	Temperature (^{o}C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
20-Jul-15	Cloudy	Moderate	15:04	Surface	1	28.0 28.0	28.0	7.9 7.9	7.9	27.5 27.5	27.5	98.7 98.3	98.5	6.6 6.6	6.6	6.4	3.8 4.0	3.9	6.1	10.3 8.7	9.5	8.9
				Middle	5	27.7 27.7	27.7	8.1 8.0	8.1	29.2 29.1	29.2	92.7 91.5	92.1	6.2 6.1	6.2		6.6 5.8	6.2		9.7 7.5	8.6	
				Bottom	9	27.7 27.7	27.7	8.0 8.0	8.0	29.8 29.8	29.8	83.8 82.0	82.9	5.6 5.5	5.6	5.6	7.8 8.8	8.3		9.4 7.5	8.5	
22-Jul-15	Sunny	Moderate	16:14	Surface	1	27.8 27.7	27.8	8.0 8.0	8.0	12.1 12.3	12.2	90.6 92.0	91.3	6.7 6.8	6.8	5.8	4.7 5.3	5.0	8.2	6.7 5.5	6.1	6.7
				Middle	5.5	25.3 25.3	25.3	8.0 8.0	8.0	28.5 28.5	28.5	68.7 67.1	67.9	4.8 4.7	4.8		5.9 6.4	6.2		6.5 5.9	6.2	
				Bottom	10	25.0 25.0	25.0	8.0 8.0	8.0	29.7 29.7	29.7	69.9 68.9	69.4	4.9 4.8	4.9	4.9	13.6 13.4	13.5		7.4 8.2	7.8	
24-Jul-15	Fine	Moderate	17:52	Surface	1	28.0 27.9	28.0	7.7 7.7	7.7	16.0 16.1	16.1	78.0 74.4	76.2	6.1 5.8	6.0	5.7	6.0 5.8	5.9	7.5	3.0 1.8	2.4	2.5
				Middle	5	26.8 26.8	26.8	7.9 7.9	7.9	27.9 27.9	27.9	70.3 69.9	70.1	5.3 5.3	5.3		6.8 7.2	7.0		2.5 2.5	2.5	
				Bottom	9	26.8 26.8	26.8	7.9 7.9	7.9	28.2 28.2	28.2	67.8 67.5	67.7	5.1 5.1	5.1	5.1	9.7 9.4	9.6		3.8 1.6	2.7	
27-Jul-15	Sunny	Calm	10:13	Surface	1	28.7 28.7	28.7	8.2 8.2	8.2	20.7 20.6	20.7	102.7 100.2	101.5	7.5 7.3	7.4	7.0	4.4 4.2	4.3	6.8	1.8 2.6	2.2	2.3
				Middle	5	28.7 28.7	28.7	8.1 8.1	8.1	25.7 25.1	25.4	93.2 91.4	92.3	6.6 6.5	6.6		9.4 9.1	9.3		3.0 1.6	2.3	
				Bottom	9	28.3 28.4	28.4	8.1 8.1	8.1	29.8 29.9	29.9	92.3 88.7	90.5	6.4 6.2	6.3	6.3	7.0 6.8	6.9		2.9 2.1	2.5	
29-Jul-15	Sunny	Moderate	10:36	Surface	1	28.5 28.6	28.6	8.2 8.3	8.3	23.6 23.8	23.7	97.6 103.5	100.6	6.7 7.0	6.9	6.8	4.5 4.6	4.6	6.5	4.7 3.2	4.0	3.9
				Middle	5	28.3 28.3	28.3	8.2 8.1	8.2	22.8 22.9	22.9	98.8 95.2	97.0	6.8 6.5	6.7		6.2 6.9	6.6		4.1 3.9	4.0	
				Bottom	9	28.5 28.3	28.4	8.2 8.0	8.1	31.0 31.3	31.2	102.0 103.9	103.0	6.7 6.8	6.8	6.8	8.1 8.2	8.2		4.6 2.9	3.8	
31-Jul-15	Sunny	Moderate	12:38	Surface	1	28.2 28.3	28.3	8.0 8.0	8.0	20.5 20.5	20.5	81.9 82.2	82.1	5.7 5.7	5.7	5.4	10.9 12.7	11.8	14.8	55.0 35.0	45.0	49.5
				Middle	4.5	27.1 27.2	27.2	8.0 8.0	8.0	23.9 23.5	23.7	71.8 74.8	73.3	5.0 5.2	5.1		15.9 13.0	14.5		37.0 39.7	38.4	
				Bottom	8	26.8 27.0	26.9	8.0 8.0	8.0	24.5 24.4	24.5	69.9 70.4	70.2	4.9 4.9	4.9	4.9	18.4 17.7	18.1		37.7 92.3	65.0	

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

Water Quality Monitoring Results at 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-Jul-15	Fine	Moderate	19:23	Surface	1	29.1 29.0	29.1	8.0 8.0	8.0	18.6 18.6	18.6	91.3 91.8	91.6	6.3 6.4	6.4	6.2	6.1 6.0	6.1	7.6	5.7 5.0	5.4	5.9
				Middle	5	28.2 28.1	28.2	8.0 8.0	8.0	20.6 20.6	20.6	84.9 84.2	84.6	5.9 5.9	5.9		5.5 5.8	5.7		3.9 3.7	3.8	
				Bottom	9	25.8 25.9	25.9	7.8 7.8	7.8	28.5 28.4	28.5	71.3 70.5	70.9	4.9 4.9	4.9	4.9	11.0 10.9	11.0		5.6 11.3	8.5	
4-Jul-15	Sunny	Moderate	07:52	Surface	1	27.3 27.3	27.3	7.7 7.7	7.7	23.9 24.0	24.0	81.8 80.1	81.0	5.7 5.6	5.7	5.7	3.5 3.7	3.6	7.5	7.3 7.0	7.2	11.4
				Middle	5	25.9 25.9	25.9	7.7 7.7	7.7	29.1 29.0	29.1	81.8 81.6	81.7	5.7 5.6	5.7		7.9 7.7	7.8		8.0 17.7	12.9	
				Bottom	9	25.7 25.7	25.7	7.7 7.7	7.7	29.4 29.4	29.4	77.6 77.2	77.4	5.4 5.3	5.4	5.4	11.7 10.5	11.1		12.8 15.2	14.0	
6-Jul-15	Sunny	Moderate	09:48	Surface	1	28.1 28.1	28.1	7.8 7.8	7.8	21.6 21.5	21.6	99.4 99.1	99.3	6.9 6.9	6.9	6.3	5.9 5.6	5.8	8.0	3.4 8.1	5.8	5.9
				Middle	5	26.5 26.5	26.5	7.7 7.8	7.8	27.1 27.1	27.1	80.8 81.9	81.4	5.6 5.7	5.7		8.8 9.9	9.4		4.9 4.5	4.7	
				Bottom	9	24.6 24.6	24.6	7.7 7.7	7.7	29.6 29.5	29.6	76.8 78.3	77.6	5.4 5.5	5.5	5.5	9.1 8.5	8.8		5.3 8.9	7.1	
8-Jul-15	Sunny	Moderate	10:33	Surface	1	29.4 29.4	29.4	8.0 8.0	8.0	22.6 22.5	22.6	109.1 108.7	108.9	7.4 7.3	7.4	6.5	8.6 8.4	8.5	10.2	4.2 5.9	5.1	4.0
				Middle	5	27.7 27.7	27.7	7.9 7.9	7.9	28.0 28.0	28.0	81.7 81.3	81.5	5.5 5.5	5.5		8.6 8.6	8.6		4.2 3.0	3.6	
				Bottom	9	25.8 25.8	25.8	7.8 7.8	7.8	35.1 35.1	35.1	78.0 77.9	78.0	5.2 5.2	5.2	5.2	13.8 13.3	13.6		3.1 3.5	3.3	
10-Jul-15	Sunny	Moderate	13:29	Surface	1	25.9 25.9	25.9	7.8 7.8	7.8	18.8 18.8	18.8	76.4 76.6	76.5	5.6 5.6	5.6	5.5	4.4 4.3	4.4	6.6	5.5 9.8	7.7	7.6
				Middle	5	25.1 25.0	25.1	7.8 7.8	7.8	20.6 20.6	20.6	72.9 70.2	71.6	5.4 5.2	5.3		4.1 4.1	4.1		7.5 7.0	7.3	
				Bottom	9	24.8 24.8	24.8	7.8 7.8	7.8	28.2 28.2	28.2	70.7 69.6	70.2	5.0 4.9	5.0	5.0	11.5 10.8	11.2		5.5 9.8	7.7	
13-Jul-15	Sunny	Moderate	17:39	Surface	1	29.6 29.5	29.6	7.9 7.9	7.9	19.5 19.7	19.6	77.1 76.9	77.0	5.8 5.8	5.8	5.6	5.1 4.9	5.0	6.7	4.3 4.7	4.5	4.9
				Middle	5	27.7 27.7	27.7	7.8 7.8	7.8	22.9 22.9	22.9	70.6 69.1	69.9	5.4 5.3	5.4		5.5 6.0	5.8		3.8 5.6	4.7	
				Bottom	9	26.5 26.5	26.5	7.9 7.9	7.9	27.3 27.3	27.3	66.0 65.1	65.6	5.1 5.0	5.1	5.1	9.3 9.3	9.3		4.9 6.0	5.5	
15-Jul-15	Fine	Moderate	19:00	Surface	1	26.2 26.3	26.3	8.3 8.2	8.3	28.6 28.1	28.4	93.4 99.8	96.6	6.4 6.9	6.7	6.2	3.4 3.5	3.5	7.8	5.4 7.3	6.4	4.9
				Middle	5	26.4 25.9	26.2	8.1 8.3	8.2	28.2 28.0	28.1	77.9 81.7	79.8	5.4 5.7	5.6		6.3 7.3	6.8		2.2 4.7	3.5	
				Bottom	9	25.8 25.9	25.9	8.2 8.3	8.3	28.9 28.1	28.5	77.2 81.4	79.3	5.3 5.7	5.5	5.5	12.6 13.7	13.2		5.4 3.9	4.7	
17-Jul-15	Sunny	Moderate	19:50	Surface	1	27.1 27.1	27.1	7.9 7.9	7.9	32.5 32.5	32.5	84.7 84.7	84.7	6.0 6.0	6.0	5.8	5.1 5.3	5.2	7.4	6.7 6.2	6.5	8.6
				Middle	5.5	26.5 26.5	26.5	7.9 7.9	7.9	32.7 32.7	32.7	78.9 77.8	78.4	5.6 5.5	5.6		8.8 8.9	8.9		6.4 14.7	10.6	
				Bottom	10	26.2 26.2	26.2	7.9 7.9	7.9	33.3 33.2	33.3	77.0 77.0	77.0	5.5 5.5	5.5	5.5	8.0 7.9	8.0		7.3 10.3	8.8	

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

Water Quality Monitoring Results at ST1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	08:34	Surface	1	28.1 28.1	28.1	8.0 8.0	8.0	27.3 27.3	27.3	102.2 102.1	102.2	6.9 6.9	6.9	6.5	5.7 5.5	5.6	6.2	13.3 10.5	11.9	9.8
				Middle	5	27.7 27.6	27.7	8.0 8.0	8.0	29.2 29.1	29.2	89.5 90.4	90.0	6.0 6.1	6.1		5.5 6.0	5.8		12.2 9.0	10.6	
				Bottom	9	27.5 27.5	27.5	7.9 8.0	8.0	29.7 29.7	29.7	79.5 80.2	79.9	5.3 5.4	5.4	5.4	7.1 7.4	7.3		7.3 6.5	6.9	
22-Jul-15	Sunny	Moderate	09:41	Surface	1	28.0 28.0	28.0	7.7 7.7	7.7	14.0 14.1	14.1	76.9 77.5	77.2	5.6 5.6	5.6	5.8	6.6 6.8	6.7	9.2	5.0 3.7	4.4	3.5
				Middle	5.5	27.3 27.3	27.3	7.8 7.8	7.8	17.1 16.9	17.0	82.9 82.7	82.8	6.0 6.0	6.0		7.3 7.5	7.4		2.5 2.7	2.6	
				Bottom	10	26.1 26.1	26.1	7.7 7.7	7.7	18.8 18.7	18.8	72.7 72.9	72.8	5.3 5.3	5.3	5.3	13.7 13.5	13.6		3.7 3.5	3.6	
24-Jul-15	Sunny	Moderate	11:40	Surface	1	27.1 27.0	27.1	7.9 7.9	7.9	16.2 15.9	16.1	79.0 78.2	78.6	6.4 6.3	6.4	6.1	6.9 6.9	6.9	7.5	3.5 3.8	3.7	3.1
				Middle	5	26.6 26.6	26.6	7.9 8.0	8.0	20.9 20.6	20.8	77.2 75.9	76.6	5.8 5.8	5.8		6.9 6.9	6.9		3.2 4.3	3.8	
				Bottom	9	26.0 26.0	26.0	8.0 8.0	8.0	24.6 23.2	23.9	69.9 68.5	69.2	5.9 5.9	5.9	5.9	8.8 8.5	8.7		1.8 1.9	1.9	
27-Jul-15	Sunny	Calm	16:28	Surface	1	27.8 27.8	27.8	8.2 8.1	8.2	20.9 20.8	20.9	102.8 102.8	102.8	7.6 7.6	7.6	7.4	5.1 5.3	5.2	7.4	3.2 2.5	2.9	3.1
				Middle	5	27.1 27.1	27.1	8.1 8.1	8.1	26.0 25.4	25.7	97.0 95.9	96.5	7.1 7.0	7.1		8.8 8.9	8.9		2.9 2.8	2.9	
				Bottom	9	26.8 26.9	26.9	8.0 8.0	8.0	30.2 30.2	30.2	95.1 95.1	95.1	6.8 6.8	6.8	6.8	8.0 7.9	8.0		3.1 3.6	3.4	
29-Jul-15	Fine	Moderate	17:47	Surface	1	28.5 28.3	28.4	7.9 8.1	8.0	23.9 22.3	23.1	98.0 96.6	97.3	6.7 6.7	6.7	6.7	3.3 3.7	3.5	6.3	4.6 5.5	5.1	5.3
				Middle	5	28.3 28.5	28.4	8.2 8.0	8.1	23.0 21.8	22.4	95.3 98.7	97.0	6.5 6.8	6.7		6.4 6.6	6.5		3.2 3.7	3.5	
				Bottom	9	28.4 28.4	28.4	8.2 8.1	8.2	30.6 31.4	31.0	99.3 100.5	99.9	6.5 6.6	6.6	6.6	8.9 8.9	8.9		3.4 11.1	7.3	
31-Jul-15	Fine	Moderate	19:05	Surface	1	28.0 28.1	28.1	8.0 8.0	8.0	22.1 22.1	22.1	85.3 87.3	86.3	5.9 6.0	6.0	5.7	11.0 9.1	10.1	17.0	49.0 49.7	49.4	41.9
				Middle	4.5	27.7 27.7	27.7	8.0 8.0	8.0	23.3 23.3	23.3	76.0 76.8	76.4	5.3 5.3	5.3		19.3 19.0	19.2		45.3 42.3	43.8	
				Bottom	8	27.1 27.1	27.1	8.0 8.0	8.0	24.4 24.4	24.4	72.7 72.9	72.8	5.0 5.1	5.1	5.1	21.3 22.3	21.8		35.0 29.7	32.4	

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 (^oC) Value	Temperature (^oC) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
2-Jul-15	Sunny	Moderate	13:01	Surface	1	29.5	29.5	7.9	7.9	17.8	17.8	94.5	94.6	6.5	6.6	6.2	4.8	4.9	7.2	9.0	7.9	6.0
						29.5		7.9		17.8		94.7		6.6			4.9			6.8		
				Middle	4	28.7	28.7	7.9	7.9	19.5	19.6	83.5	83.0	5.8	5.8		5.0	5.2		5.2	5.5	
						28.6		7.9		19.6		82.4		5.7			5.4			5.7		
				Bottom	7	25.9	25.9	7.7	7.7	29.2	29.2	73.8	73.4	5.1	5.1	5.1	11.5	11.5		3.7	4.5	
						25.9		7.7		29.2		73.0		5.0			11.5			5.3		
4-Jul-15	Sunny	Moderate	13:47	Surface	1	28.6	28.6	7.8	7.8	22.4	22.4	87.3	87.3	6.0	6.0	5.8	4.2	4.2	5.4	4.9	4.4	4.9
						28.6		7.8		22.4		87.2		6.0			4.1			3.9		
				Middle	4.5	27.2	27.3	7.8	7.8	26.2	26.1	81.6	81.8	5.6	5.6		4.1	4.3		3.6	4.7	
						27.3		7.8		26.0		81.9		5.6			4.4			5.7		
				Bottom	8	25.9	25.9	7.7	7.7	29.4	29.5	74.5	74.1	5.1	5.1	5.1	7.4	7.7		5.0	5.5	
						25.8		7.7		29.5		73.6		5.1			8.0			6.0		
6-Jul-15	Sunny	Moderate	15:31	Surface	1	28.0	28.0	7.9	7.9	21.4	21.4	97.9	98.2	6.8	6.8	6.4	7.0	6.9	10.6	4.1	4.1	6.4
						28.0		7.9		21.4		98.4		6.8			6.7			4.1		
				Middle	4	27.5	27.5	7.8	7.8	22.8	23.1	87.6	86.6	6.1	6.0		11.3	11.0		9.3	9.3	
						27.4		7.8		23.3		85.5		5.9			10.6			9.3		
				Bottom	7	24.7	24.7	7.8	7.8	27.9	27.9	76.5	76.2	5.4	5.4	5.4	13.0	13.8		7.9	5.7	
						24.7		7.8		27.9		75.8		5.4			14.6			3.5		
8-Jul-15	Sunny	Moderate	16:43	Surface	1	29.3	29.3	8.1	8.1	22.5	22.5	107.6	107.6	7.3	7.3	7.1	9.5	9.4	10.8	1.0	2.3	4.0
						29.3		8.1		22.4		107.6		7.3			9.3			3.5		
				Middle	4	28.8	28.8	8.0	8.0	23.6	23.8	99.9	99.7	6.8	6.8		9.8	9.6		3.6	2.9	
						28.7		8.0		24.0		99.4		6.7			9.4			2.2		
				Bottom	7	25.8	25.8	7.9	7.9	33.7	33.7	75.5	75.2	5.1	5.1	5.1	13.5	13.4		3.1	6.9	
						25.8		7.9		33.6		74.8		5.0			13.3			10.6		
10-Jul-15	Sunny	Moderate	08:29	Surface	1	25.9	25.9	7.8	7.8	16.2	16.2	80.6	80.7	6.0	6.0	6.0	4.4	4.5	4.5	5.5	8.9	8.0
						25.9		7.8		16.2		80.7		6.0			4.6			12.3		
				Middle	4	25.8	25.8	7.8	7.8	16.3	16.3	80.0	80.0	5.9	5.9		4.7	4.8		7.5	7.4	
						25.8		7.8		16.3		80.0		5.9			4.8			7.2		
				Bottom	7	25.4	25.4	7.8	7.8	25.6	25.5	78.3	78.2	5.6	5.6	5.6	4.2	4.3		8.5	7.6	
						25.4		7.8		25.4		78.1		5.6			4.3			6.7		
13-Jul-15	Sunny	Moderate	11:00	Surface	1	28.7	28.7	8.0	8.0	19.2	19.3	88.7	88.9	6.7	6.7	5.9	2.9	3.0	6.3	4.5	3.9	4.5
						28.7		8.0		19.3		89.0		6.7			3.0			3.2		
				Middle	4	25.9	26.0	7.9	7.9	30.5	30.5	67.5	67.1	5.1	5.1		5.3	5.3		4.7	5.4	
						26.0		7.9		30.4		66.6		5.1			5.3			6.0		
				Bottom	7	25.8	25.8	7.9	7.9	31.0	31.0	63.1	63.1	4.8	4.8	4.8	10.7	10.5		4.0	4.3	
						25.8		7.9		31.0		63.0		4.8			10.3			4.6		
15-Jul-15	Sunny	Moderate	12:04	Surface	1	25.9	26.0	8.1	8.1	29.8	29.5	97.7	94.6	6.7	6.5	5.9	5.1	5.1	9.0	3.3	3.5	4.8
						26.1		8.1		29.1		91.4		6.3			5.0			3.7		
				Middle	4	25.7	26.1	8.1	8.1	27.8	28.2	75.1	76.9	5.2	5.3		9.4	9.5		4.1	4.1	
						26.4		8.0		28.6		78.6		5.4			9.6			4.0		
				Bottom	7	26.0	26.1	8.1	8.2	30.0	30.1	81.8	81.7	5.6	5.6	5.6	12.3	12.4		8.7	6.7	
						26.2		8.3		30.1		81.6		5.6			12.5			4.7		
17-Jul-15	Sunny	Moderate	13:15	Surface	1	28.1	28.1	7.9	7.9	30.4	30.5	84.4	84.3	6.0	6.0	5.8	4.7	4.6	8.4	5.6	7.4	6.5
						28.0		7.9		30.5		84.1		6.0			4.4			9.1		
				Middle	4	27.1	27.1	7.8	7.8	32.3	32.3	80.3	79.2	5.6	5.6		9.0	8.8		7.1	5.2	
						27.0		7.8		32.3		78.1		5.5			8.5			3.3		
				Bottom	7	26.7	26.7	7.9	7.9	33.5	33.5	71.2	71.1	5.0	5.0	5.0	11.7	11.7		8.3	6.8	
						26.7		7.9		33.4		71.0		5.0			11.7			5.3		

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

Water Quality Monitoring Results at ST2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
				Surface	1	28.0 28.1	28.1	8.0 8.0	8.0	27.5 27.5	27.5	100.1 99.0	99.6	6.7 6.6	6.7	6.6	5.3 5.6	5.5		7.1 6.9	7.0	
20-Jul-15	Cloudy	Moderate	14:50	Middle	3.5	27.8 27.7	27.8	7.8 7.9	7.9	28.4 28.5	28.5	93.6 94.8	94.2	6.3 6.4	6.4		5.0 5.4	5.2	5.5	8.6 7.6	8.1	7.4
				Bottom	6	27.7 27.7	27.7	7.9 8.0	8.0	29.7 29.7	29.7	89.8 90.3	90.1	6.0 6.0	6.0	6.0	5.2 6.4	5.8		6.8 7.5	7.2	
				Surface	1	27.4 27.4	27.4	7.9 7.9	7.9	14.4 14.4	14.4	78.0 77.1	77.6	5.7 5.6	5.7	5.5	5.0 4.5	4.8		6.7 6.3	6.5	
22-Jul-15	Sunny	Moderate	16:03	Middle	4.5	27.1 27.1	27.1	7.9 7.9	7.9	17.2 17.2	17.2	73.3 73.7	73.5	5.3 5.3	5.3		6.1 6.4	6.3	7.4	6.1 8.9	7.5	6.7
				Bottom	8	26.4 26.4	26.4	8.0 8.0	8.0	23.4 23.4	23.4	68.4 69.0	68.7	4.8 4.9	4.9	4.9	10.7 11.2	11.0		6.0 6.0	6.0	
				Surface	1	27.6 27.4	27.5	7.7 7.7	7.7	15.6 15.8	15.7	84.2 83.5	83.9	6.1 6.1	6.1	5.8	6.1 6.1	6.1		2.8 4.4	3.6	
24-Jul-15	Fine	Moderate	17:40	Middle	4	26.5 26.5	26.5	7.8 7.8	7.8	24.6 24.6	24.6	77.2 77.2	77.2	5.4 5.4	5.4		4.8 4.7	4.8	6.0	5.0 5.4	5.2	4.2
				Bottom	7	25.9 26.1	26.0	7.9 7.9	7.9	28.3 27.0	27.7	72.5 71.3	71.9	5.0 5.0	5.0	5.0	7.3 6.6	7.0		3.7 3.7	3.7	
				Surface	1	28.9 28.9	28.9	8.2 8.2	8.2	20.3 20.1	20.2	101.3 103.6	102.5	7.4 7.5	7.5	7.1	4.0 3.7	3.9		2.2 1.5	1.9	
27-Jul-15	Sunny	Calm	10:00	Middle	4	28.7 28.7	28.7	8.1 8.1	8.1	26.7 26.6	26.7	95.3 94.5	94.9	6.7 6.7	6.7		8.3 7.8	8.1	7.7	3.2 3.0	3.1	2.4
				Bottom	7	27.3 27.2	27.3	8.0 8.1	8.1	30.4 31.1	30.8	88.2 92.4	90.3	6.2 6.5	6.4	6.4	11.0 11.0	11.0		2.6 1.6	2.1	
				Surface	1	28.4 28.3	28.4	7.9 8.2	8.1	22.4 23.1	22.8	101.5 101.4	101.5	7.0 6.9	7.0	6.8	5.8 5.8	5.8		3.6 4.6	4.1	
29-Jul-15	Sunny	Moderate	10:23	Middle	3.5	28.4 28.5	28.5	8.0 8.1	8.1	24.0 23.2	23.6	96.7 95.7	96.2	6.6 6.5	6.6		6.2 6.3	6.3	6.8	4.4 4.8	4.6	4.1
				Bottom	6	28.3 28.5	28.4	8.2 8.3	8.3	29.5 30.3	29.9	99.2 105.5	102.4	6.6 6.9	6.8	6.8	8.1 8.6	8.4		3.4 4.0	3.7	
				Surface	1	28.4 28.4	28.4	8.0 8.0	8.0	20.6 20.5	20.6	81.4 81.2	81.3	5.6 5.6	5.6	5.5	8.9 8.2	8.6		55.3 87.7	71.5	
31-Jul-15	Sunny	Moderate	12:21	Middle	3.5	27.5 27.5	27.5	8.0 8.0	8.0	22.7 22.8	22.8	78.1 78.0	78.1	5.4 5.4	5.4		16.8 18.4	17.6	16.5	37.0 43.3	40.2	48.9
				Bottom	6	27.2 27.3	27.3	8.0 8.0	8.0	22.7 22.4	22.6	71.6 72.1	71.9	5.0 5.0	5.0	5.0	22.4 24.4	23.4		34.7 35.3	35.0	

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

Water Quality Monitoring Results at ST2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
2-Jul-15	Fine	Moderate	19:08	Surface	1	29.1 29.1	29.1	8.0 8.0	8.0	17.9 17.9	17.9	94.5 94.5	94.5	6.6 6.6	6.6	6.4	5.8 5.6	5.7	7.0	4.8 5.3	5.1	5.7
				Middle	4	28.6 28.5	28.6	8.0 8.0	8.0	19.0 19.4	19.2	87.0 86.5	86.8	6.1 6.0	6.1		6.1 5.7	5.9		7.7 5.0	6.4	
				Bottom	7	25.6 25.7	25.7	7.8 7.8	7.8	29.1 29.1	29.1	70.4 69.7	70.1	4.9 4.8	4.9	4.9	9.5 9.4	9.5		6.2 5.2	5.7	
4-Jul-15	Sunny	Moderate	07:41	Surface	1	27.9 27.8	27.9	7.8 7.8	7.8	22.7 22.9	22.8	83.6 83.3	83.5	5.8 5.8	5.8	5.7	4.6 4.3	4.5	9.1	7.8 10.9	9.4	14.6
				Middle	4	25.7 25.8	25.8	7.7 7.7	7.7	29.5 29.2	29.4	81.0 79.8	80.4	5.6 5.5	5.6		9.1 9.0	9.1		13.2 13.0	13.1	
				Bottom	7	25.6 25.6	25.6	7.7 7.7	7.7	29.9 29.9	29.9	74.4 73.6	74.0	5.1 5.1	5.1	5.1	13.7 13.8	13.8		26.6 16.1	21.4	
6-Jul-15	Sunny	Moderate	09:31	Surface	1	28.3 28.4	28.4	7.8 7.8	7.8	21.4 21.3	21.4	97.9 98.3	98.1	6.8 6.8	6.8	6.3	5.8 5.9	5.9	8.7	2.6 4.2	3.4	3.7
				Middle	4	27.6 27.5	27.6	7.8 7.8	7.8	23.4 23.6	23.5	82.3 84.5	83.4	5.7 5.9	5.8		9.0 9.5	9.3		4.0 3.4	3.7	
				Bottom	7	24.9 24.9	24.9	7.7 7.7	7.7	27.0 27.0	27.0	73.6 72.9	73.3	5.2 5.2	5.2	5.2	10.8 10.8	10.8		5.5 2.4	4.0	
8-Jul-15	Sunny	Moderate	10:21	Surface	1	29.6 29.7	29.7	8.0 8.0	8.0	22.4 22.4	22.4	107.7 107.9	107.8	7.2 7.3	7.3	6.9	8.5 8.6	8.6	10.9	5.6 3.3	4.5	3.6
				Middle	4	28.8 28.8	28.8	8.0 7.9	8.0	24.1 24.2	24.2	96.3 95.1	95.7	6.5 6.4	6.5		8.7 9.1	8.9		3.5 2.1	2.8	
				Bottom	7	26.1 26.1	26.1	7.8 7.8	7.8	33.8 33.8	33.8	80.5 79.6	80.1	5.4 5.3	5.4	5.4	15.2 15.2	15.2		3.0 4.0	3.5	
10-Jul-15	Sunny	Moderate	13:15	Surface	1	25.9 25.9	25.9	7.8 7.8	7.8	18.8 18.8	18.8	78.0 78.3	78.2	5.7 5.7	5.7	5.7	4.9 4.4	4.7	6.0	5.0 6.0	5.5	8.3
				Middle	4	25.3 25.3	25.3	7.8 7.8	7.8	19.8 19.9	19.9	77.1 75.4	76.3	5.7 5.5	5.6		5.4 5.3	5.4		7.9 8.1	8.0	
				Bottom	7	24.8 24.8	24.8	7.8 7.8	7.8	28.1 28.2	28.2	73.5 71.5	72.5	5.2 5.1	5.2	5.2	7.6 8.0	7.8		15.2 7.4	11.3	
13-Jul-15	Sunny	Moderate	17:27	Surface	1	28.3 28.2	28.3	7.9 7.8	7.9	20.9 21.0	21.0	77.6 77.5	77.6	5.9 5.9	5.9	5.7	6.6 5.4	6.0	8.5	4.3 5.6	5.0	9.0
				Middle	4	27.6 27.6	27.6	7.8 7.8	7.8	23.7 22.6	23.2	72.3 71.0	71.7	5.5 5.4	5.5		8.6 8.5	8.6		5.8 10.3	8.1	
				Bottom	7	26.8 26.7	26.8	7.8 7.8	7.8	26.7 26.7	26.7	64.6 64.0	64.3	5.0 4.9	5.0	5.0	11.1 10.8	11.0		16.8 11.0	13.9	
15-Jul-15	Fine	Moderate	18:44	Surface	1	26.2 26.1	26.2	8.1 8.1	8.1	30.1 28.3	29.2	84.7 95.2	90.0	5.8 6.6	6.2	5.9	2.5 2.5	2.5	7.4	2.4 6.7	4.6	5.7
				Middle	4	26.0 26.3	26.2	8.3 8.2	8.3	29.4 28.8	29.1	84.0 78.4	81.2	5.8 5.4	5.6		7.4 7.5	7.5		5.3 6.8	6.1	
				Bottom	7	26.4 25.8	26.1	8.0 8.0	8.0	27.6 28.8	28.2	77.0 81.7	79.4	5.3 5.7	5.5	5.5	13.3 10.9	12.1		8.2 4.8	6.5	
17-Jul-15	Sunny	Moderate	19:35	Surface	1	27.6 27.6	27.6	7.9 7.9	7.9	30.8 30.8	30.8	85.0 85.2	85.1	6.1 6.1	6.1	6.0	4.2 4.5	4.4	8.4	7.7 4.6	6.2	6.9
				Middle	4	26.7 26.7	26.7	7.9 7.9	7.9	31.8 31.7	31.8	82.4 80.8	81.6	5.8 5.7	5.8		8.3 8.4	8.4		7.2 7.7	7.5	
				Bottom	7	26.2 26.1	26.2	7.9 7.9	7.9	33.8 33.8	33.8	75.1 74.5	74.8	5.3 5.3	5.3	5.3	11.2 13.8	12.5		6.1 7.8	7.0	

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

Water Quality Monitoring Results at ST2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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*
20-Jul-15	Cloudy	Moderate	08:21	Surface	1	28.1	28.1	8.0	8.0	27.3	27.3	104.4	103.3	7.0	7.0	6.7	4.9	4.9	6.6	8.2	6.6	5.3
						28.1		8.0		27.3		102.1		6.9			4.8			5.0		
				Middle	3.5	27.7	27.7	7.9	8.0	27.4	27.4	93.8	94.3	6.3	6.4		6.8	7.0		3.1	3.1	
						27.7		8.0		27.3		94.8		6.4			7.1			3.1		
				Bottom	6	27.5	27.5	8.0	8.0	29.7	29.6	88.7	88.4	5.9	5.9	5.9	7.9	7.8		6.1	6.3	
						27.5		8.0		29.5		88.0		5.9			7.7			6.4		
22-Jul-15	Sunny	Moderate	09:24	Surface	1	27.6	27.6	7.7	7.7	12.2	12.2	87.1	86.9	6.4	6.4	6.2	6.5	6.5	6.6	7.1	5.7	5.4
						27.6		7.7		12.2		86.7		6.4			6.5			4.3		
				Middle	4	27.1	27.1	7.7	7.7	14.3	14.4	80.8	80.7	5.9	5.9		6.8	7.1		4.9	4.6	
						27.0		7.7		14.5		80.6		5.9			7.3			4.3		
				Bottom	7	26.0	26.0	7.7	7.7	20.5	20.5	77.9	77.6	5.6	5.6	5.6	6.4	6.3		7.0	5.8	
						26.0		7.7		20.5		77.2		5.6			6.2			4.6		
24-Jul-15	Sunny	Moderate	11:26	Surface	1	27.3	27.3	7.9	7.9	14.8	14.9	81.5	81.1	6.6	6.5	6.2	7.0	7.0	9.0	3.7	4.1	4.9
						27.3		7.9		14.9		80.6		6.3			7.0			4.5		
				Middle	4	26.1	26.1	8.0	8.0	23.1	23.6	70.7	70.5	5.8	5.8		7.7	7.7		9.6	7.2	
						26.1		8.0		24.1		70.3		5.8			7.6			4.8		
				Bottom	7	26.0	26.0	8.0	8.0	24.8	24.8	67.9	67.6	5.6	5.6	5.6	12.6	12.4		3.8	3.5	
						26.0		8.0		24.8		67.2		5.6			12.2			3.2		
27-Jul-15	Sunny	Calm	16:15	Surface	1	28.2	28.2	8.2	8.2	20.9	20.8	103.1	103.2	7.6	7.6	7.4	4.2	4.4	8.4	3.2	2.9	2.8
						28.2		8.2		20.7		103.3		7.6			4.5			2.5		
				Middle	4	27.4	27.4	8.1	8.1	27.7	27.7	100.5	99.7	7.2	7.2		8.3	8.4		3.5	3.5	
						27.3		8.1		27.6		98.9		7.1			8.4			3.4		
				Bottom	7	26.8	26.8	8.0	8.0	31.6	32.0	93.2	92.9	6.6	6.6	6.6	11.2	12.5		1.9	2.1	
						26.8		8.0		32.3		92.6		6.5			13.8			2.3		
29-Jul-15	Fine	Moderate	17:34	Surface	1	28.5	28.5	8.0	8.1	22.6	23.2	96.3	98.8	6.6	6.8	6.8	4.4	4.3	6.8	3.8	4.5	5.0
						28.4		8.1		23.8		101.3		6.9			4.2			5.2		
				Middle	3.5	28.3	28.3	8.2	8.3	23.0	23.5	98.3	100.1	6.7	6.8		6.2	6.8		5.8	5.1	
						28.3		8.3		24.0		101.8		6.9			7.3			4.3		
				Bottom	6	28.3	28.4	8.1	8.2	30.4	30.0	104.2	104.0	6.9	6.9	6.9	9.0	9.3		6.3	5.4	
						28.4		8.2		29.5		103.7		6.8			9.5			4.4		
31-Jul-15	Fine	Moderate	18:48	Surface	1	28.2	28.2	8.0	8.0	22.0	22.1	81.5	81.8	5.6	5.7	5.5	16.7	16.7	18.4	45.7	44.7	40.2
						28.2		8.0		22.1		82.1		5.7			16.6			43.7		
				Middle	3.5	27.6	27.6	8.0	8.0	23.3	23.3	75.5	75.9	5.2	5.3		19.3	19.3		35.0	38.0	
						27.6		8.0		23.3		76.2		5.3			19.3			41.0		
				Bottom	6	27.2	27.2	8.0	8.0	24.3	24.4	73.5	73.6	5.1	5.1	5.1	18.2	19.3		38.3	38.0	
						27.2		8.0		24.4		73.6		5.1			20.4			37.7		

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

Water Quality Monitoring Results at ST3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC)		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-Jul-15	Sunny	Moderate	12:37	Surface	1	28.3	28.3	7.9	7.9	18.0	18.0	82.2	82.2	5.8	5.8	5.6	10.1	10.6	11.5	12.6	8.8	6.9
						28.2		7.9		18.0		82.1		5.8			11.1			5.0		
				Middle	5.5	29.2	29.1	7.9	8.0	18.0	18.0	76.2	75.9	5.3	5.3		14.5	14.6		7.0	5.9	
						28.9		8.0		18.0		75.6		5.3			14.6			4.7		
				Bottom	10	29.3	29.3	7.9	7.9	28.8	28.8	74.6	74.8	4.9	4.9	4.9	9.1	9.4		7.7	6.1	
						29.2		7.9		28.8		74.9		4.9			9.6			4.5		
4-Jul-15	Sunny	Moderate	14:12	Surface	1	29.2	29.2	7.7	7.7	20.3	20.4	91.3	90.7	6.3	6.3	6.7	4.2	4.1	9.7	8.5	7.1	7.6
						29.1		7.7		20.4		90.1		6.2			4.0			5.7		
				Middle	6.5	26.2	26.2	7.7	7.7	24.7	24.8	100.4	99.3	7.1	7.0		13.1	13.0		9.1	8.7	
						26.1		7.7		24.8		98.1		6.9			12.9			8.2		
				Bottom	12	24.2	24.3	7.7	7.7	32.0	32.0	86.8	86.8	6.1	6.1	6.1	11.9	12.0		7.0	6.9	
						24.3		7.7		32.0		86.7		6.1			12.1			6.7		
6-Jul-15	Sunny	Moderate	16:39	Surface	1	27.0	27.0	7.8	7.8	22.1	22.1	96.6	94.4	6.8	6.7	6.3	5.2	5.3	5.8	3.5	3.7	4.4
						27.0		7.8		22.1		92.2		6.5			5.3			3.8		
				Middle	5.5	27.0	27.0	7.8	7.8	24.1	24.2	82.5	82.6	5.8	5.8		5.1	5.4		4.6	3.7	
						26.9		7.8		24.2		82.6		5.8			5.7			2.8		
				Bottom	10	27.0	26.9	7.8	7.8	27.1	27.4	79.4	79.4	5.4	5.4	5.4	6.7	6.8		8.6	5.7	
						26.8		7.7		27.7		79.3		5.4			6.8			2.7		
8-Jul-15	Sunny	Moderate	16:32	Surface	1	27.6	27.6	8.1	8.1	25.6	25.6	83.7	83.5	6.8	6.8	6.6	3.4	3.5	6.3	4.6	5.0	3.9
						27.6		8.1		25.6		83.2		6.8			3.5			5.4		
				Middle	6	27.1	27.2	8.1	8.1	27.4	27.2	74.1	73.8	6.4	6.4		6.1	5.9		5.2	4.0	
						27.2		8.1		26.9		73.5		6.3			5.7			2.8		
				Bottom	11	25.5	25.5	8.0	8.0	32.2	32.2	47.6	47.2	4.9	4.9	4.9	9.1	9.5		2.9	2.7	
						25.5		8.0		32.1		46.7		4.9			9.9			2.4		
10-Jul-15	Sunny	Moderate	08:56	Surface	1	26.0	25.9	7.8	7.8	10.5	11.0	94.4	94.4	7.2	7.2	7.0	7.7	7.7	10.4	10.7	8.6	7.8
						25.8		7.8		11.4		94.3		7.2			7.7			6.4		
				Middle	6	24.1	24.1	7.8	7.8	24.7	24.9	92.2	92.3	6.7	6.7		9.9	10.7		8.5	6.5	
						24.0		7.8		25.1		92.3		6.7			11.5			4.4		
				Bottom	11	23.3	23.3	7.8	7.8	26.2	26.4	82.9	82.7	6.1	6.1	6.1	12.8	12.9		10.1	8.3	
						23.2		7.8		26.5		82.4		6.1			13.0			6.5		
13-Jul-15	Sunny	Moderate	11:39	Surface	1	28.8	28.6	7.8	7.8	19.7	20.9	77.8	74.7	6.0	6.1	6.1	3.8	3.7	6.3	5.5	5.6	5.8
						28.4		7.8		22.0		71.5		6.1			3.5			5.7		
				Middle	5.5	28.9	28.9	7.8	7.9	24.4	23.4	73.6	80.3	6.1	6.1		6.5	6.7		8.0	6.3	
						28.9		7.9		22.3		87.0		6.0			6.8			4.5		
				Bottom	10	28.8	28.9	7.9	7.8	30.8	31.2	75.3	77.0	5.6	5.5	5.5	8.4	8.5		5.2	5.5	
						28.9		7.7		31.5		78.6		5.4			8.5			5.8		
15-Jul-15	Sunny	Moderate	13:17	Surface	1	26.2	26.2	8.2	8.2	30.1	28.6	99.0	97.2	6.8	6.7	6.7	6.8	6.8	9.8	6.0	5.8	7.1
						26.2		8.2		27.0		95.4		6.6			6.8			5.5		
				Middle	6	26.1	26.1	8.3	8.3	33.2	33.2	98.2	97.4	6.6	6.6		9.5	9.5		7.9	7.3	
						26.1		8.2		33.2		96.6		6.5			9.5			6.7		
				Bottom	11	26.2	26.2	8.2	8.2	28.5	28.4	90.1	89.0	6.2	6.2	6.2	13.3	13.1		7.6	8.2	
						26.1		8.2		28.3		87.8		6.1			12.9			8.7		
17-Jul-15	Sunny	Moderate	13:36	Surface	1	27.2	27.1	7.7	7.7	31.8	32.1	84.1	81.0	5.6	5.4	5.6	9.6	9.7	10.0	9.8	9.6	9.1
						26.9		7.7		32.4		77.9		5.2			9.7			9.3		
				Middle	4.5	27.3	27.3	7.7	7.8	31.6	31.8	80.0	86.5	5.3	5.8		9.6	9.7		10.2	9.4	
						27.3		7.9		31.9		93.0		6.2			9.7			8.6		
				Bottom	8	27.2	27.3	7.8	7.8	32.3	32.3	81.7	83.3	5.4	5.5	5.5	10.5	10.6		5.8	8.2	
						27.3		7.7		32.3		84.9		5.6			10.6			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 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*
20-Jul-15	Cloudy	Moderate	14:47	Surface	1	28.2	28.2	8.1	8.1	27.9	27.9	100.9	100.6	6.7	6.7	6.7	2.4	2.7	9.1	8.8	9.4	9.9
						28.2		8.1		27.9		100.3		6.7			2.9			10.0		
				Middle	6.5	28.1	28.1	8.2	8.2	29.5	29.5	100.4	100.6	6.7	6.7		11.6	11.5		11.7	9.9	
						28.1		8.2		29.5		100.8		6.7			11.4			8.0		
				Bottom	12	28.1	28.1	8.2	8.2	29.6	29.6	100.7	100.7	6.7	6.7	6.7	13.1	13.2		10.2	10.4	
						28.1		8.2		29.6		100.7		6.7			13.2			10.5		
22-Jul-15	Sunny	Moderate	16:26	Surface	1	27.4	27.4	7.5	7.5	16.0	16.1	74.4	74.9	5.8	5.8	5.5	11.1	11.1	7.3	5.0	7.2	8.0
						27.4		7.5		16.1		75.3		5.8			11.0			9.3		
				Middle	6	26.5	26.5	7.7	7.7	20.1	20.1	66.4	66.2	5.1	5.2		6.3	6.3		7.2	7.1	
						26.5		7.7		20.1		66.0		5.2			6.3			7.0		
				Bottom	11	26.2	26.2	7.8	7.8	23.5	23.5	59.3	59.7	4.9	5.0	5.0	4.6	4.6		14.2	9.8	
						26.2		7.8		23.5		60.0		5.0			4.6			5.3		
24-Jul-15	Fine	Moderate	16:37	Surface	1	27.6	27.6	7.8	7.8	18.5	18.2	84.7	83.4	6.0	6.0	6.0	4.5	4.6	7.9	12.7	12.3	11.3
						27.6		7.7		17.9		82.0		5.9			4.6			11.8		
				Middle	5.5	27.6	27.7	8.0	8.0	22.8	23.7	86.3	85.5	6.0	5.9		8.2	8.3		10.8	10.4	
						27.8		8.0		24.5		84.6		5.8			8.3			10.0		
				Bottom	10	27.7	27.8	7.8	8.0	25.2	25.3	85.3	85.7	5.8	5.9	5.9	10.2	10.7		11.3	11.3	
						27.9		8.1		25.4		86.0		5.9			11.2			11.3		
27-Jul-15	Sunny	Calm	09:48	Surface	1	28.8	28.8	8.2	8.2	23.5	23.5	108.6	109.2	7.9	8.0	7.9	2.3	2.3	2.9	4.2	3.8	3.8
						28.8		8.2		23.5		109.8		8.0			2.3			3.3		
				Middle	6	28.6	28.6	8.1	8.1	24.3	24.3	107.8	107.7	7.8	7.8		2.2	2.2		3.0	2.8	
						28.6		8.1		24.3		107.6		7.8			2.1			2.6		
				Bottom	11	27.9	27.9	8.0	8.0	28.3	28.2	92.4	91.3	6.6	6.6	6.6	4.1	4.1		4.6	4.8	
						27.9		8.0		28.1		90.2		6.5			4.1			5.0		
29-Jul-15	Sunny	Moderate	11:16	Surface	1	28.3	28.3	8.1	8.1	16.1	16.2	95.4	95.7	6.8	6.8	6.5	3.5	3.5	6.9	4.5	4.6	4.6
						28.2		8.1		16.2		95.9		6.8			3.5			4.7		
				Middle	6	25.8	25.9	8.0	8.0	30.2	30.1	87.6	89.1	6.0	6.1		7.7	7.2		4.6	4.3	
						25.9		8.0		30.0		90.6		6.2			6.6			4.0		
				Bottom	11	24.3	24.3	8.0	8.0	32.4	32.4	80.8	83.8	5.6	5.8	5.8	10.1	10.1		4.8	4.8	
						24.3		8.0		32.4		86.7		6.0			10.1			4.8		
31-Jul-15	Sunny	Moderate	13:36	Surface	1	28.1	28.3	8.1	8.1	23.4	22.9	85.9	85.3	5.9	5.9	5.9	17.6	18.1	20.9	26.2	29.4	31.0
						28.5		8.0		22.3		84.6		5.8			18.6			32.5		
				Middle	6	28.0	27.9	8.0	8.0	23.6	24.0	84.1	83.5	5.8	5.8		21.3	21.3		33.3	31.8	
						27.8		8.0		24.3		82.9		5.7			21.3			30.3		
				Bottom	11	28.5	28.1	8.1	8.1	22.3	23.3	79.6	78.7	5.5	5.4	5.4	23.1	23.4		31.7	31.7	
						27.7		8.1		24.3		77.7		5.3			23.7			31.7		

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

Water Quality Monitoring Results at ST3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C) Value	Temperature (°C) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
2-Jul-15	Fine	Moderate	19:31	Surface	1	26.5 26.5	26.5	7.9 7.9	7.9	18.0 18.1	18.1	82.8 82.5	82.7	6.0 6.0	6.0	5.7	15.4 15.7	15.6	12.3	8.4 7.0	7.7	7.7
				Middle	5.5	28.4 28.9	28.7	8.0 8.0	8.0	18.0 18.0	18.0	75.1 75.9	75.5	5.3 5.3	5.3		9.4 9.3	9.4		8.2 9.2	8.7	
				Bottom	10	27.1 29.0	28.1	7.9 8.0	8.0	28.8 28.8	28.8	74.5 76.6	75.6	5.0 5.0	5.0	5.0	11.8 11.9	11.9		7.7 5.7	6.7	
4-Jul-15	Sunny	Moderate	08:02	Surface	1	28.3 28.3	28.3	7.8 7.8	7.8	25.4 26.1	25.8	92.9 93.3	93.1	6.3 6.3	6.3	6.2	7.9 7.6	7.8	10.5	6.9 3.3	5.1	4.3
				Middle	6	26.5 26.4	26.5	7.8 7.8	7.8	21.4 23.0	22.2	85.8 85.2	85.5	6.1 6.0	6.1		10.1 11.2	10.7		5.8 3.0	4.4	
				Bottom	11	25.7 25.7	25.7	7.8 7.8	7.8	30.9 31.4	31.2	84.1 83.4	83.8	5.8 5.7	5.8	5.8	13.0 13.2	13.1		2.3 4.3	3.3	
6-Jul-15	Sunny	Moderate	10:28	Surface	1	28.4 28.5	28.5	7.7 7.7	7.7	20.9 20.6	20.8	93.6 94.1	93.9	6.5 6.5	6.5	6.2	6.4 6.5	6.5	6.7	8.4 10.8	9.6	10.5
				Middle	5.5	28.6 28.4	28.5	7.8 7.7	7.8	22.1 22.7	22.4	84.5 84.0	84.3	5.8 5.8	5.8		5.8 5.9	5.9		9.7 12.0	10.9	
				Bottom	10	28.5 27.4	28.0	7.7 7.7	7.7	25.7 29.8	27.8	80.6 81.1	80.9	5.4 5.4	5.4	5.4	7.4 7.9	7.7		12.4 9.8	11.1	
8-Jul-15	Sunny	Moderate	11:37	Surface	1	28.0 28.0	28.0	8.1 8.1	8.1	25.1 25.1	25.1	83.0 83.3	83.2	6.7 6.7	6.7	6.4	4.2 4.0	4.1	8.4	3.6 2.4	3.0	3.8
				Middle	6	26.9 27.0	27.0	8.0 8.0	8.0	27.7 29.0	28.4	59.2 60.4	59.8	6.0 6.1	6.1		8.8 8.3	8.6		5.1 3.5	4.3	
				Bottom	11	25.8 25.9	25.9	8.0 8.0	8.0	31.8 31.8	31.8	53.2 51.7	52.5	5.5 5.4	5.5	5.5	12.3 12.5	12.4		2.5 5.8	4.2	
10-Jul-15	Sunny	Moderate	14:21	Surface	1	26.9 27.0	27.0	7.8 7.8	7.8	13.0 13.1	13.1	84.4 84.2	84.3	6.3 6.2	6.3	5.8	4.5 3.7	4.1	9.8	9.2 7.5	8.4	9.7
				Middle	6.5	23.7 23.6	23.7	7.7 7.7	7.7	24.6 24.7	24.7	72.4 70.4	71.4	5.3 5.2	5.3		13.2 13.3	13.3		8.9 13.1	11.0	
				Bottom	12	22.0 22.1	22.1	7.8 7.8	7.8	31.0 30.9	31.0	69.6 68.9	69.3	5.1 5.0	5.1	5.1	11.8 12.2	12.0		8.7 10.6	9.7	
13-Jul-15	Sunny	Moderate	17:33	Surface	1	28.7 28.9	28.8	7.9 7.7	7.8	20.0 19.7	19.9	80.3 84.1	82.2	5.2 5.4	5.3	5.4	3.2 3.2	3.2	5.8	3.5 8.7	6.1	6.7
				Middle	5.5	28.5 28.8	28.7	8.0 7.9	8.0	24.7 24.7	24.7	82.2 86.0	84.1	5.3 5.5	5.4		5.8 5.4	5.6		5.0 8.7	6.9	
				Bottom	10	28.4 28.6	28.5	7.9 7.8	7.9	26.7 27.7	27.2	76.7 71.7	74.2	5.0 4.9	5.0	5.0	8.4 8.6	8.5		5.5 8.7	7.1	
15-Jul-15	Fine	Moderate	19:49	Surface	1	26.0 26.1	26.1	8.1 8.1	8.1	29.0 29.5	29.3	88.6 86.1	87.4	6.1 5.9	6.0	6.0	6.9 6.7	6.8	9.5	6.0 3.1	4.6	6.3
				Middle	5.5	25.7 25.8	25.8	8.1 8.1	8.1	29.4 30.0	29.7	86.0 86.3	86.2	5.9 5.9	5.9		9.3 9.1	9.2		5.8 4.7	5.3	
				Bottom	10	25.6 25.6	25.6	8.1 8.1	8.1	30.3 31.9	31.1	85.6 85.3	85.5	5.9 5.8	5.9	5.9	12.7 12.1	12.4		7.7 10.2	9.0	
17-Jul-15	Sunny	Moderate	19:55	Surface	1	27.1 27.2	27.2	7.9 7.6	7.8	32.0 31.8	31.9	86.0 89.7	87.9	5.7 6.0	5.9	6.0	16.6 15.3	16.0	14.8	7.0 6.3	6.7	8.1
				Middle	4.5	26.9 27.1	27.0	7.9 7.8	7.9	32.7 32.7	32.7	87.9 91.5	89.7	5.8 6.1	6.0		13.5 15.9	14.7		11.9 9.1	10.5	
				Bottom	8	26.8 26.9	26.9	7.9 7.7	7.8	31.7 32.8	32.3	82.5 77.6	80.1	5.5 5.2	5.4	5.4	13.5 13.7	13.6		6.6 7.4	7.0	

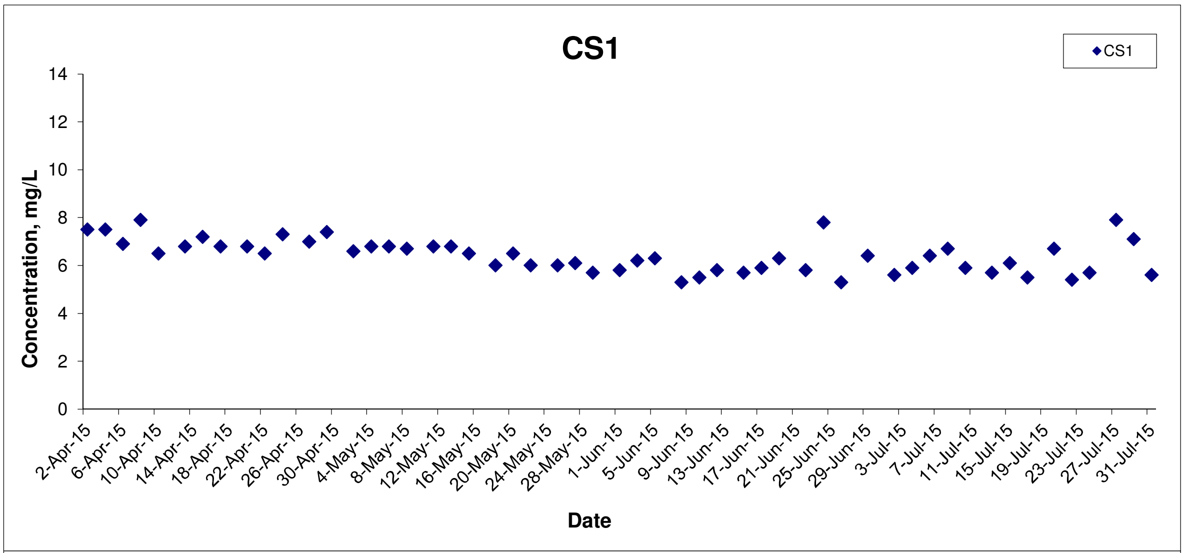
Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

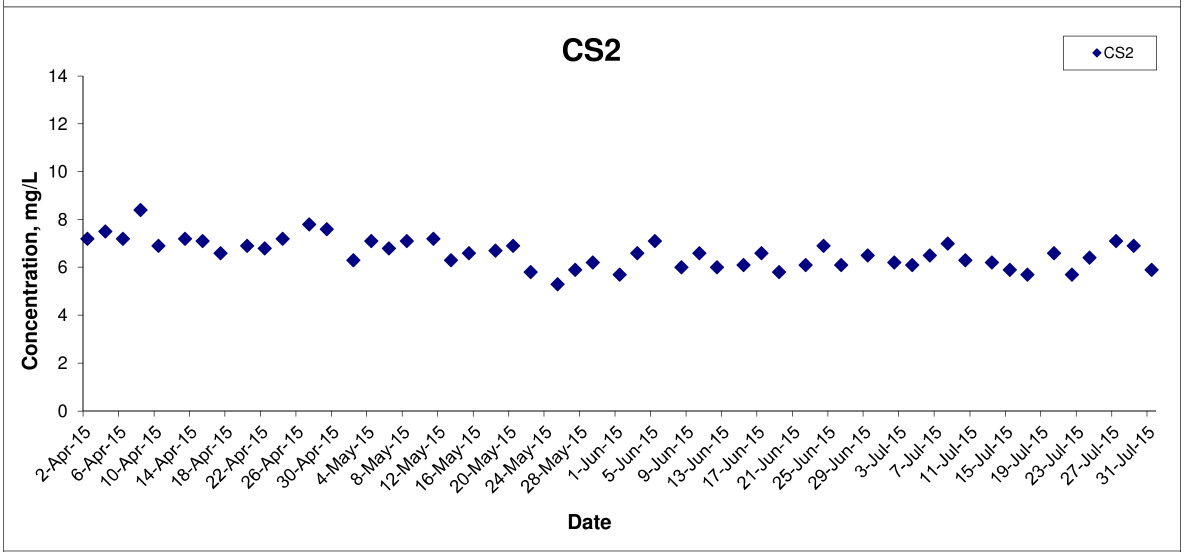
Water Quality Monitoring Results at ST3 - Mid-Flood Tide

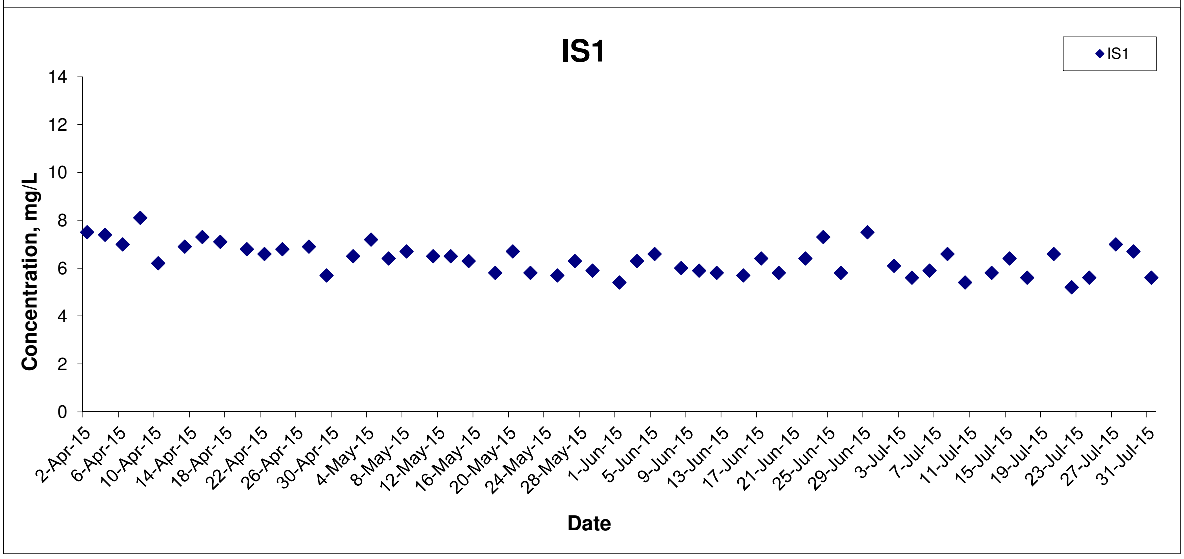
Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (^oC) Value	Temperature (^oC) Average	pH Value	pH Average	Salinity ppt Value	Salinity ppt Average	DO Saturation (%) Value	DO Saturation (%) Average	Dissolved Oxygen (mg/L) Value	Dissolved Oxygen (mg/L) Average	Dissolved Oxygen (mg/L) DA*	Turbidity(NTU) Value	Turbidity(NTU) Average	Turbidity(NTU) DA*	Suspended Solids (mg/L) Value	Suspended Solids (mg/L) Average	Suspended Solids (mg/L) DA*
20-Jul-15	Cloudy	Moderate	09:14	Surface	1	28.0	28.0	8.0	8.0	29.0	29.0	101.0	101.0	6.7	6.7	6.7	5.4	5.5	6.4	7.8	6.1	6.6
						28.0		8.0		29.0		101.0		6.7			5.5			4.4		
				Middle	6	28.0	28.0	8.0	8.0	29.4	29.5	100.9	100.8	6.7	6.7		5.6	5.8		6.5	6.4	
						27.9		8.0		29.5		100.7		6.7			6.0			6.3		
				Bottom	11	27.8	27.8	8.1	8.1	30.4	30.4	101.2	101.3	6.7	6.7	6.7	7.8	7.8		6.8	7.3	
						27.8		8.1		30.3		101.4		6.7			7.7			7.8		
22-Jul-15	Sunny	Moderate	10:17	Surface	1	27.4	27.4	7.6	7.6	15.9	15.9	79.2	78.4	6.0	6.0	5.7	11.1	11.2	7.6	8.2	8.1	8.2
						27.4		7.5		15.9		77.6		6.0			11.2			7.9		
				Middle	6	26.5	26.5	7.7	7.7	20.5	20.3	69.7	70.1	5.4	5.4		6.6	6.6		7.7	6.7	
						26.5		7.7		20.1		70.4		5.4			6.5			5.7		
				Bottom	11	26.2	26.2	7.8	7.8	24.8	24.7	63.0	62.6	4.9	4.9	4.9	5.1	5.0		8.6	9.8	
						26.2		7.8		24.6		62.1		4.9			4.8			11.0		
24-Jul-15	Sunny	Moderate	11:43	Surface	1	27.8	27.7	8.1	8.0	18.0	18.2	79.3	81.5	5.6	5.8	5.8	2.8	2.8	6.1	9.6	10.1	11.4
						27.6		7.9		18.3		83.6		6.0			2.7			10.5		
				Middle	5.5	27.6	27.7	7.8	8.0	22.5	23.3	85.9	83.9	6.0	5.8		6.5	6.0		10.3	11.1	
						27.8		8.1		24.1		81.8		5.6			5.5			11.8		
				Bottom	10	27.9	27.9	7.8	7.8	26.2	25.1	85.7	84.8	5.8	5.8	5.8	9.8	9.6		12.5	12.9	
						27.9		7.7		24.0		83.8		5.8			9.4			13.3		
27-Jul-15	Sunny	Calm	15:45	Surface	1	29.5	29.6	8.1	8.1	21.5	21.5	107.8	107.8	7.8	7.8	7.9	3.5	3.5	4.9	3.9	3.0	3.1
						29.6		8.1		21.4		107.8		7.8			3.4			2.1		
				Middle	6.5	29.1	29.1	8.1	8.1	23.4	23.5	109.5	108.8	7.9	7.9		2.9	2.9		2.3	2.7	
						29.1		8.1		23.5		108.1		7.8			2.9			3.0		
				Bottom	12	27.9	27.9	7.9	7.9	29.2	29.2	79.9	79.5	5.7	5.7	5.7	8.3	8.2		3.1	3.7	
						27.9		7.9		29.1		79.1		5.6			8.1			4.3		
29-Jul-15	Fine	Moderate	17:46	Surface	1	28.6	28.6	8.0	8.0	16.0	16.1	102.6	102.6	7.3	7.3	6.9	4.3	4.4	11.1	3.8	3.4	4.2
						28.6		8.0		16.1		102.6		7.3			4.5			3.0		
				Middle	6	26.4	26.4	7.9	7.9	27.4	27.7	94.2	93.2	6.5	6.5		13.6	13.8		4.3	4.1	
						26.3		7.9		27.9		92.2		6.4			13.9			3.8		
				Bottom	11	25.7	25.7	7.9	7.9	30.7	30.9	88.8	88.7	6.1	6.1	6.1	15.0	15.2		4.7	5.2	
						25.6		7.9		31.0		88.5		6.1			15.3			5.6		
31-Jul-15	Fine	Moderate	19:58	Surface	1	28.2	28.2	7.9	7.9	24.6	24.9	79.1	78.1	5.4	5.3	5.3	15.3	15.2	17.9	30.7	30.4	31.8
						28.2		7.9		25.1		77.0		5.2			15.1			30.0		
				Middle	6	27.9	27.9	7.9	7.9	25.0	25.3	76.9	77.1	5.3	5.3		17.7	18.1		32.0	33.7	
						27.9		7.9		25.6		77.2		5.3			18.5			35.3		
				Bottom	11	27.8	27.8	7.9	7.9	25.8	26.7	76.7	76.6	5.2	5.2	5.2	20.1	20.3		30.3	31.3	
						27.8		7.9		27.5		76.4		5.2			20.5			32.3		

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

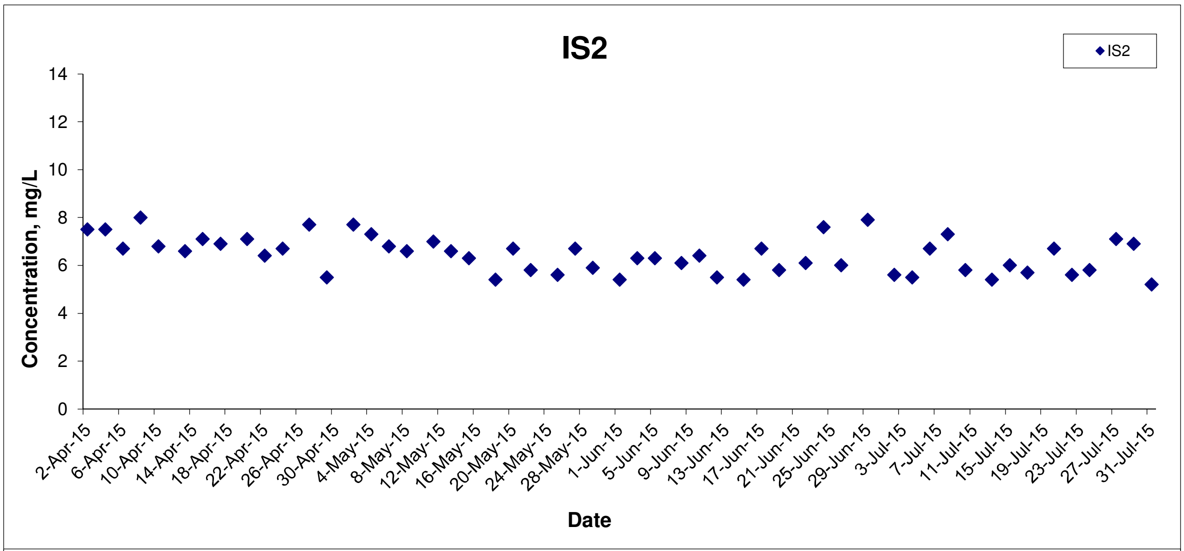


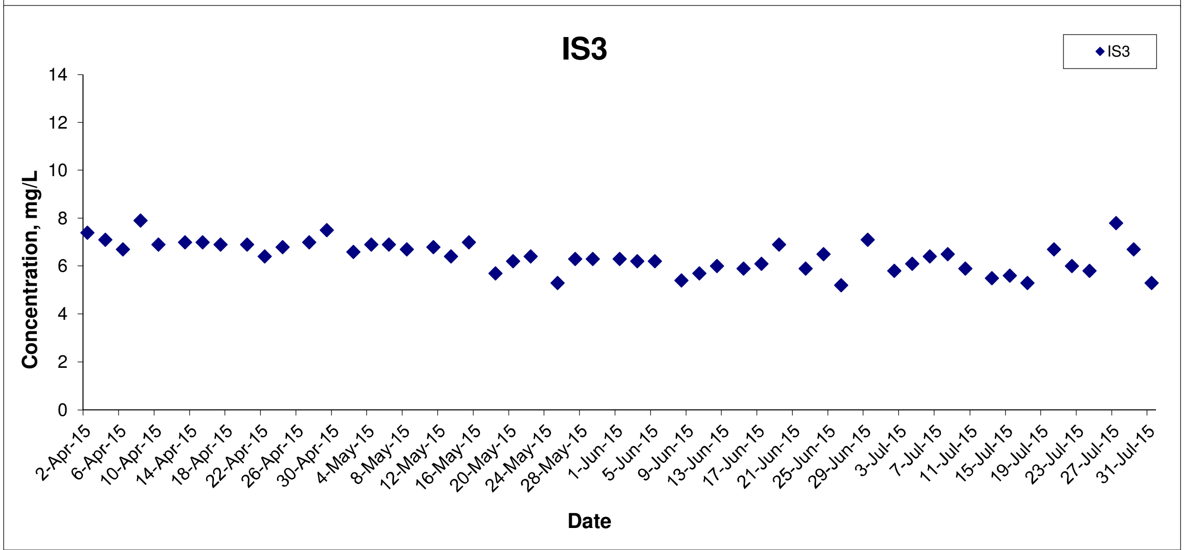


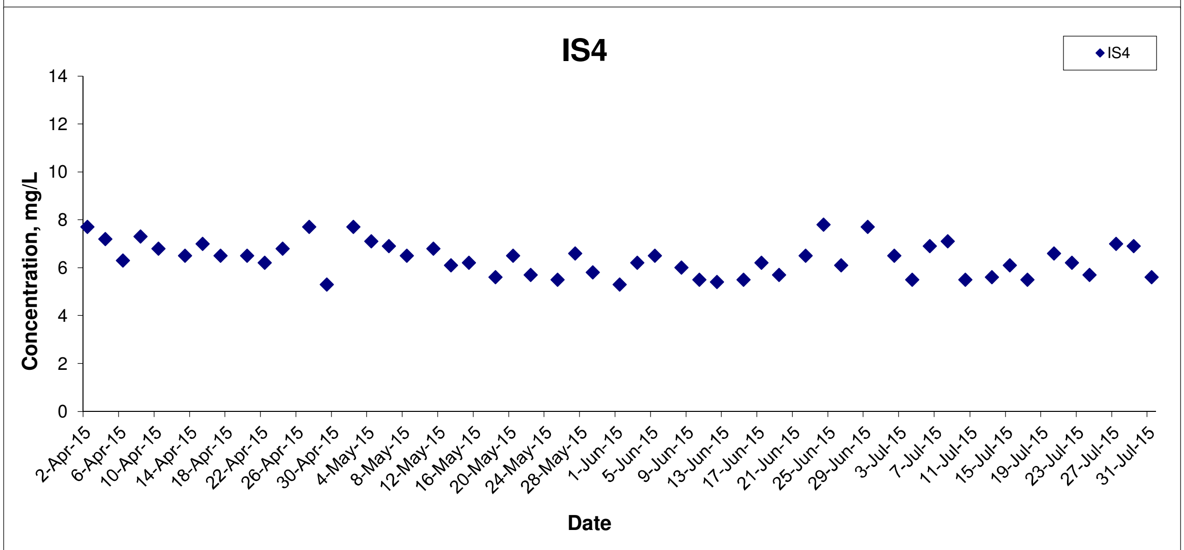


Title	Scale	Project No.	
Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	N.T.S	MA12014	CINOTECH
	Date Jul 15	Appendix H	

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

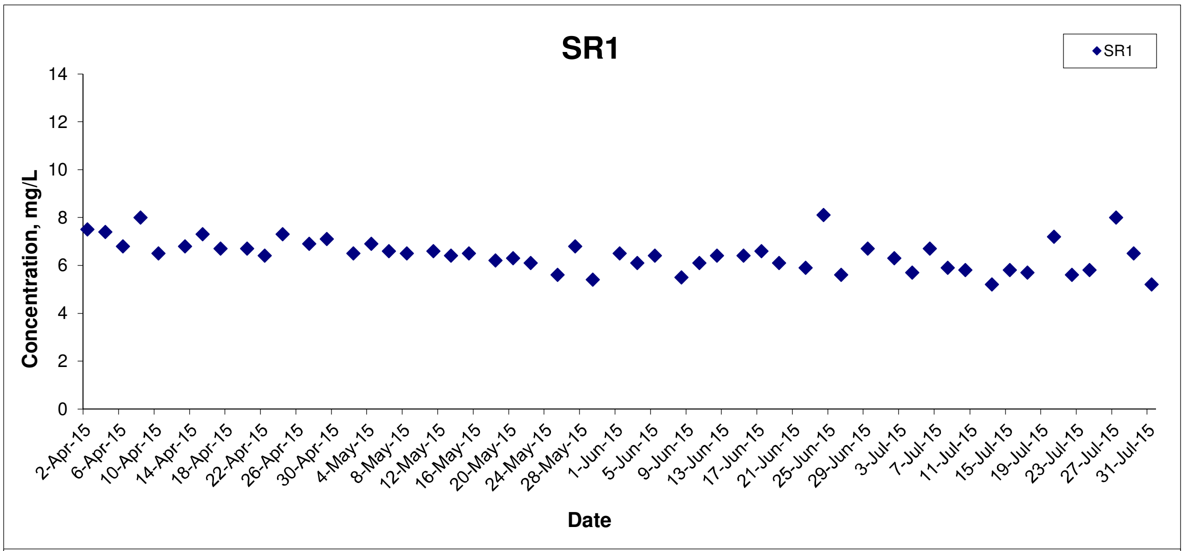


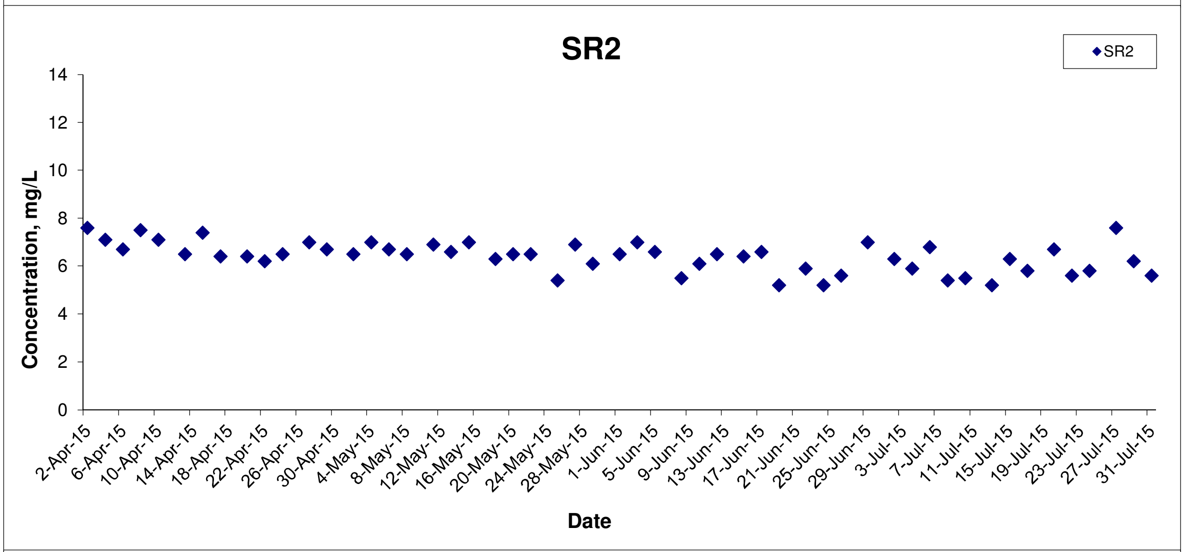


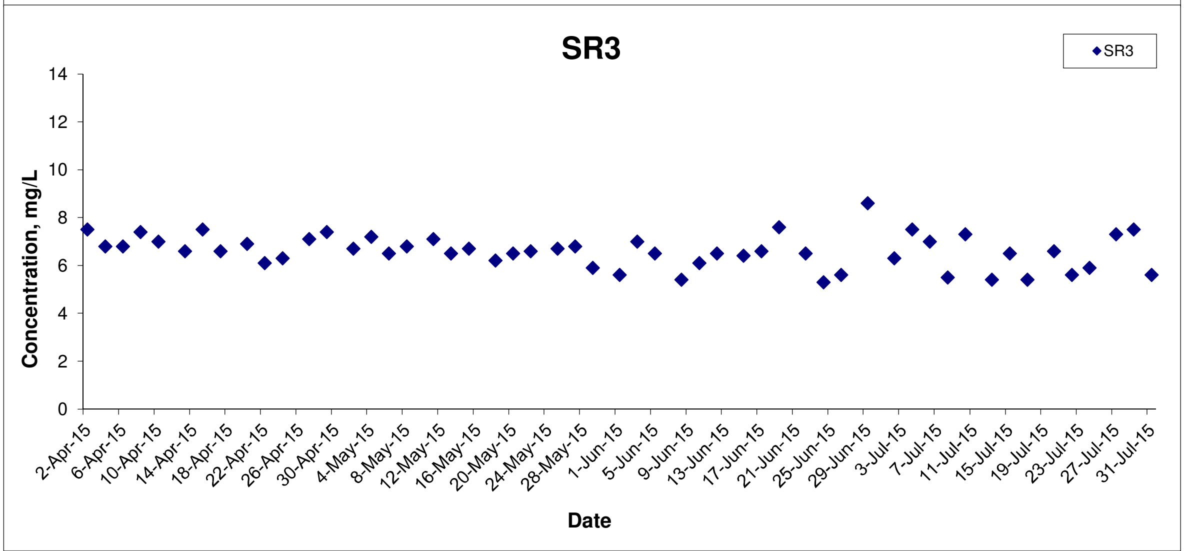


Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA12014	CINOTECH
		Date Jul 15	Appendix H	

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



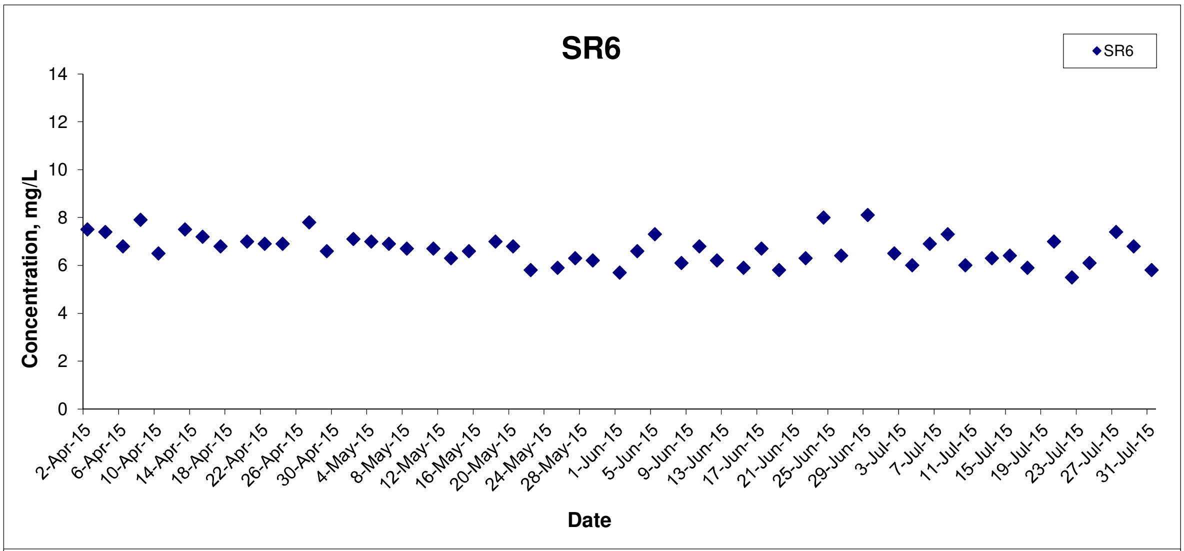


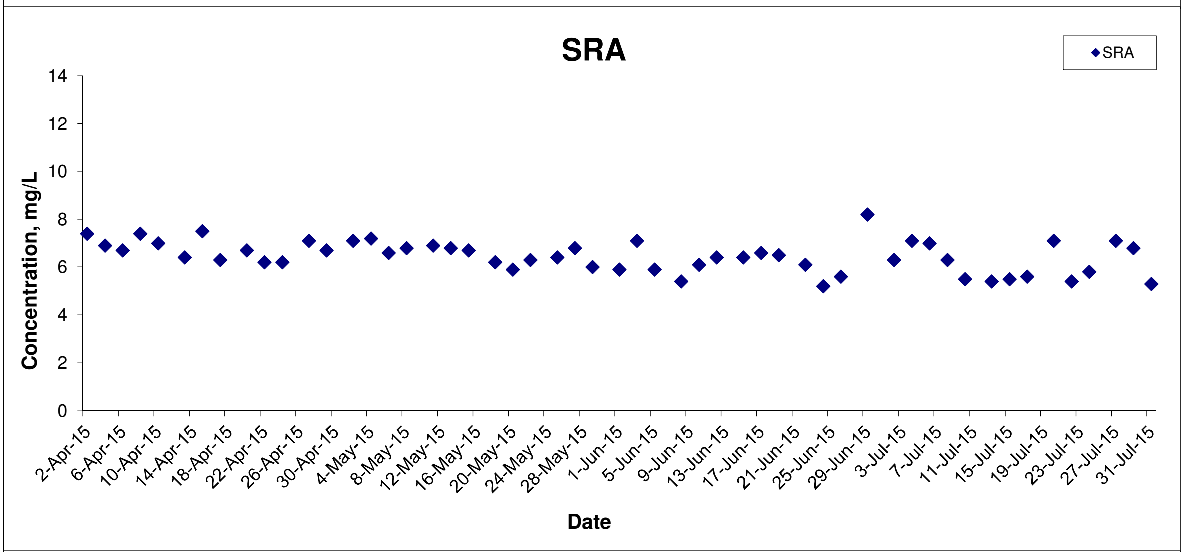


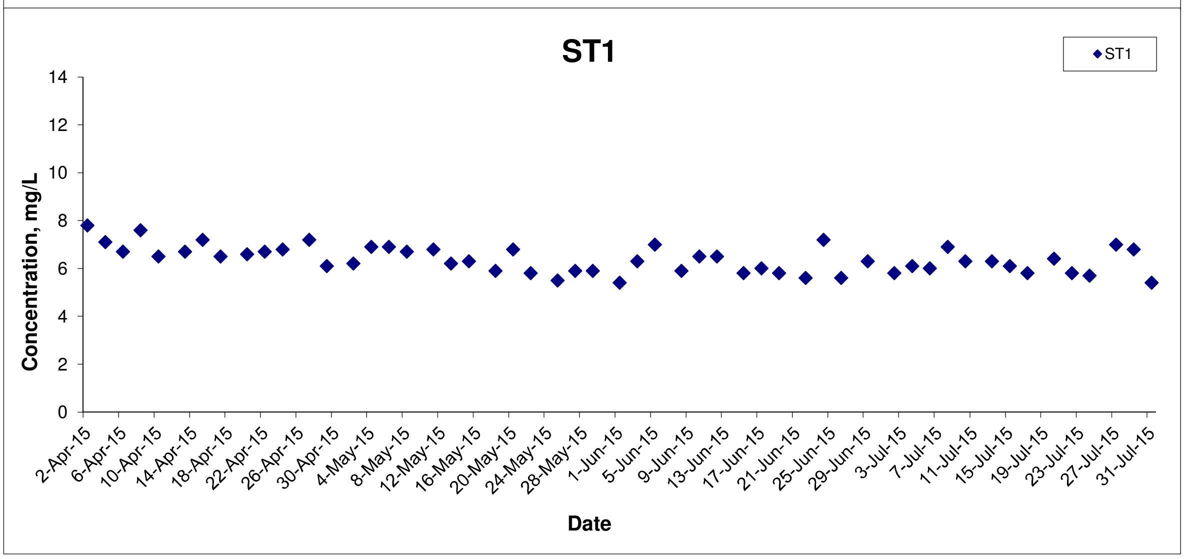
Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S Date Jul 15	Project No. MA12014 Appendix H

CINOTECH

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

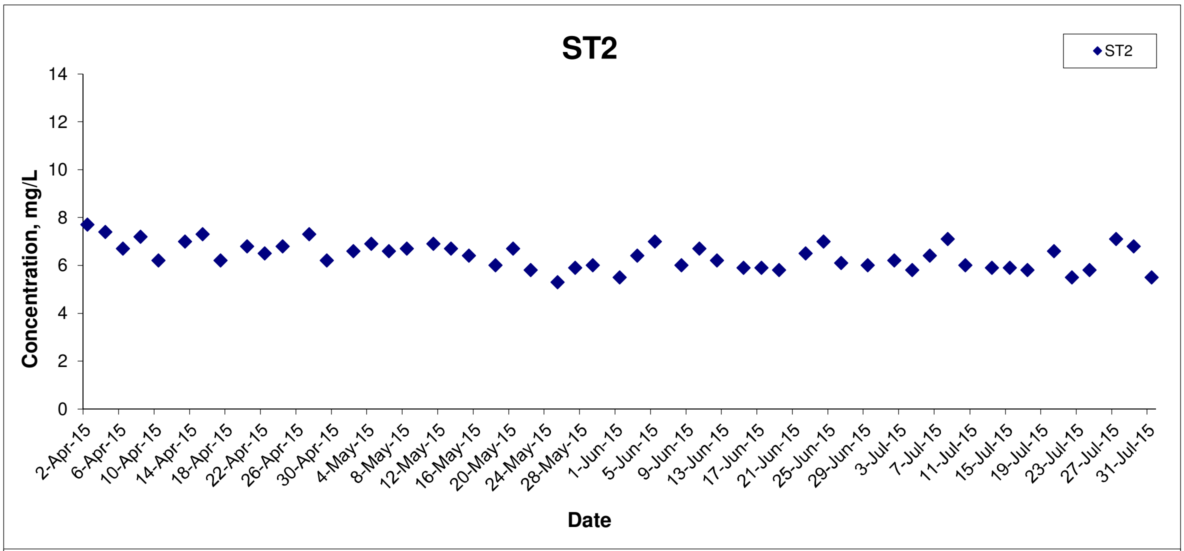


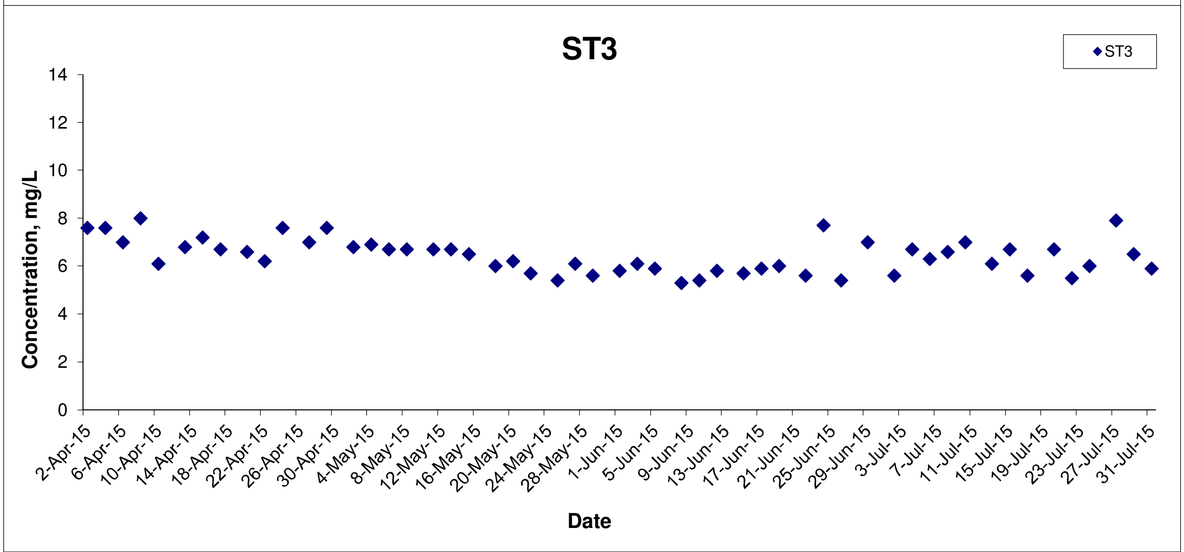




Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA12014	CINOTECH
		Date Jul 15	Appendix H	

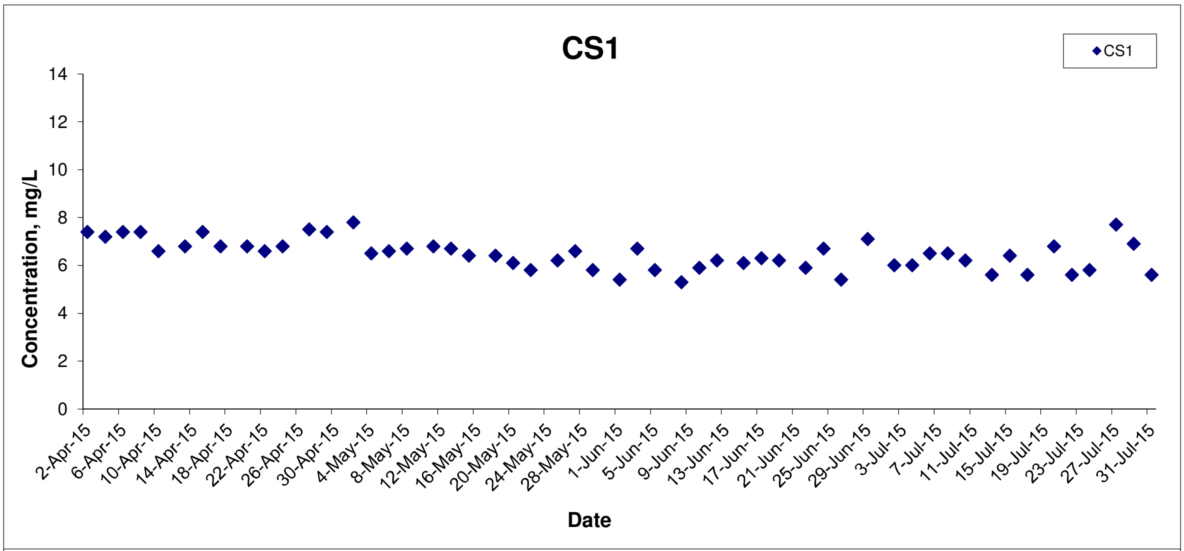
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

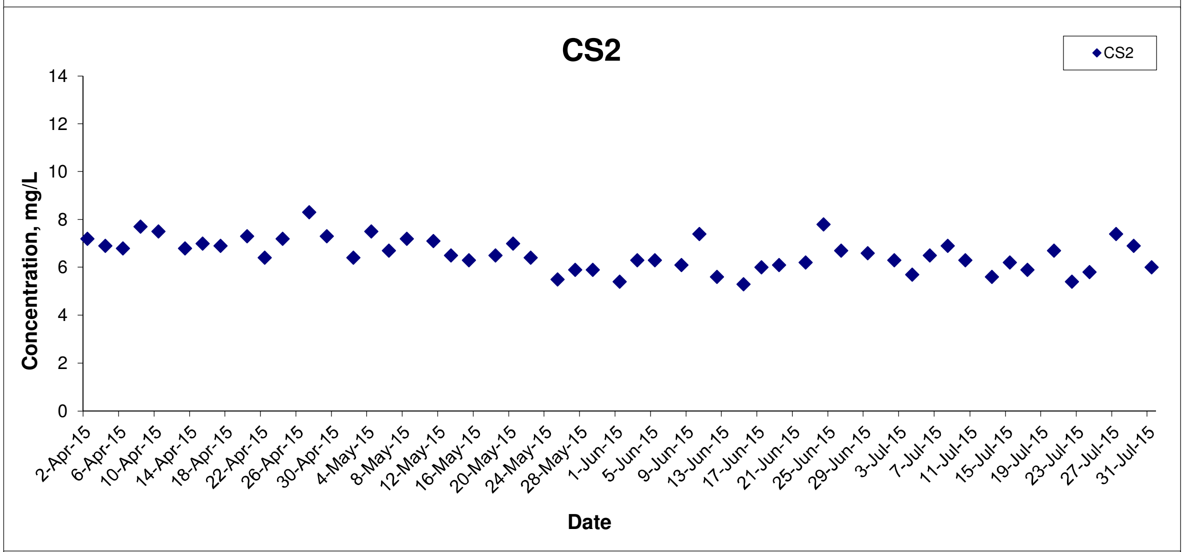


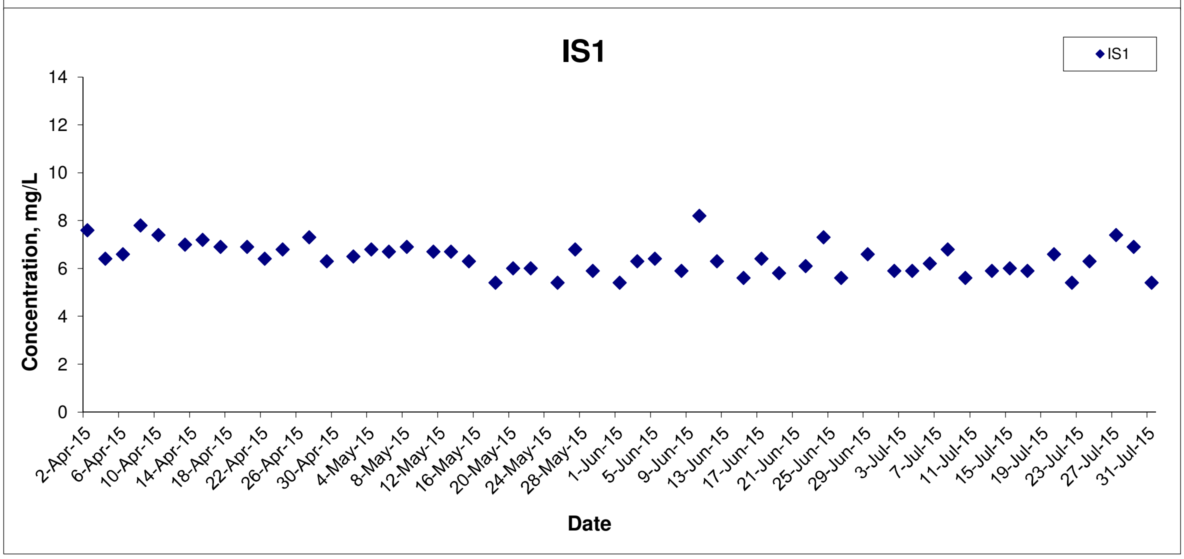


Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA12014	CINOTECH
		Date Jul 15	Appendix H	

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

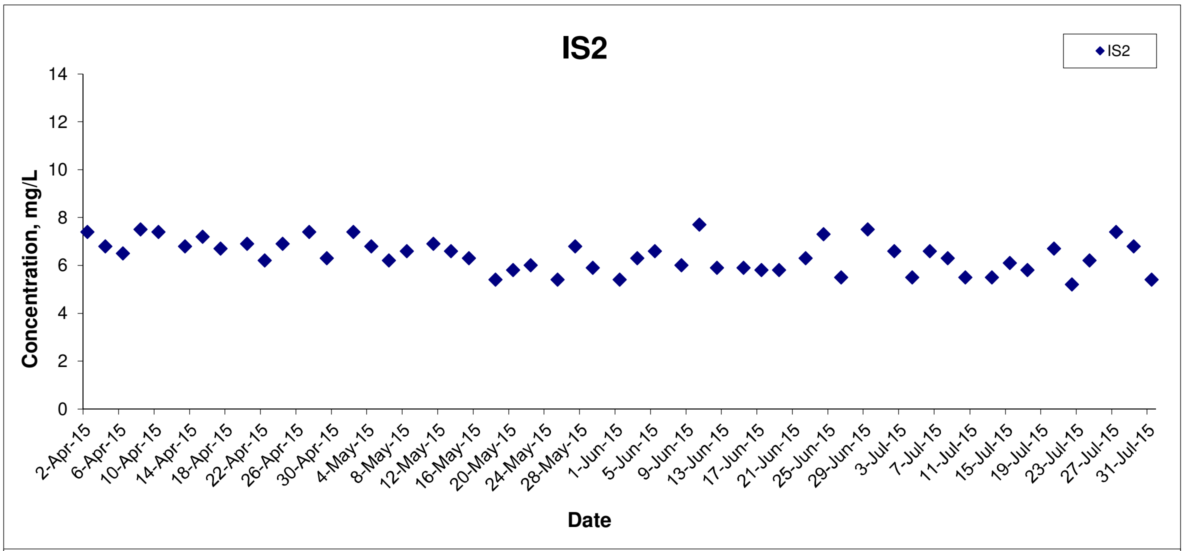


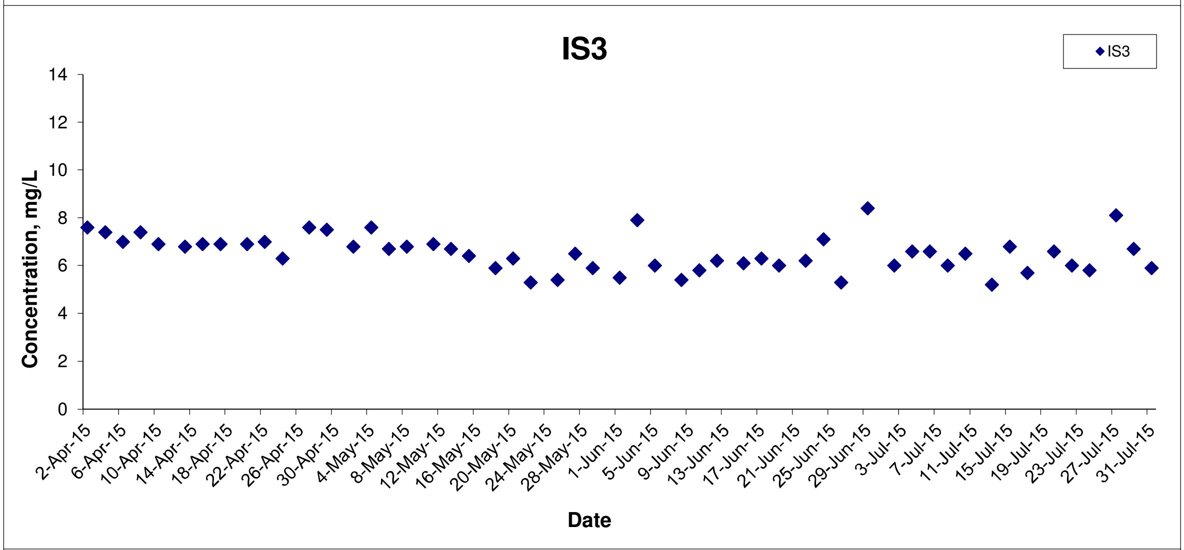


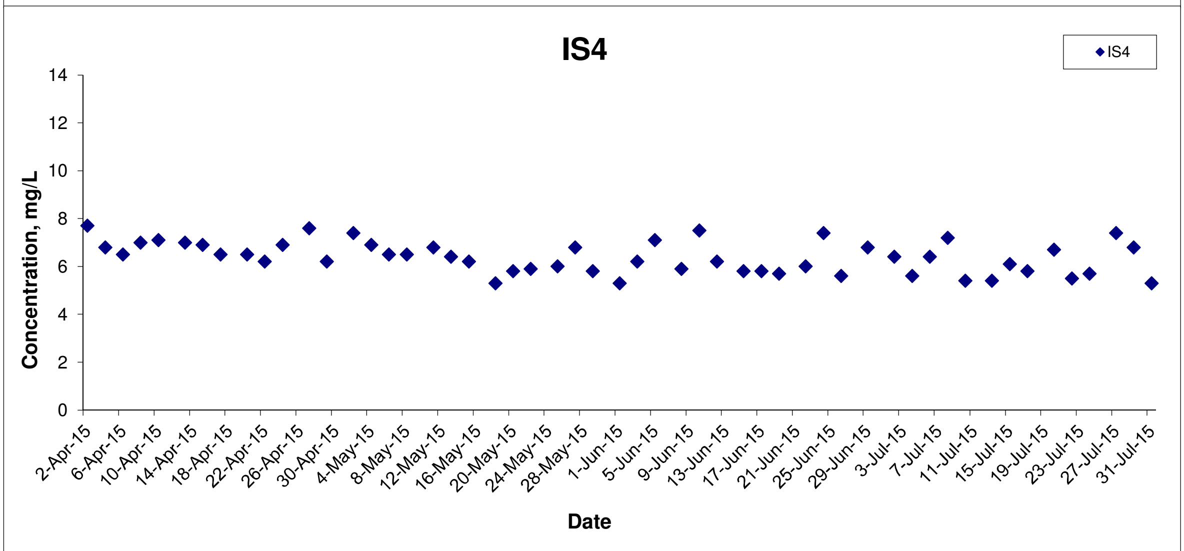


Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No. MA12014	CINOTECH
		Date: Jul 15	Appendix: H	

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

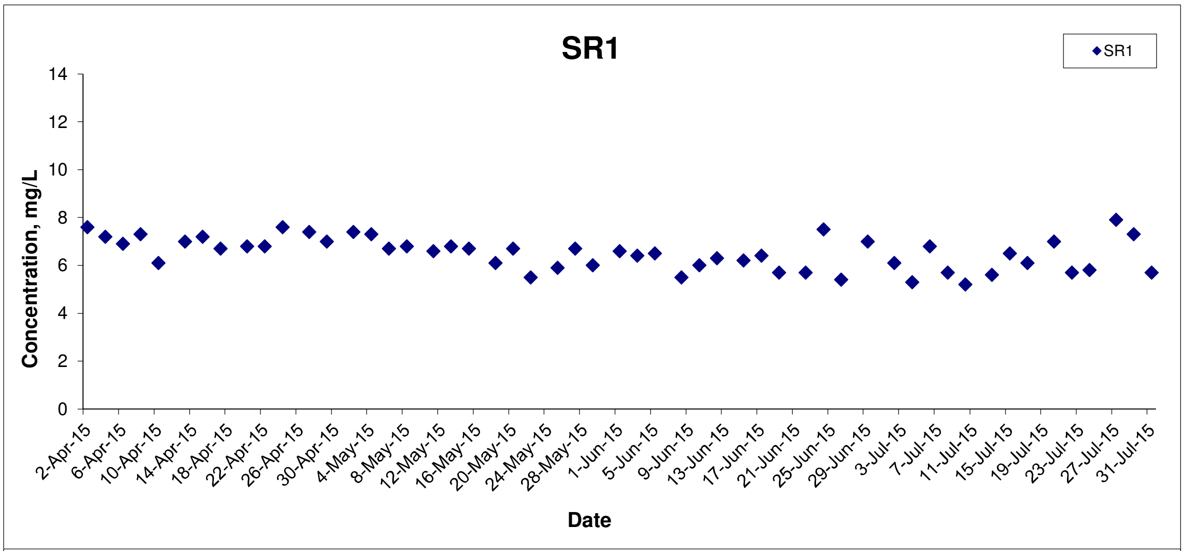


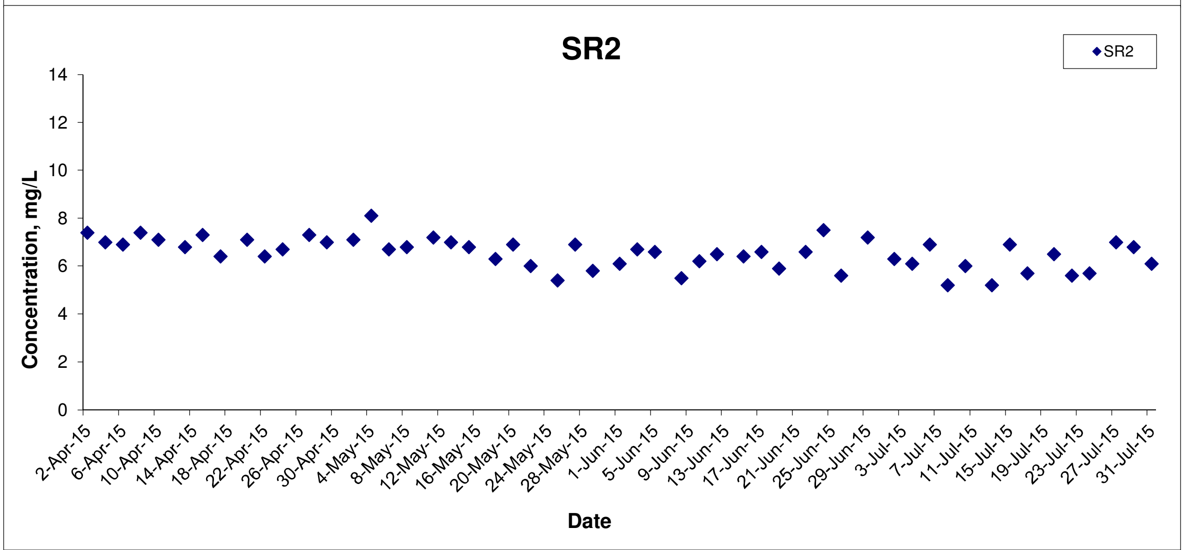


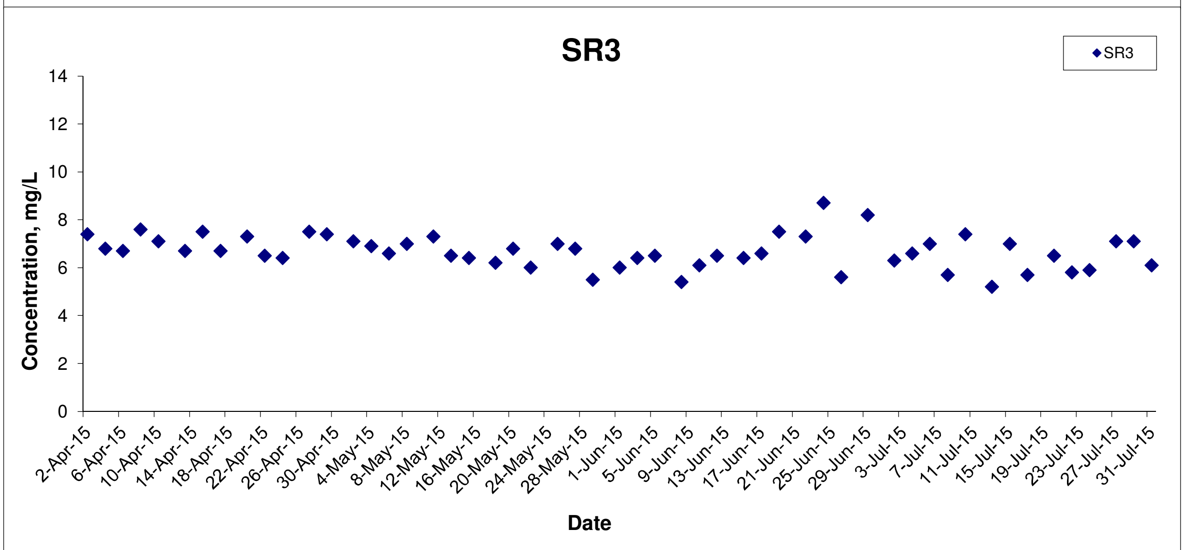


Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill	Scale N.T.S	Project No. MA12014	CINOTECH
	Graphical Presentation of Water Quality Monitoring Results	Date Jul 15	Appendix H	

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

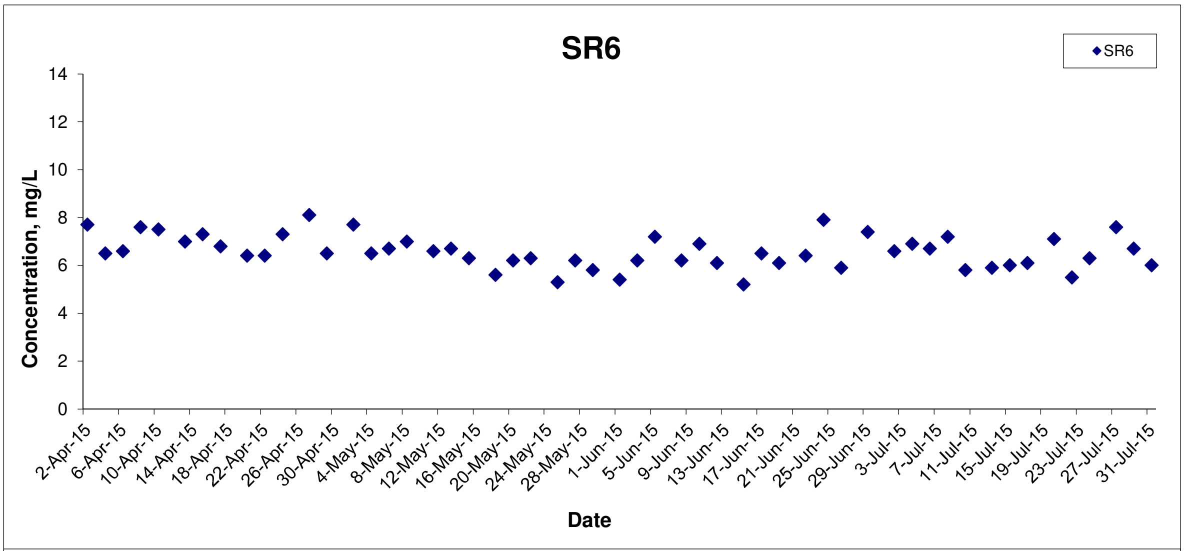


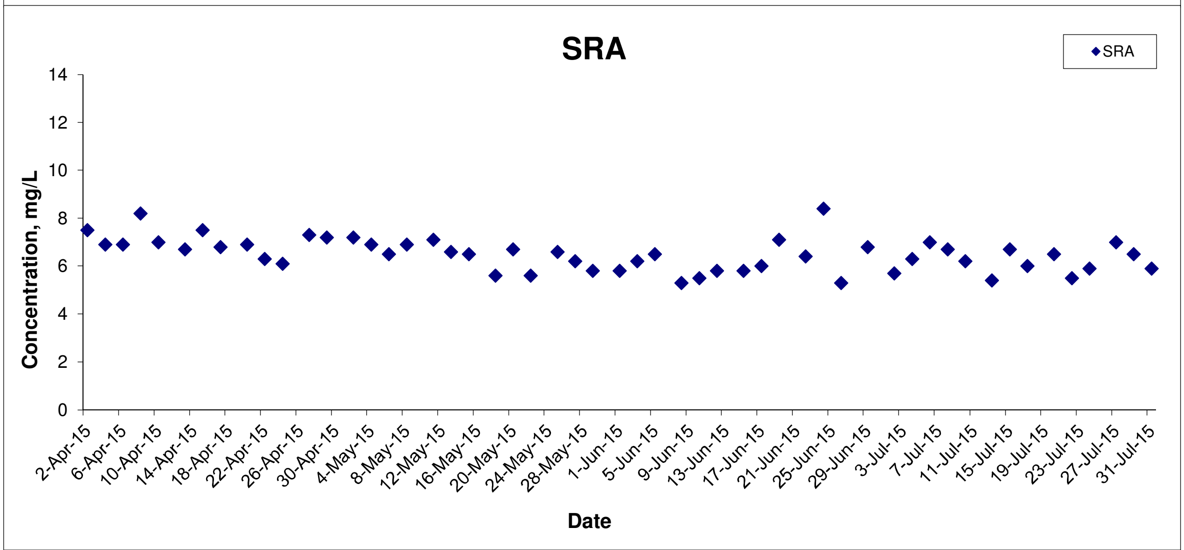


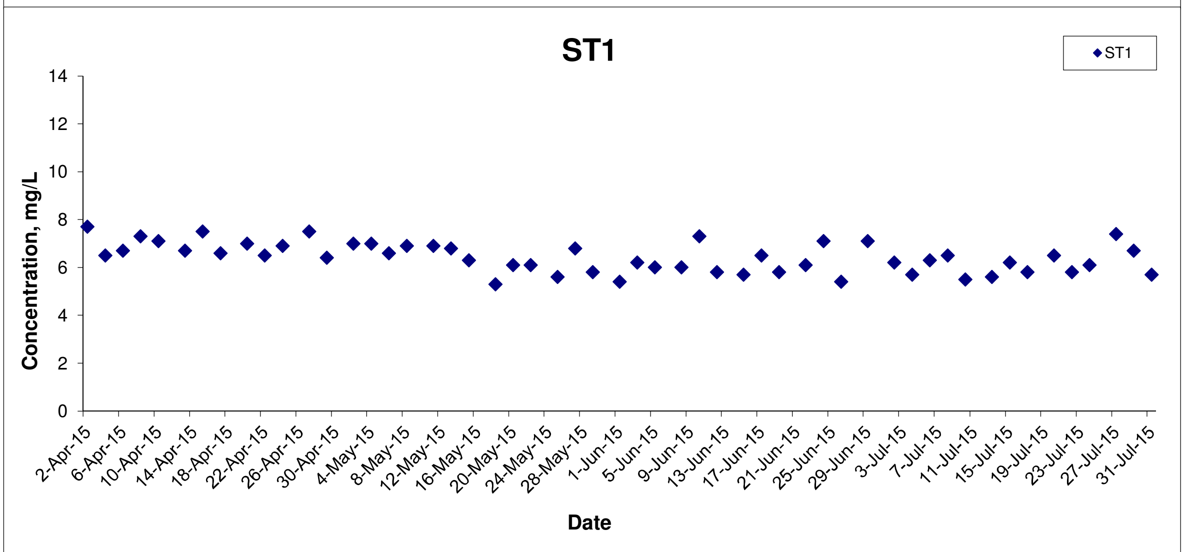


Title		Scale	Project No.	
	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	N.T.S	MA12014	CINOTECH
		Date: Jul 15	Appendix: H	

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

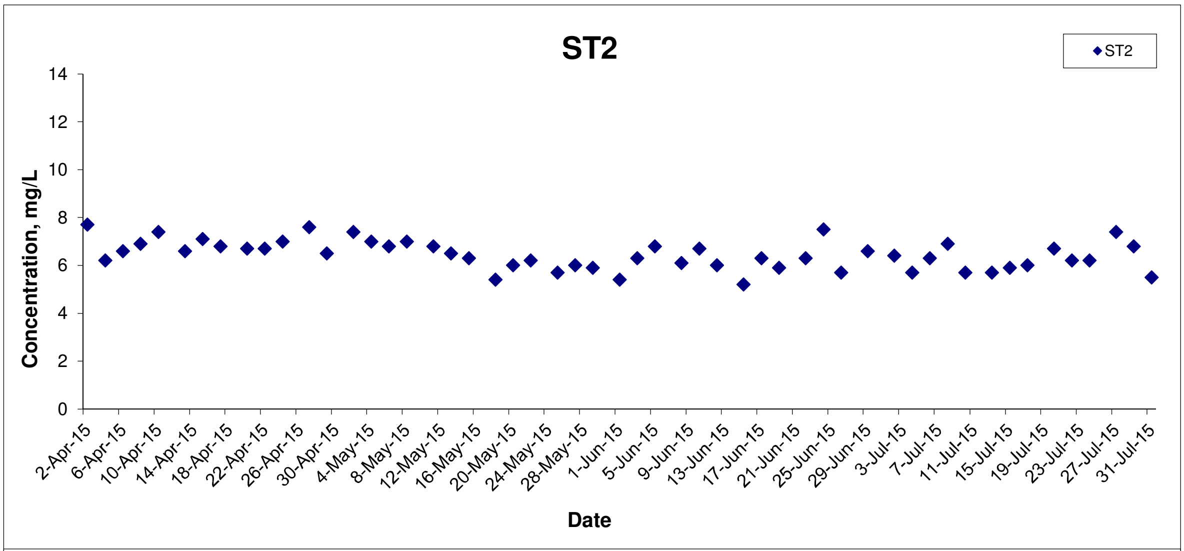


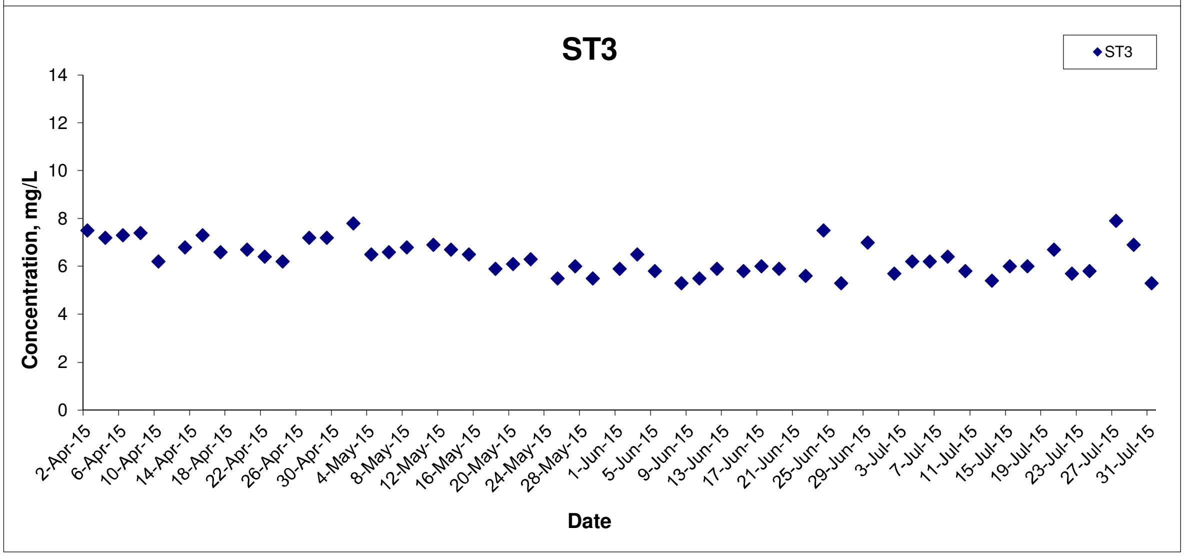




Title		Scale	Project	
	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	N.T.S	No. MA12014	CINOTECH
		Date Jul 15	Appendix H	

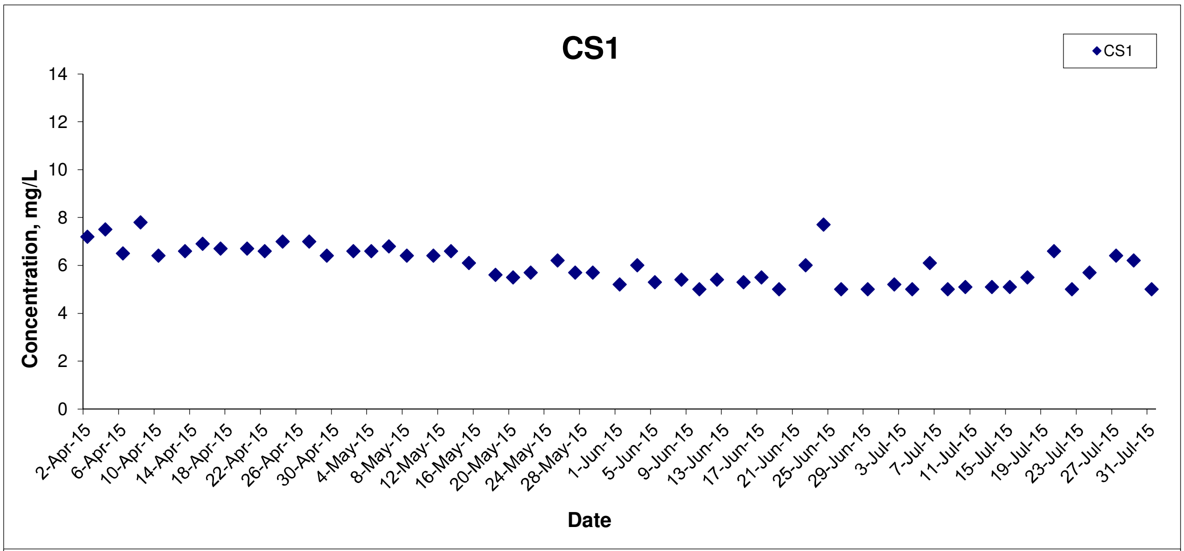
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

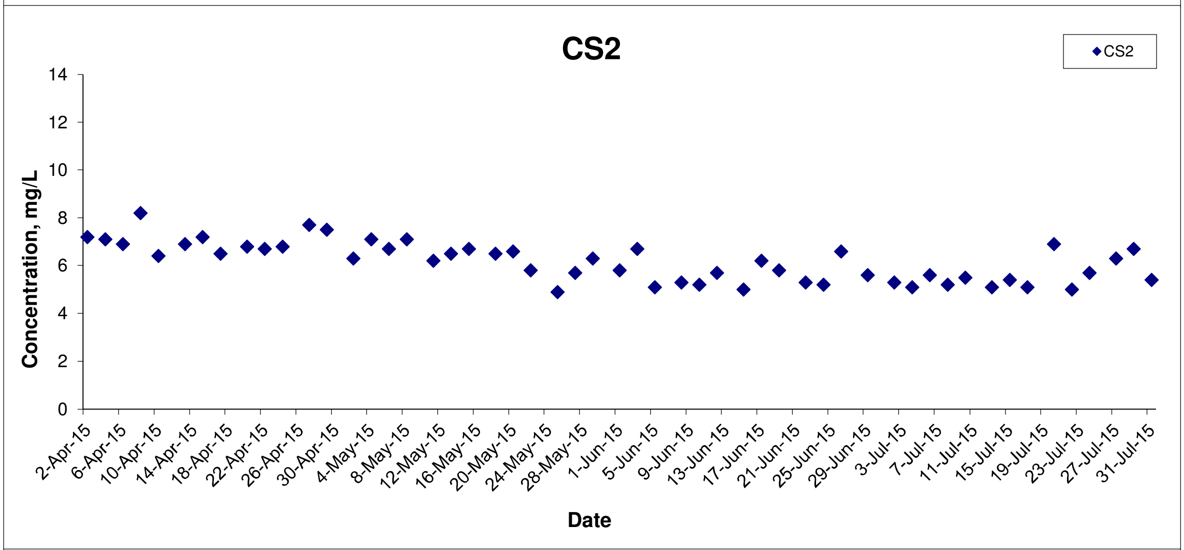


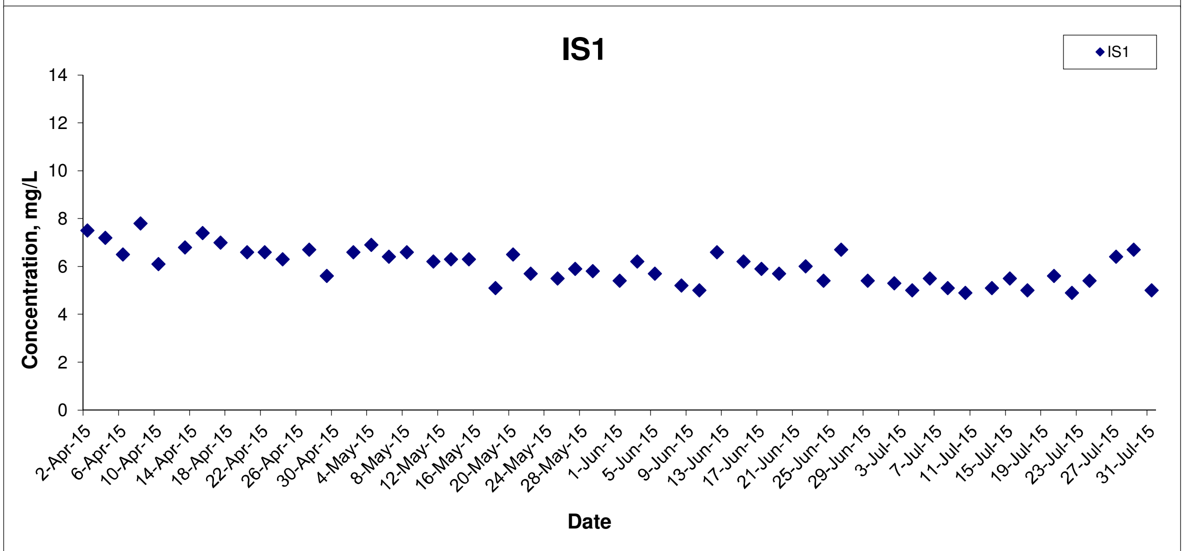


Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA12014	CINOTECH
		Date Jul 15	Appendix H	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide

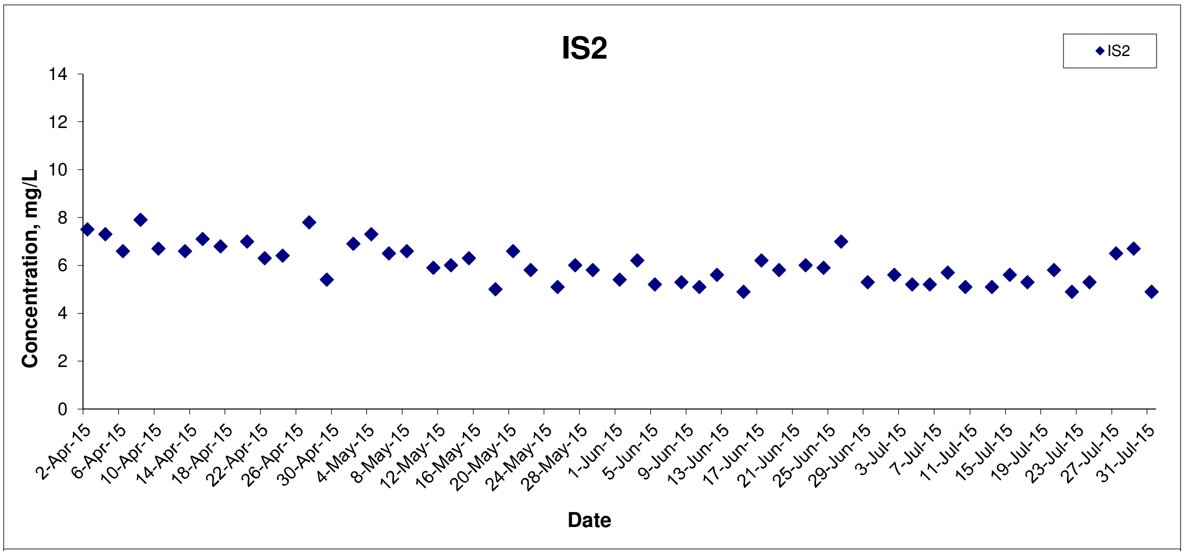


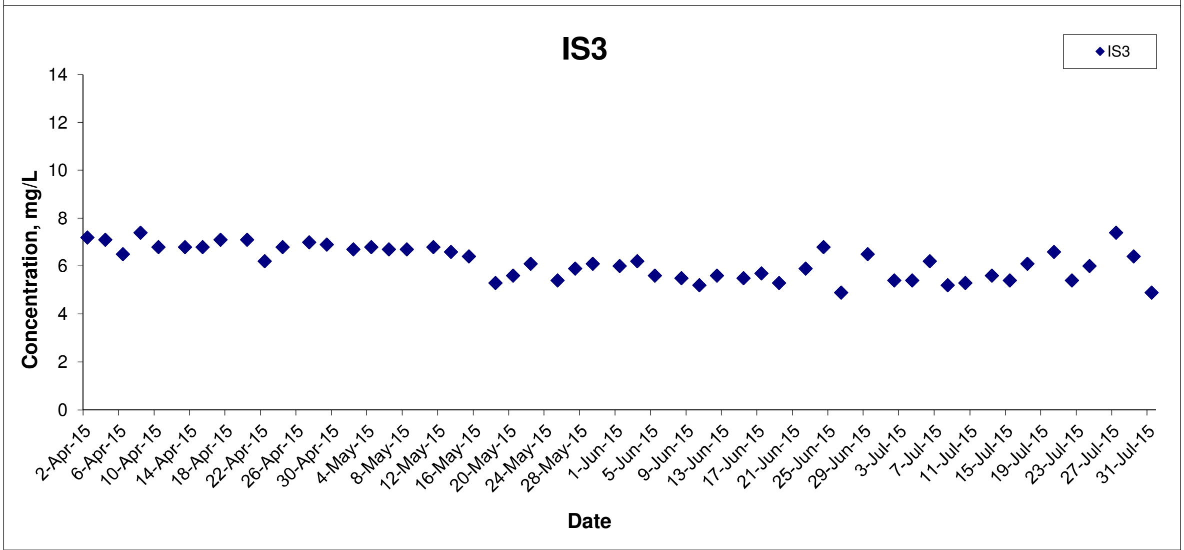


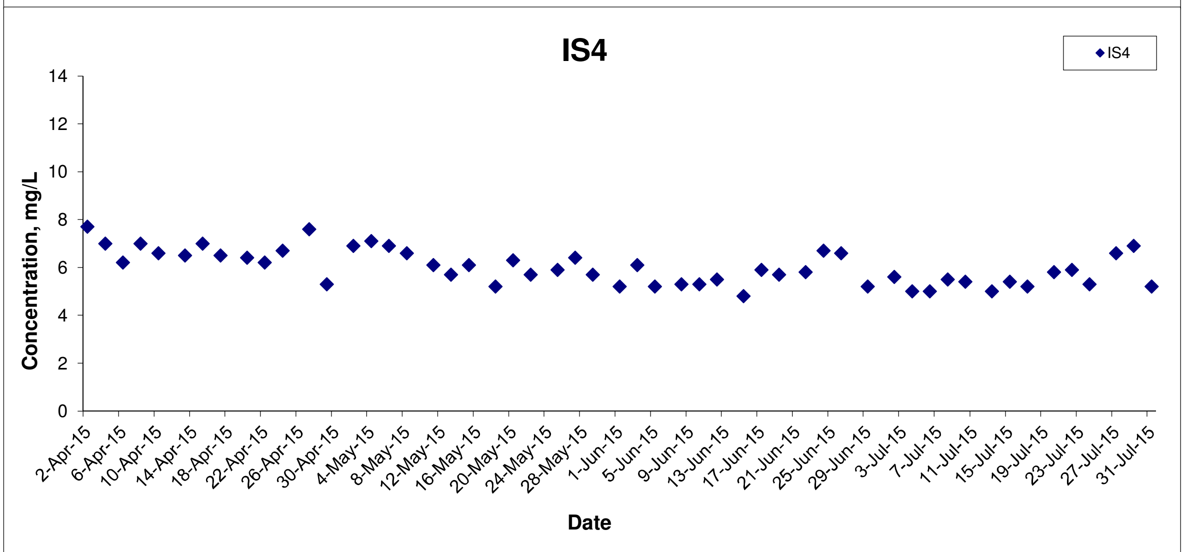


Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA12014	CINOTECH
		Date Jul 15	Appendix H	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide

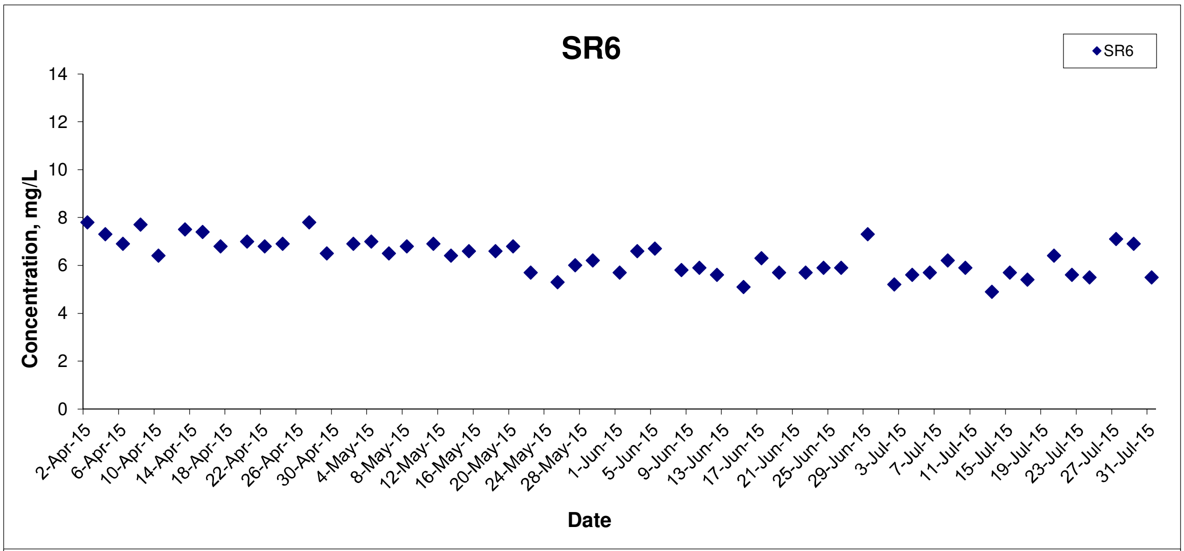


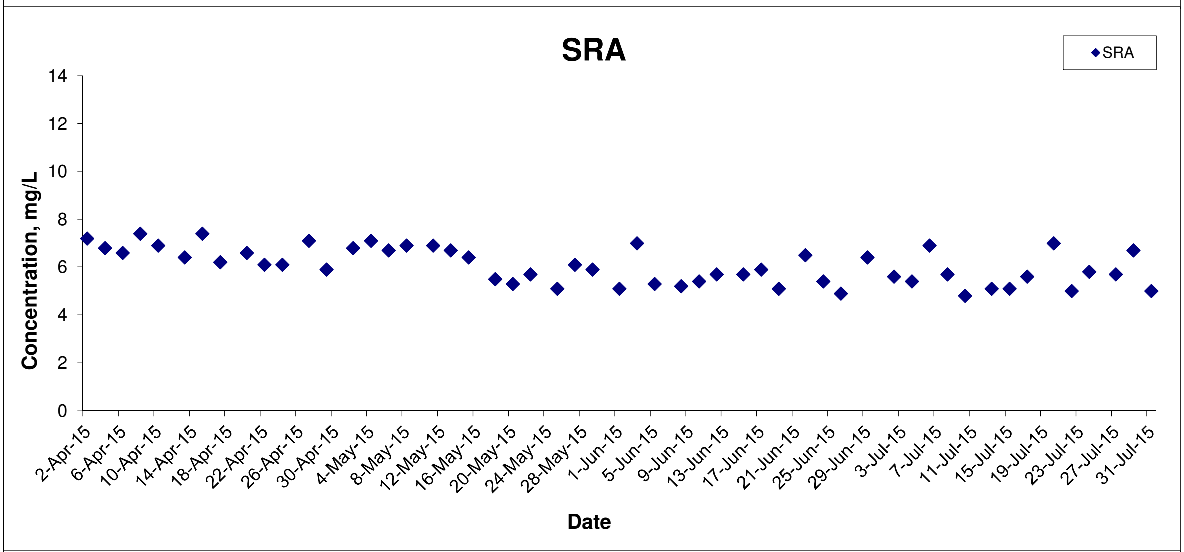


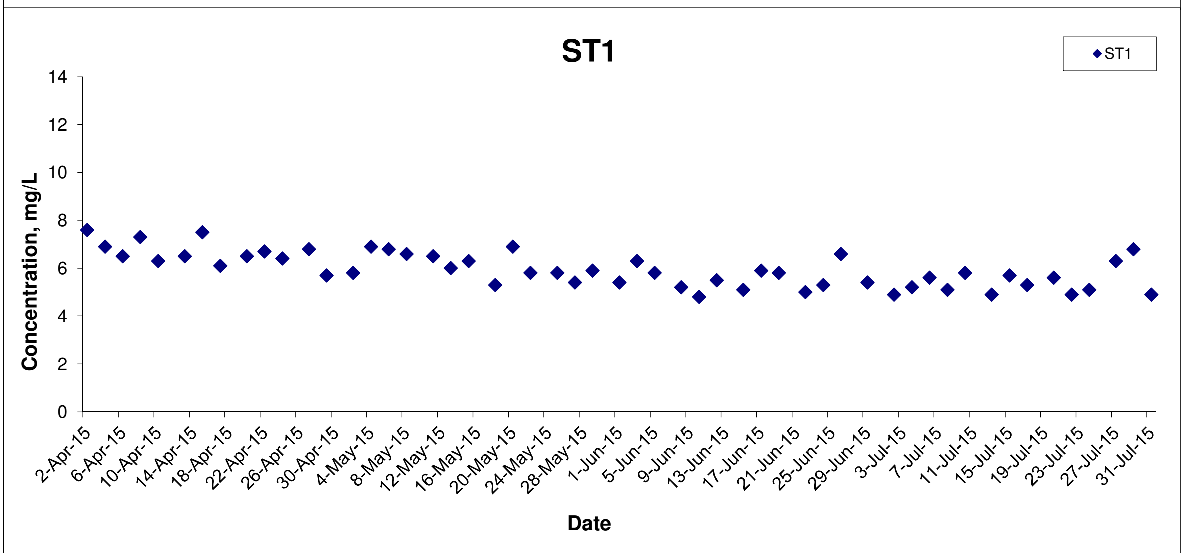


Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No. MA12014	CINOTECH
		Date: Jul 15	Appendix: H	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide

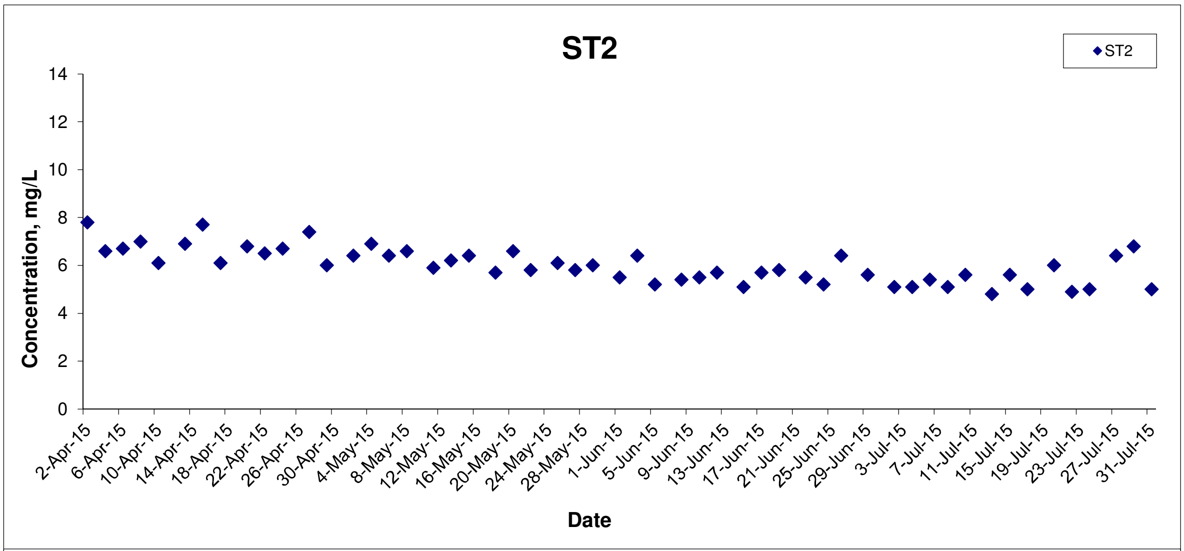


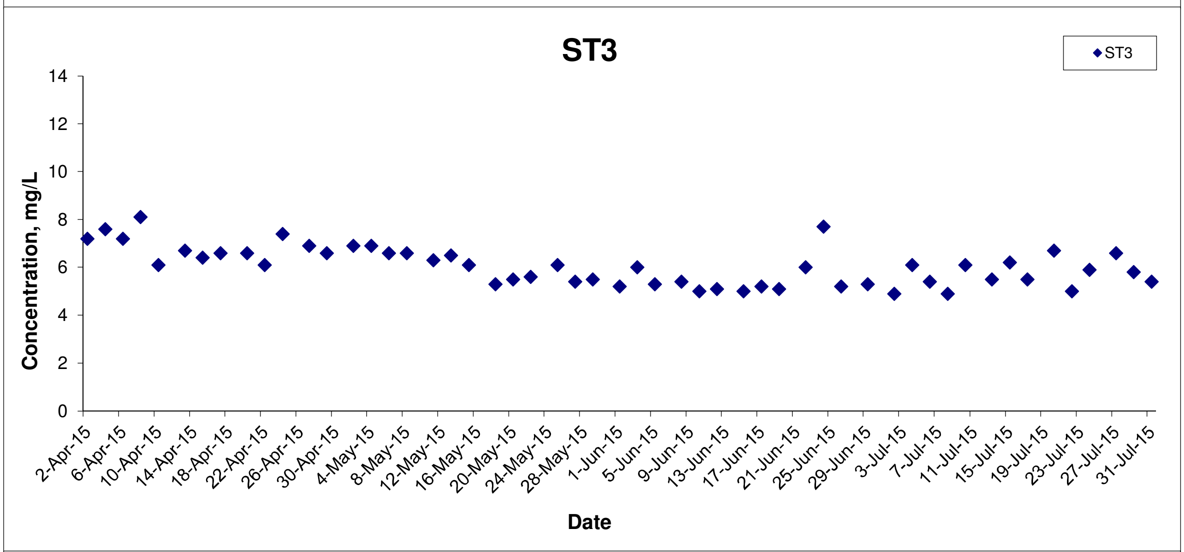


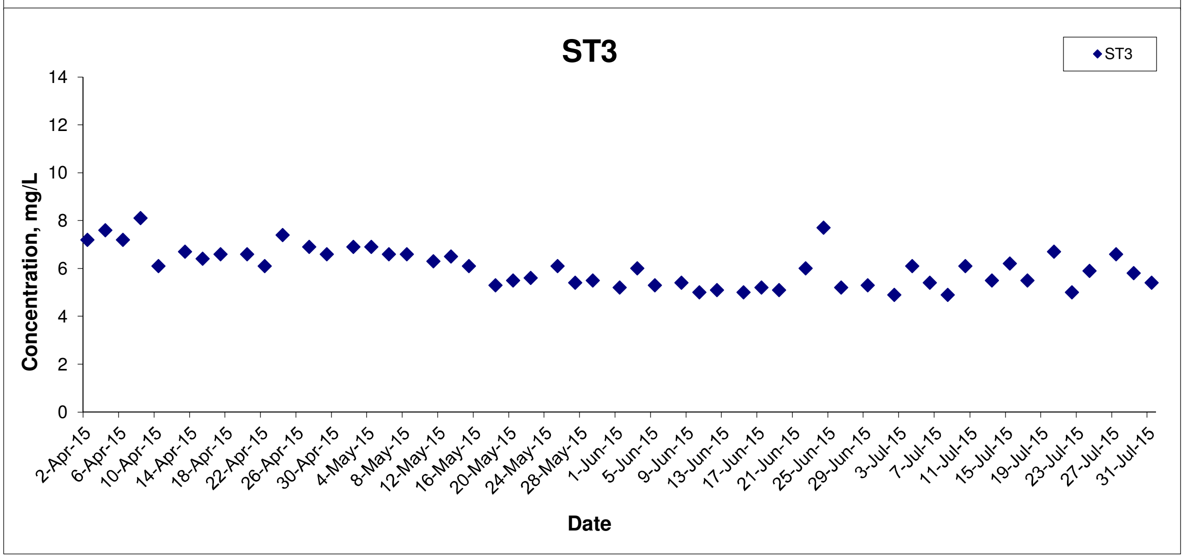


Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA12014	CINOTECH
		Date Jul 15	Appendix H	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide

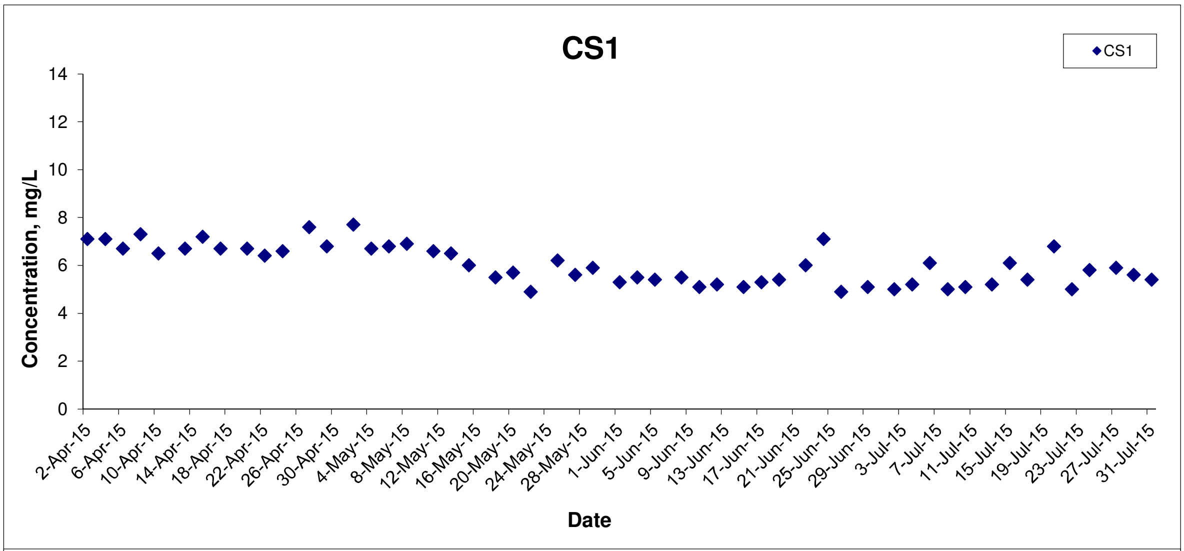


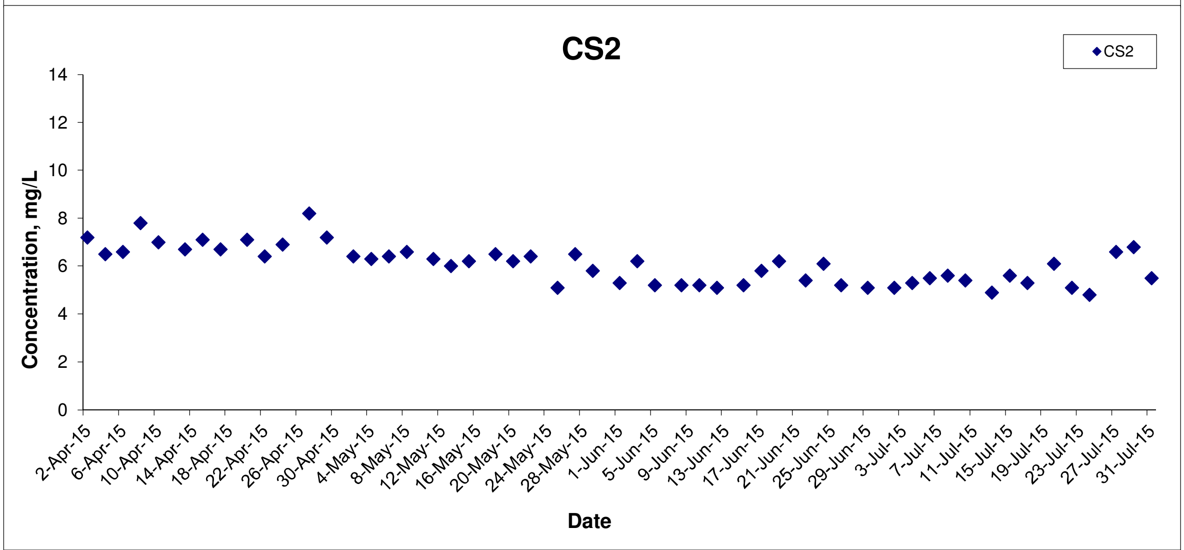


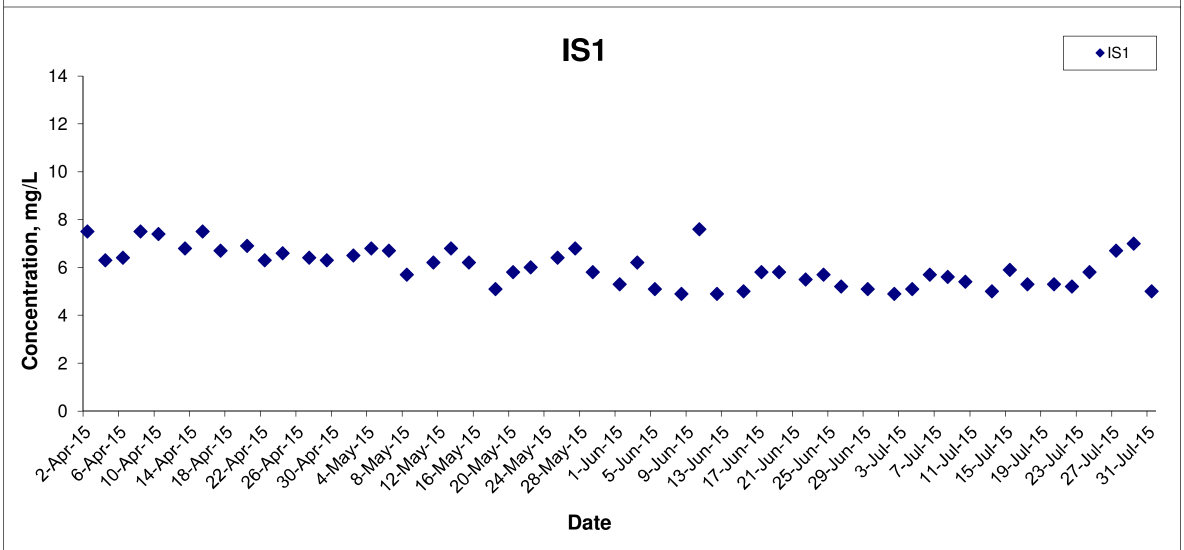


Title		Scale	Project No.	
	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	N.T.S	MA12014	CINOTECH
		Date Jul 15	Appendix H	

Dissolved Oxygen (Bottom) at Mid-Flood Tide

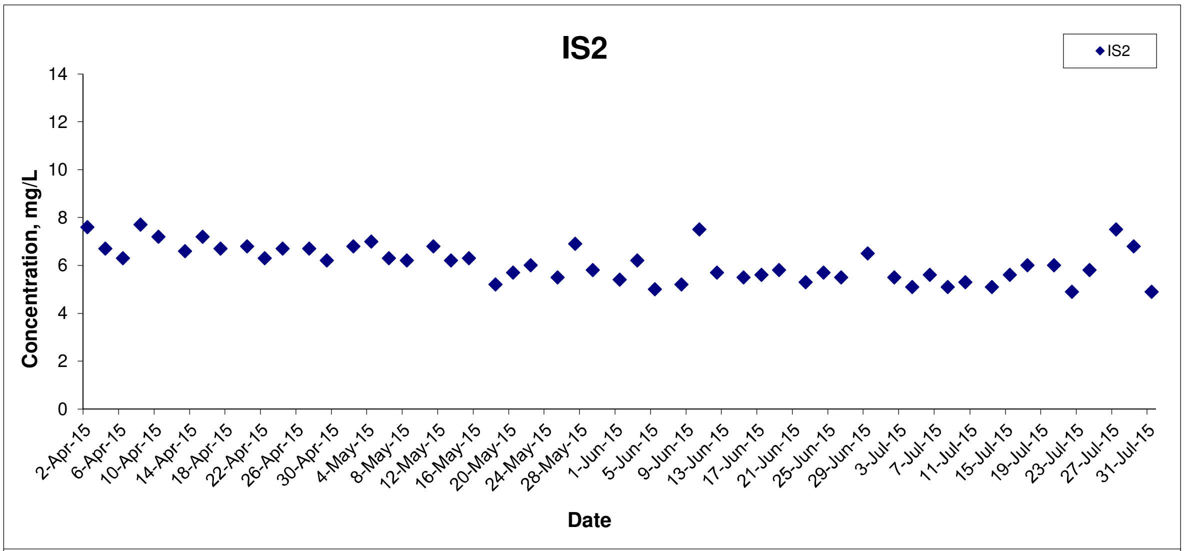


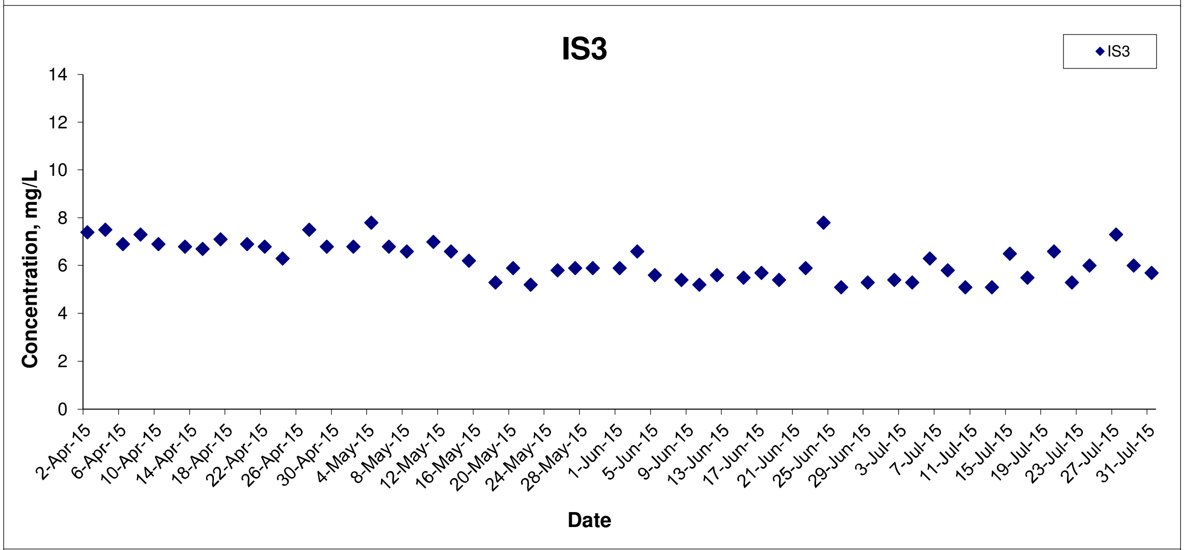


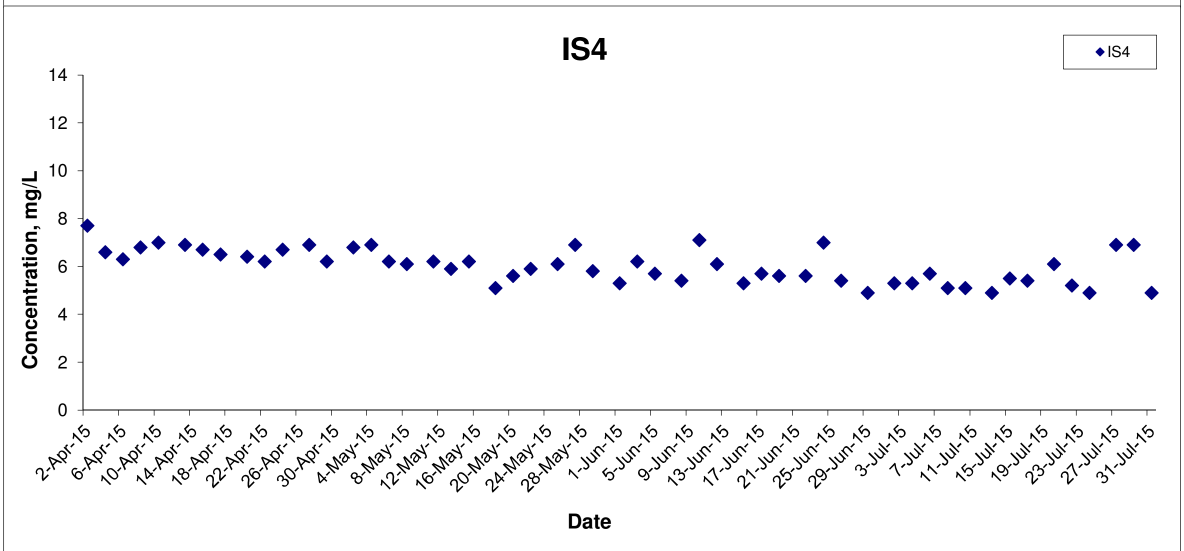


Title: Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No. MA12014	CINOTECH
	Date: Jul 15	Appendix: H	

Dissolved Oxygen (Bottom) at Mid-Flood Tide

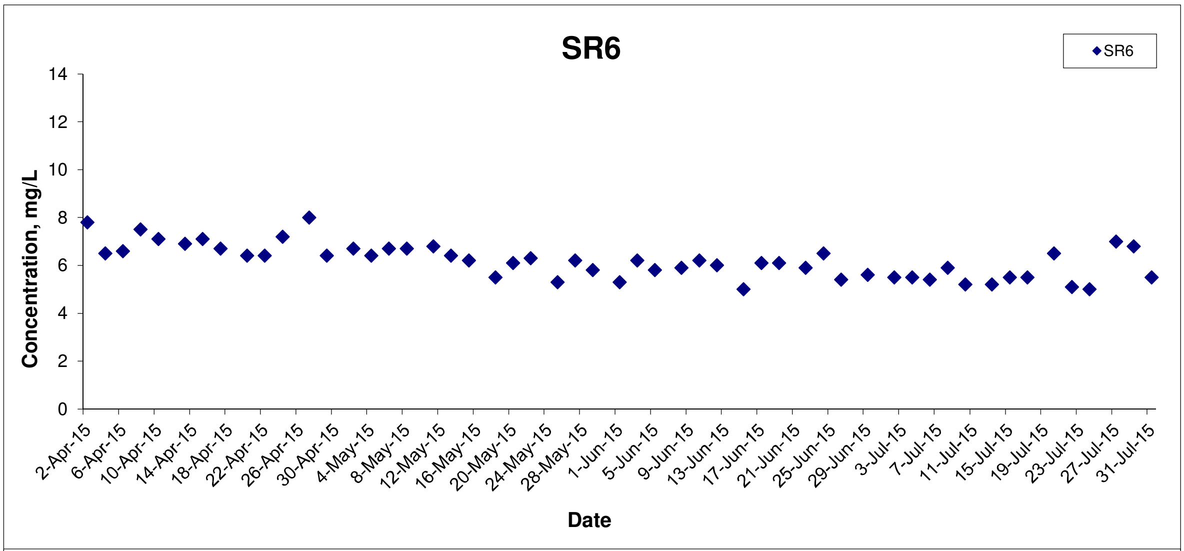


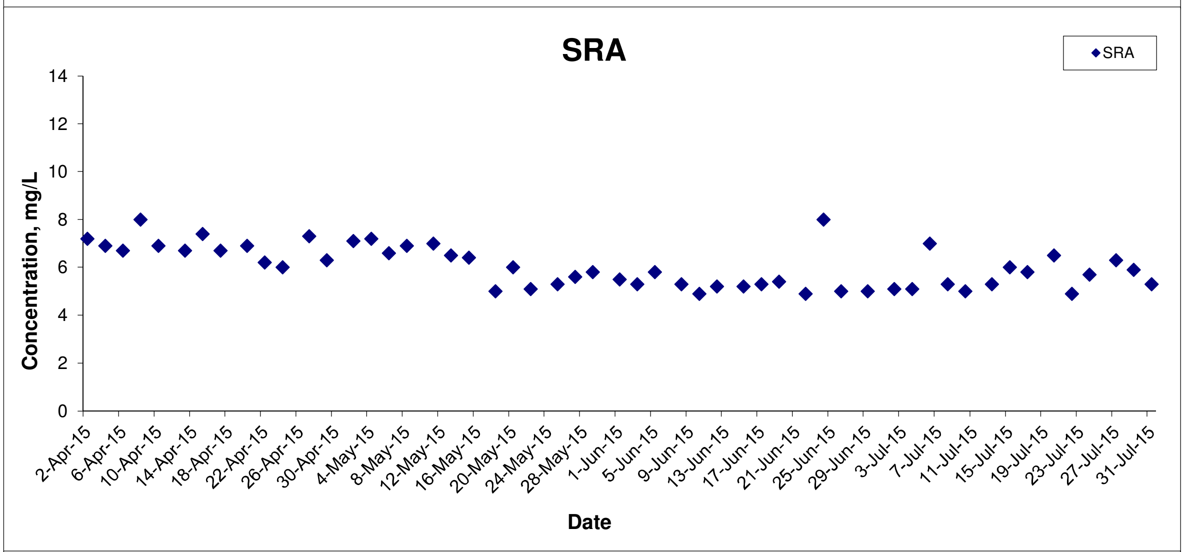


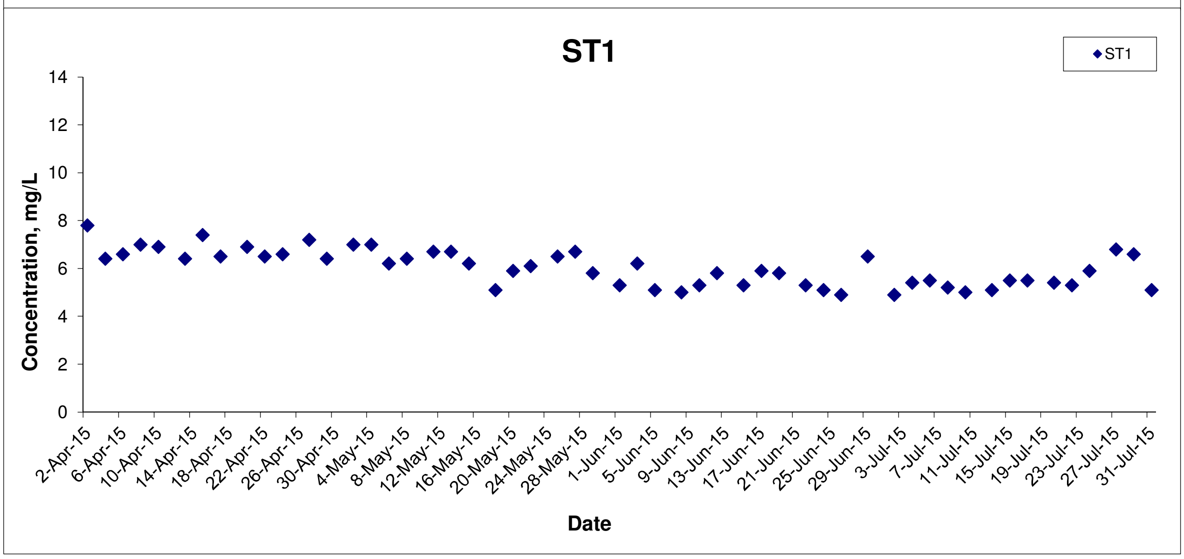


Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA12014	CINOTECH
		Date Jul 15	Appendix H	

Dissolved Oxygen (Bottom) at Mid-Flood Tide

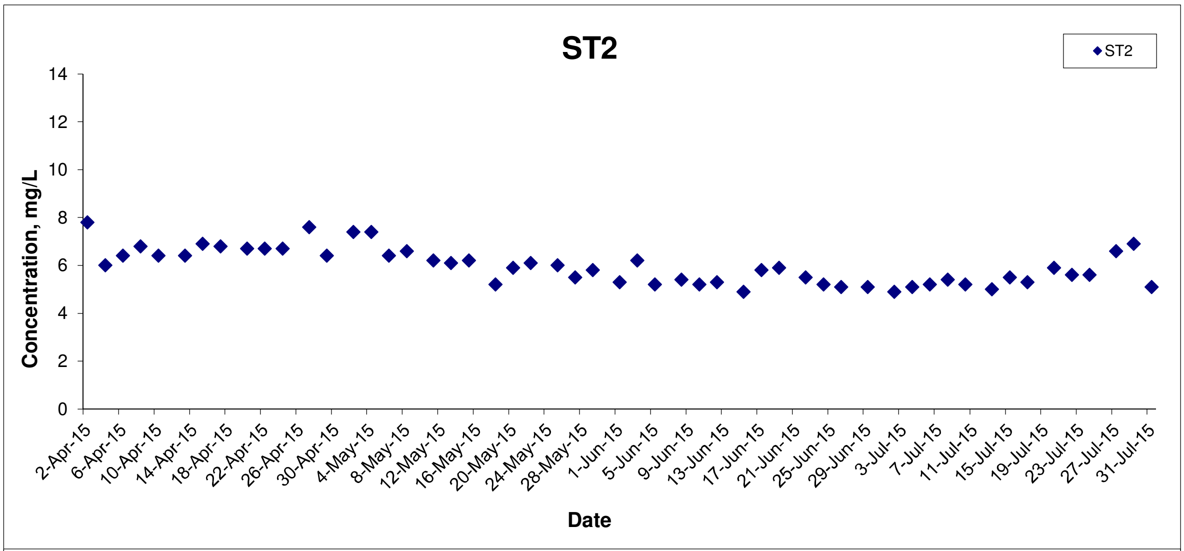


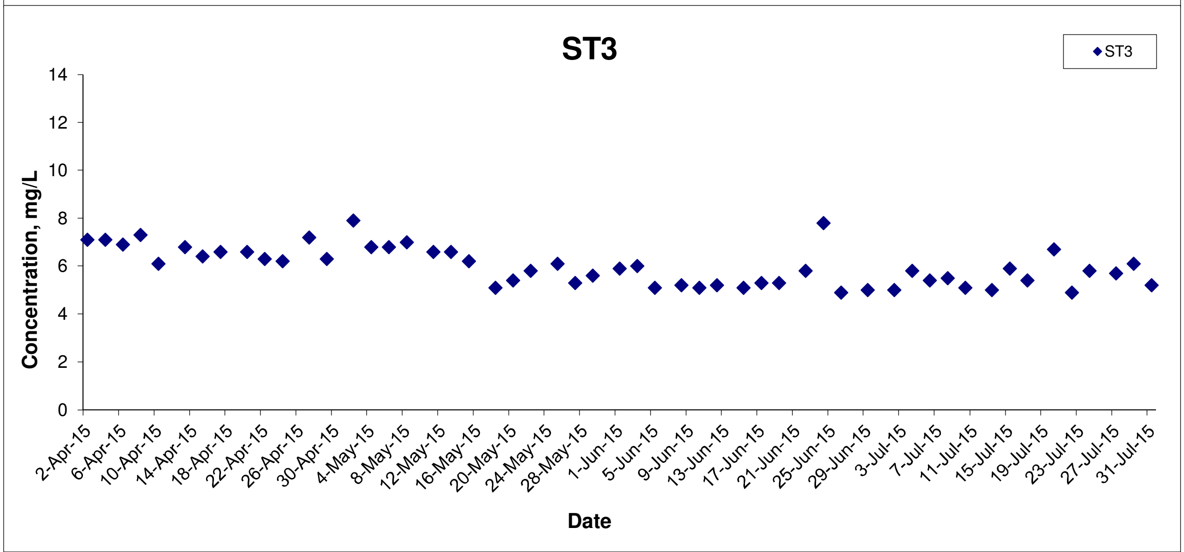




Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA12014	CINOTECH
		Date: Jul 15	Appendix: H	

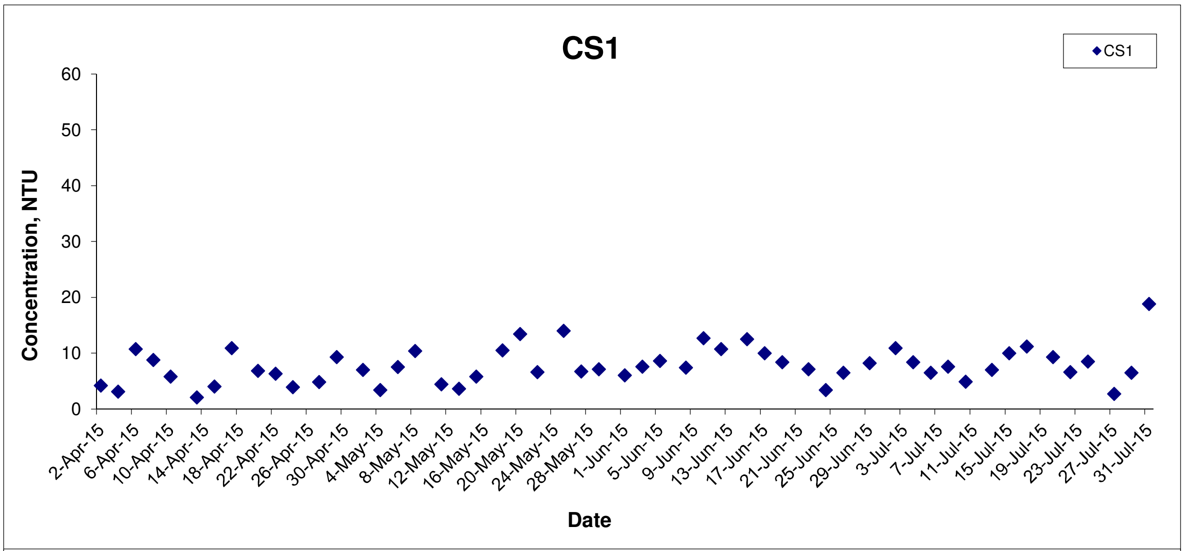
Dissolved Oxygen (Bottom) at Mid-Flood Tide

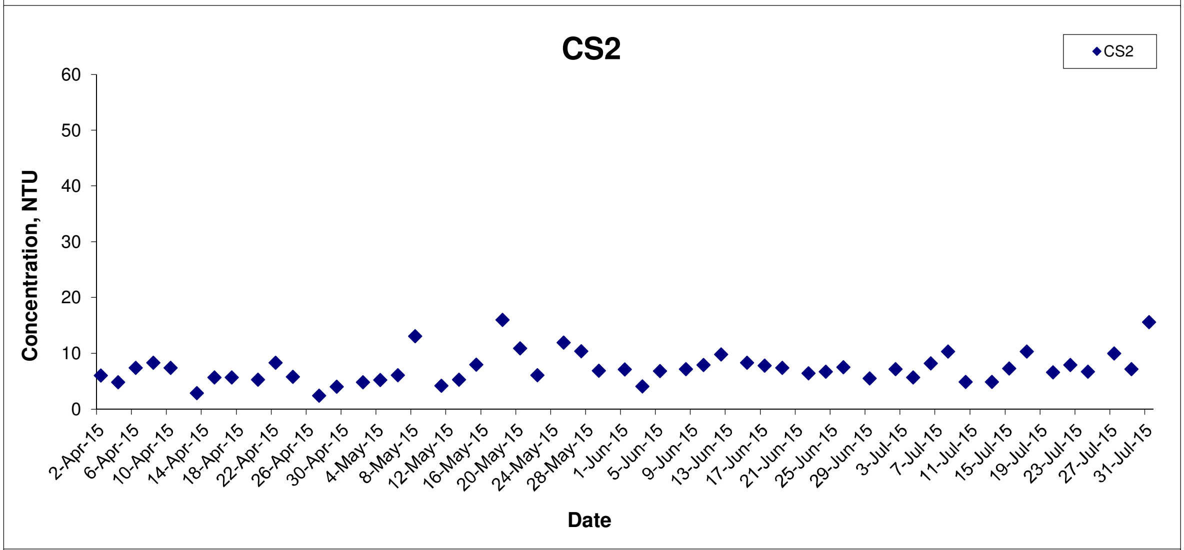


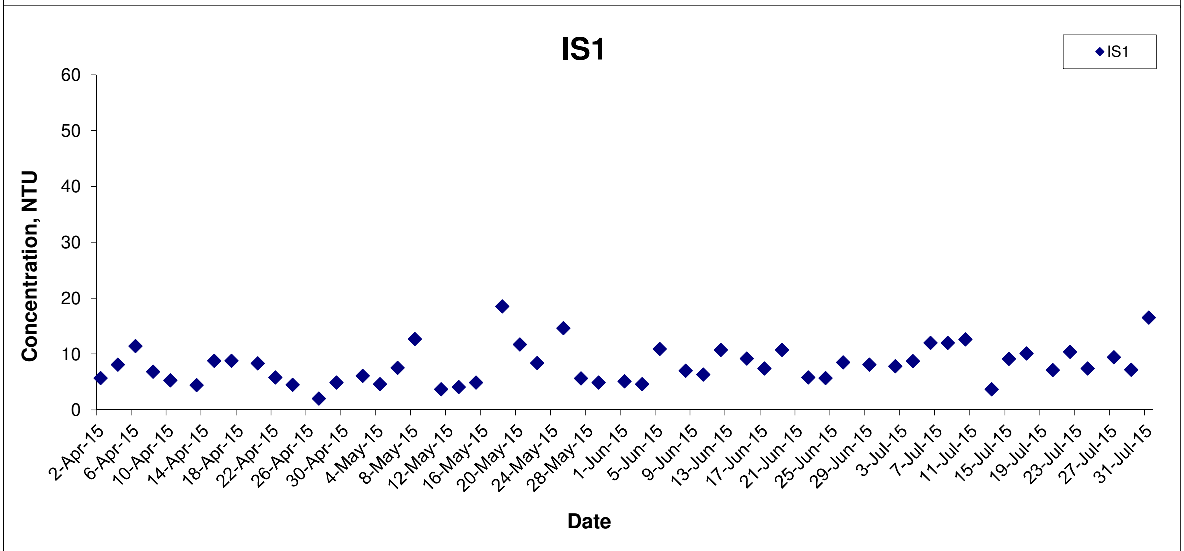


Title	Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No. MA12014	CINOTECH
		Date: Jul 15	Appendix: H	

Turbidity (Depth-averaged) at Mid-Ebb Tide







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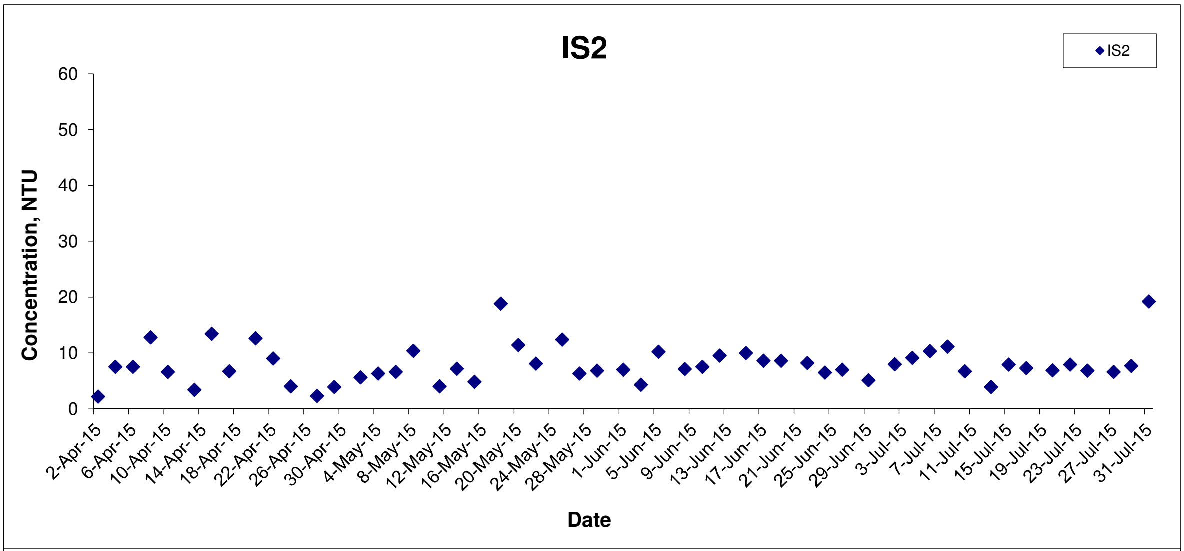

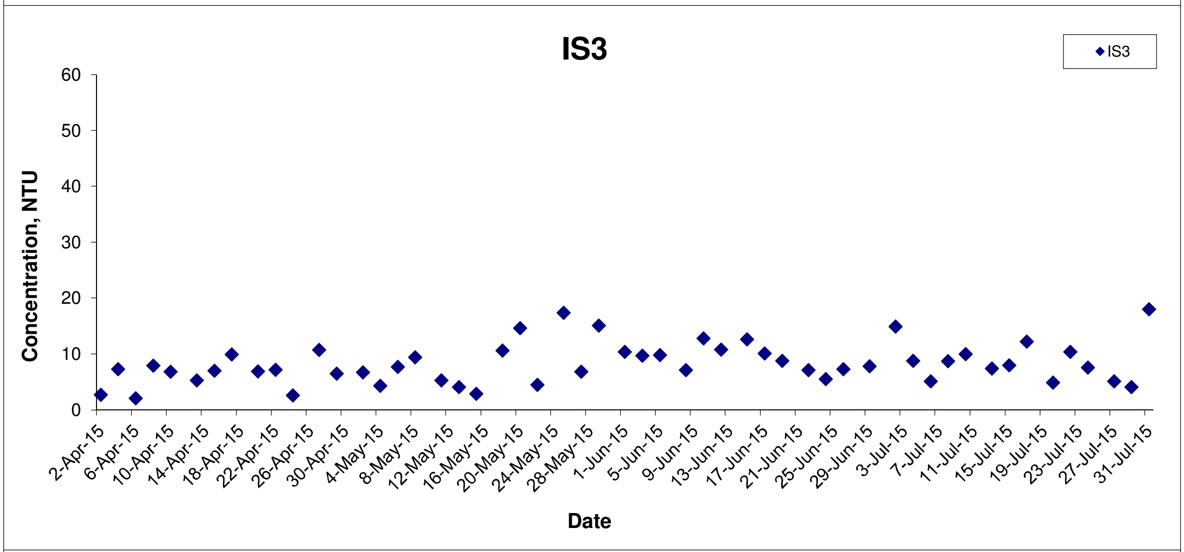

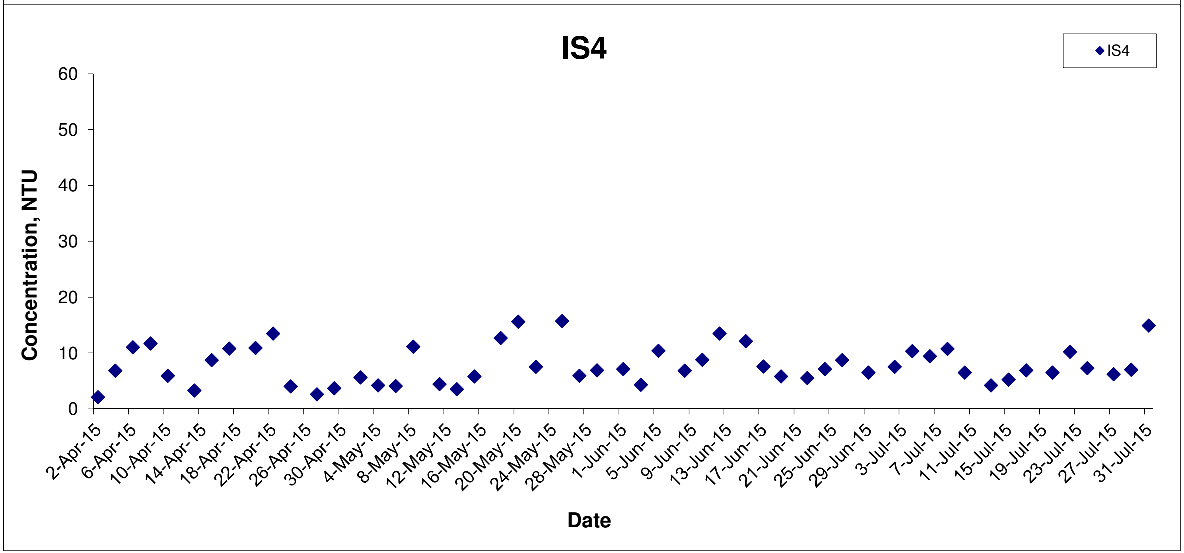

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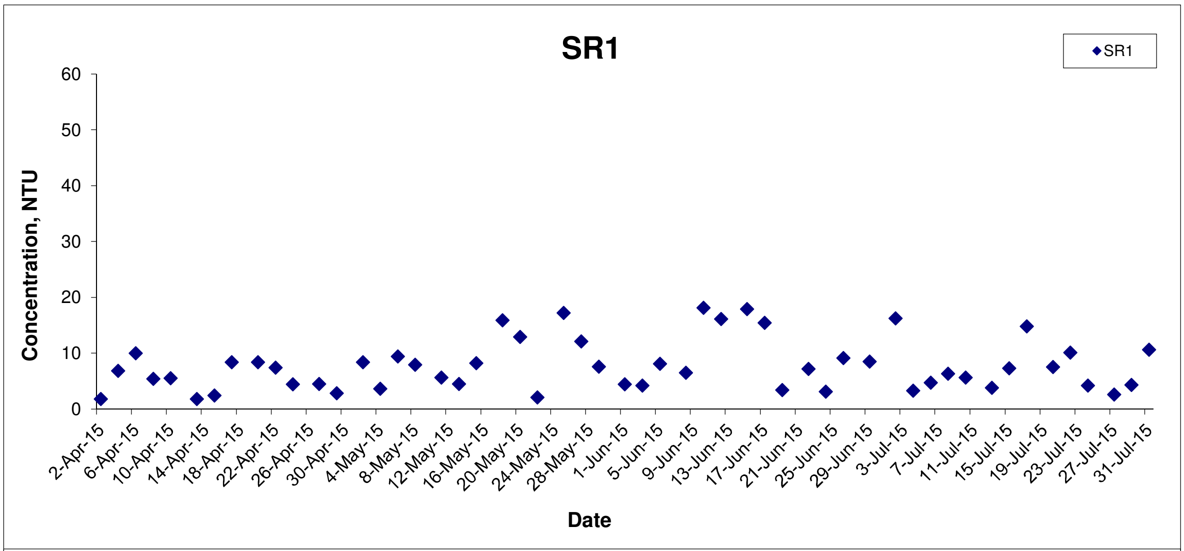

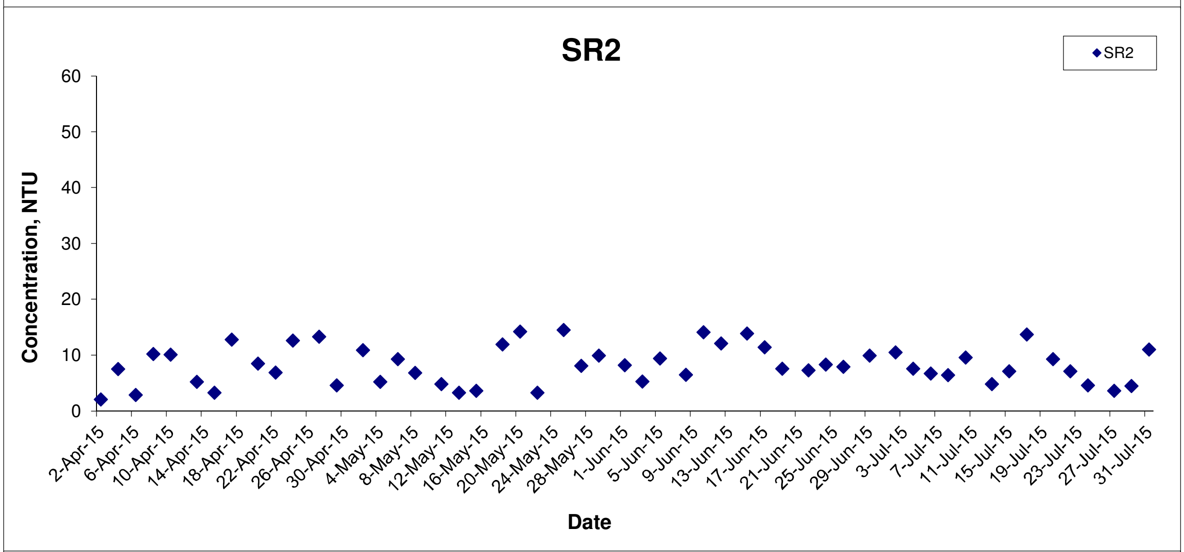

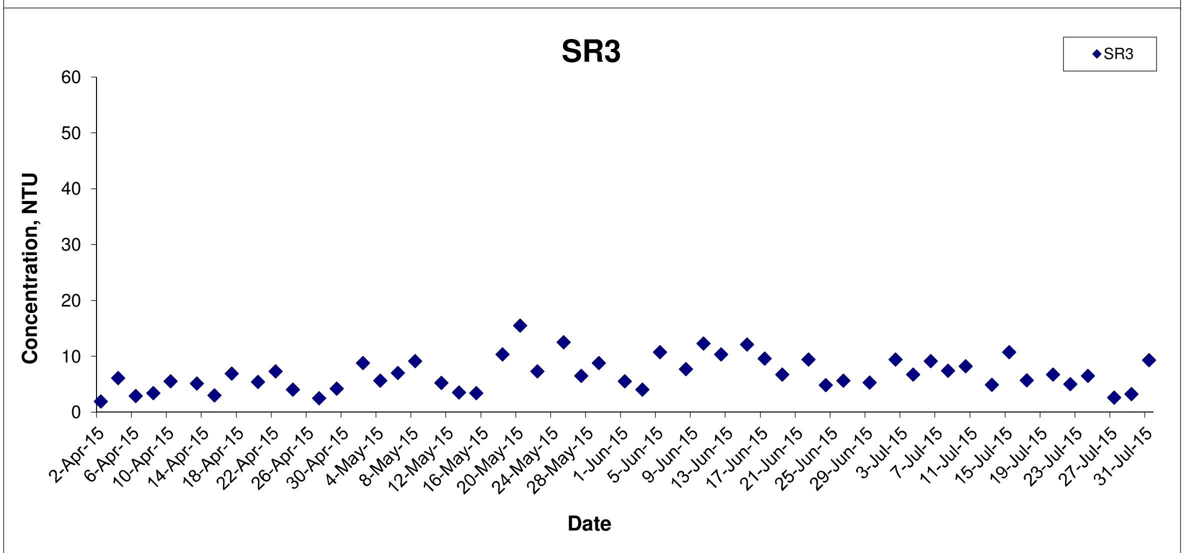

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		Date Jul 15	Appendix H	

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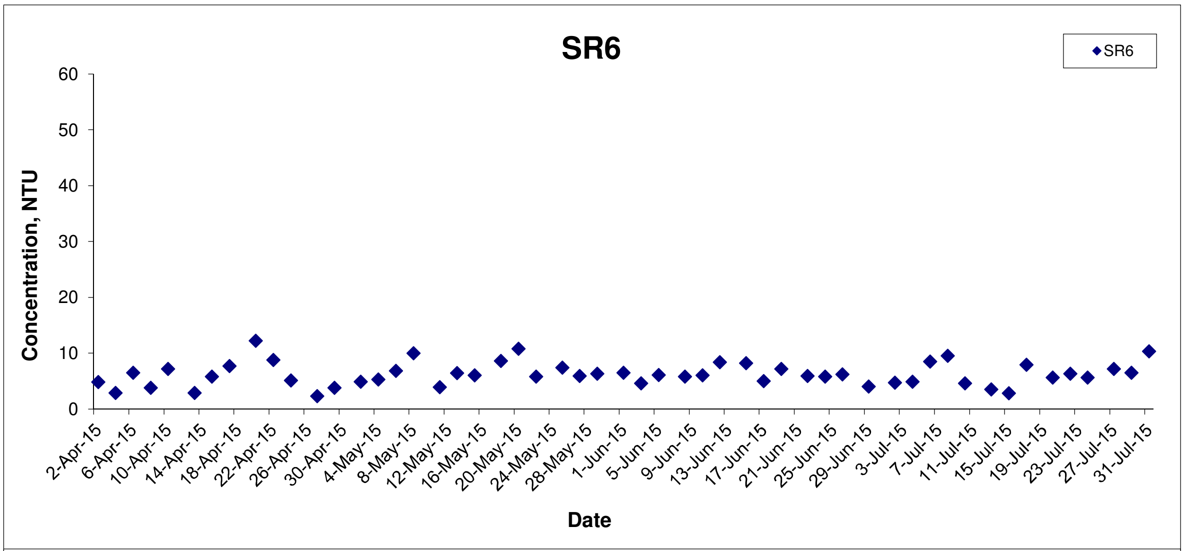

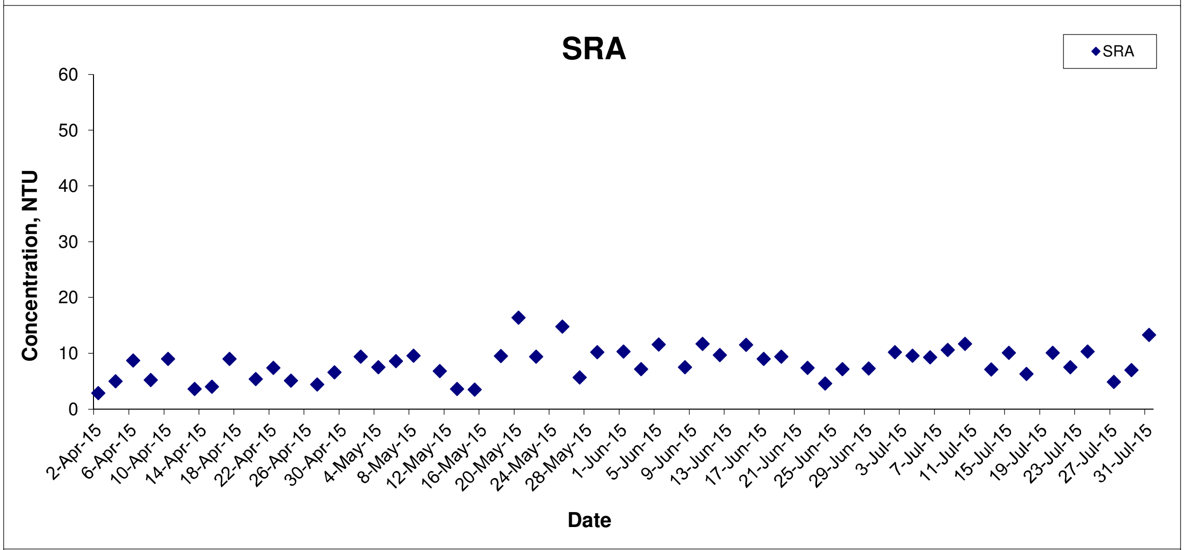

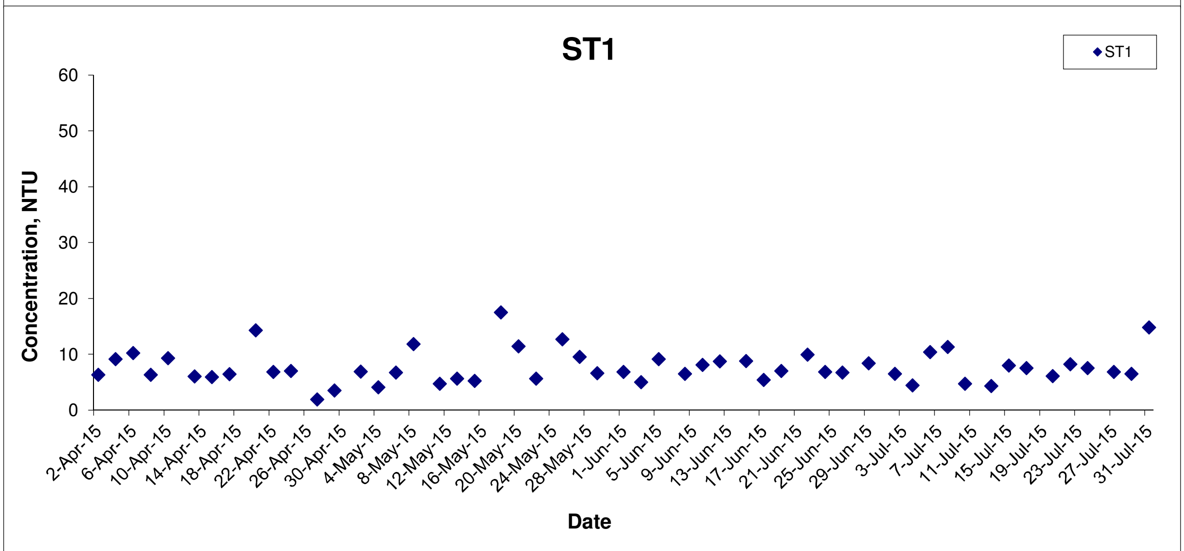

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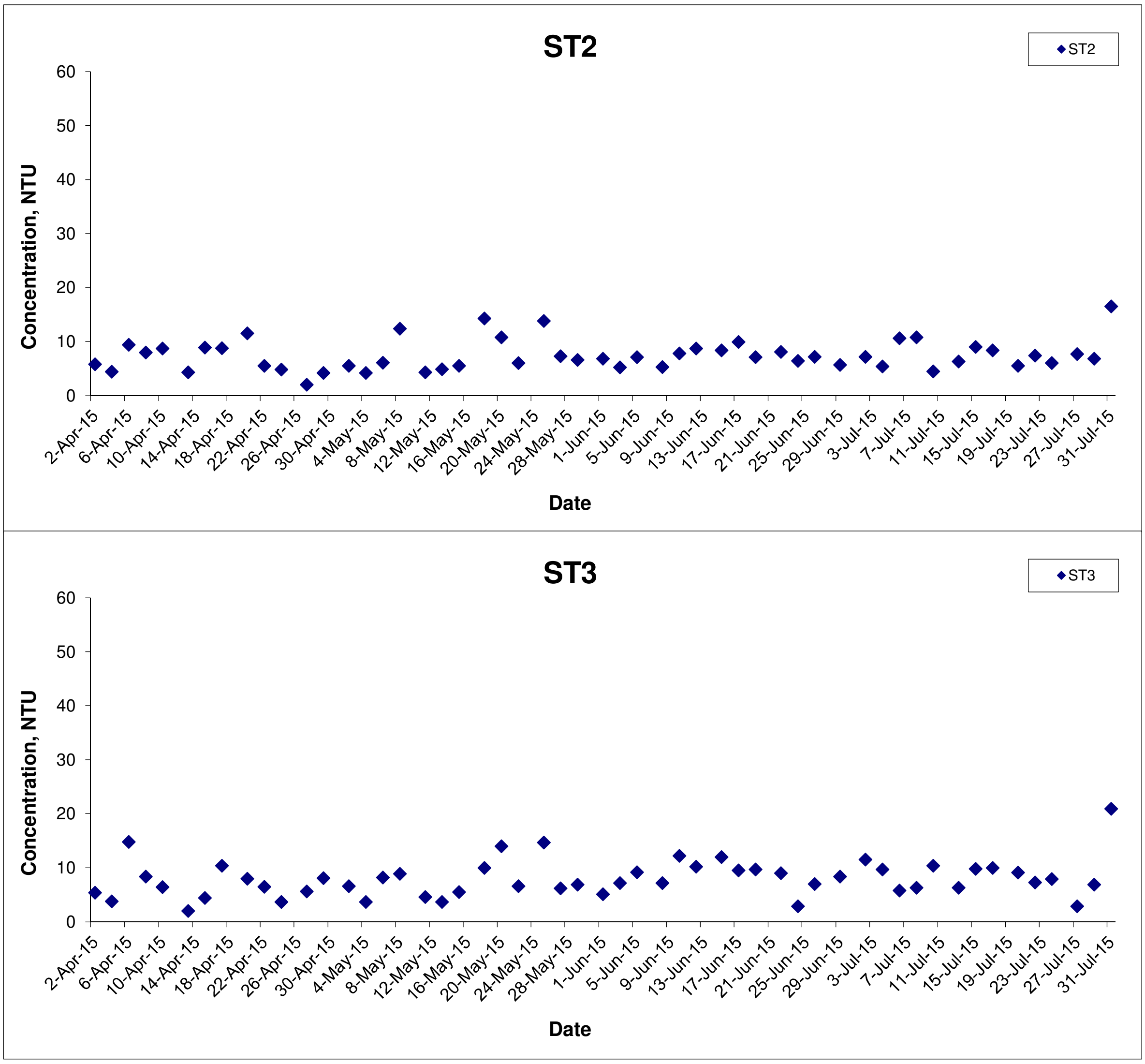
	Date: Jul 15	Appendix: H	

Turbidity (Depth-averaged) at Mid-Ebb Tide



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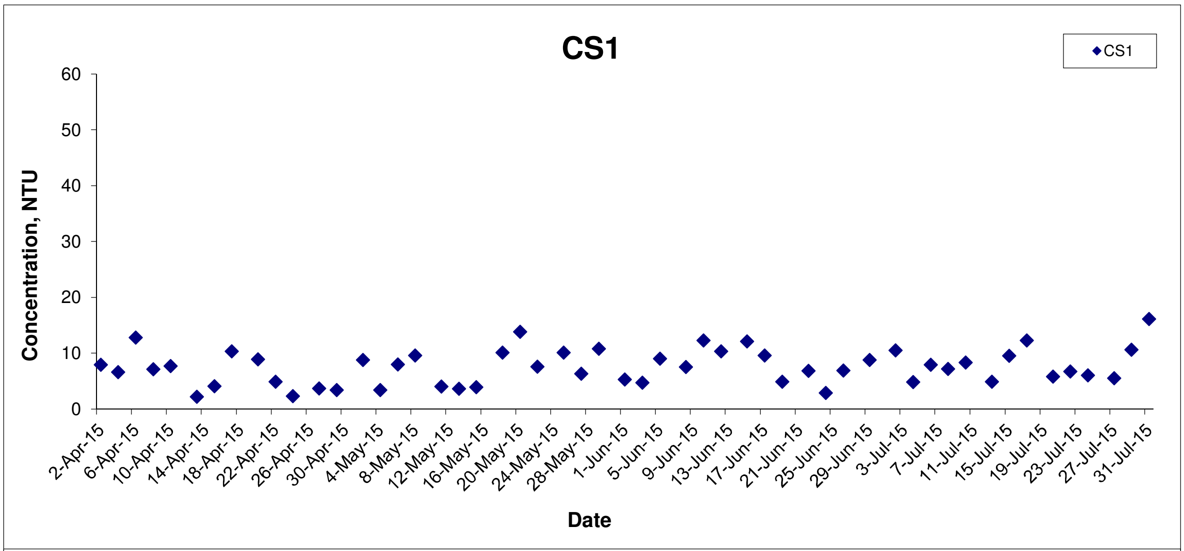
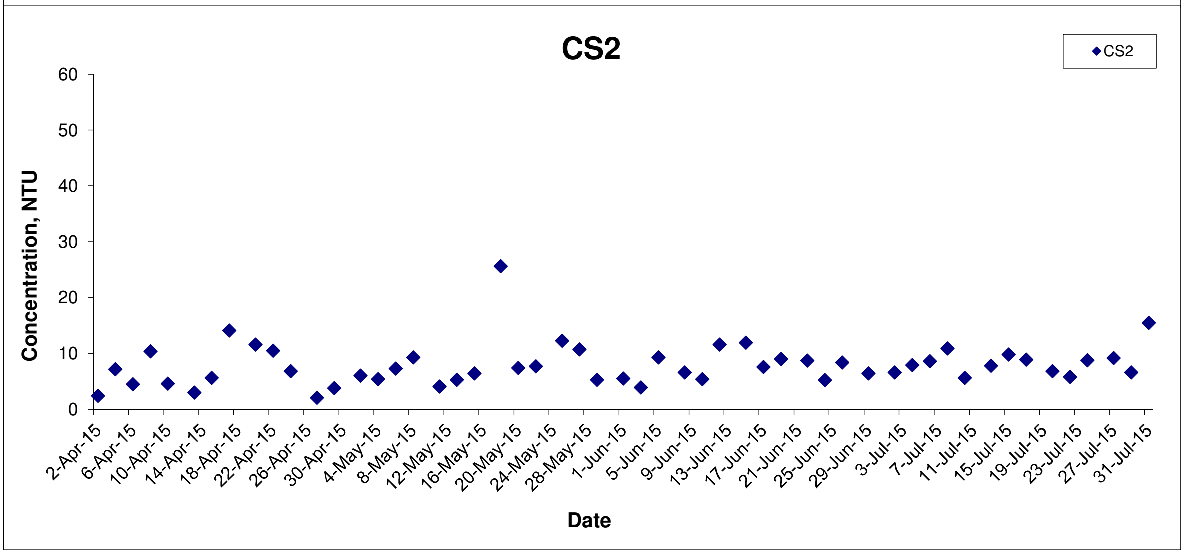
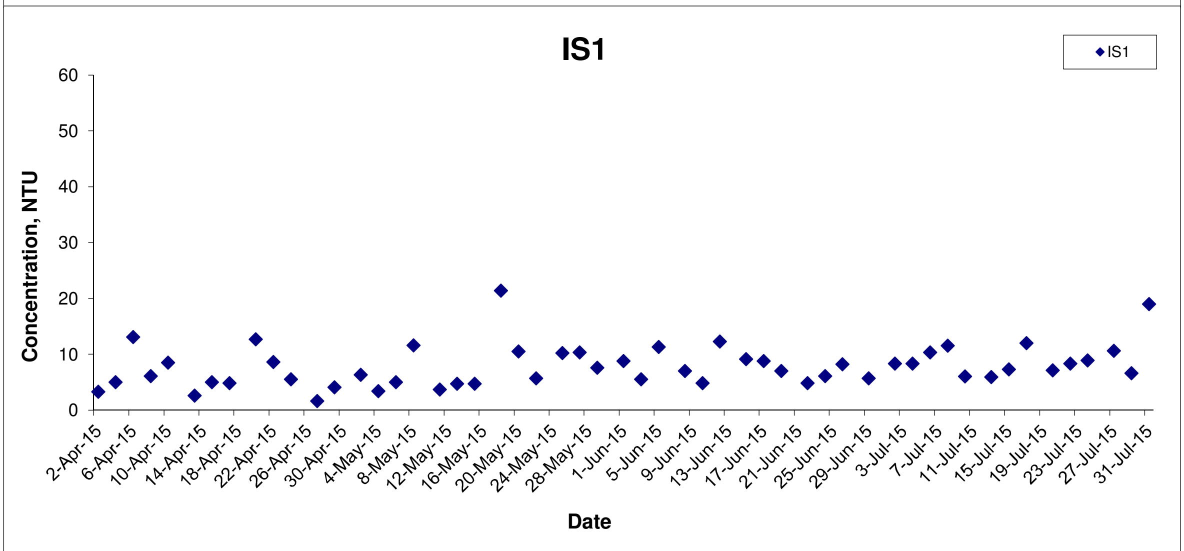
		Date Jul 15	Appendix H	

Turbidity (Depth-averaged) at Mid-Flood Tide







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		Date: Jul 15	Appendix: H	

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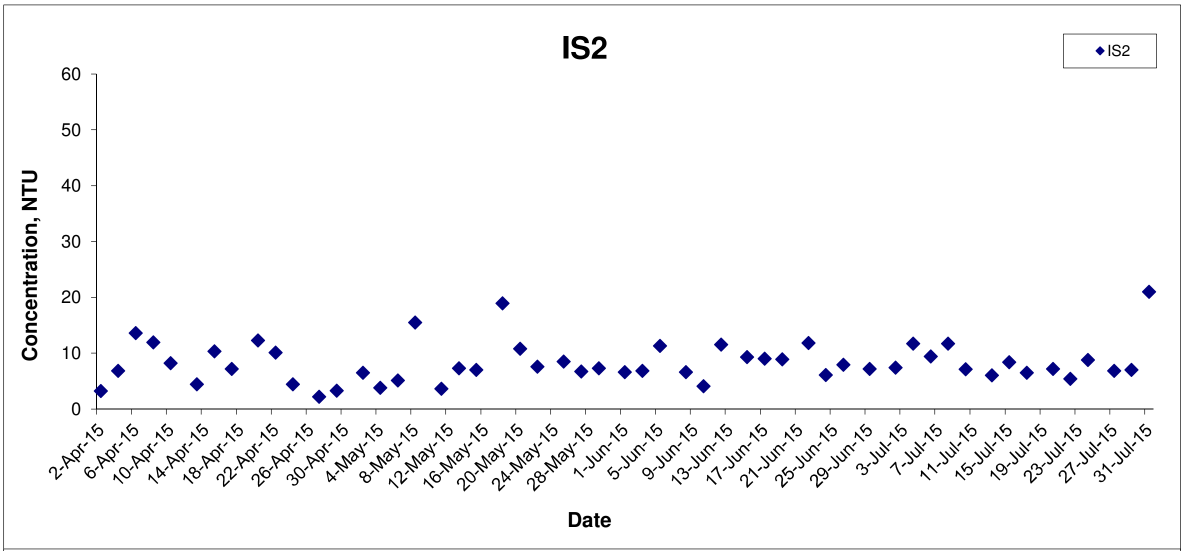

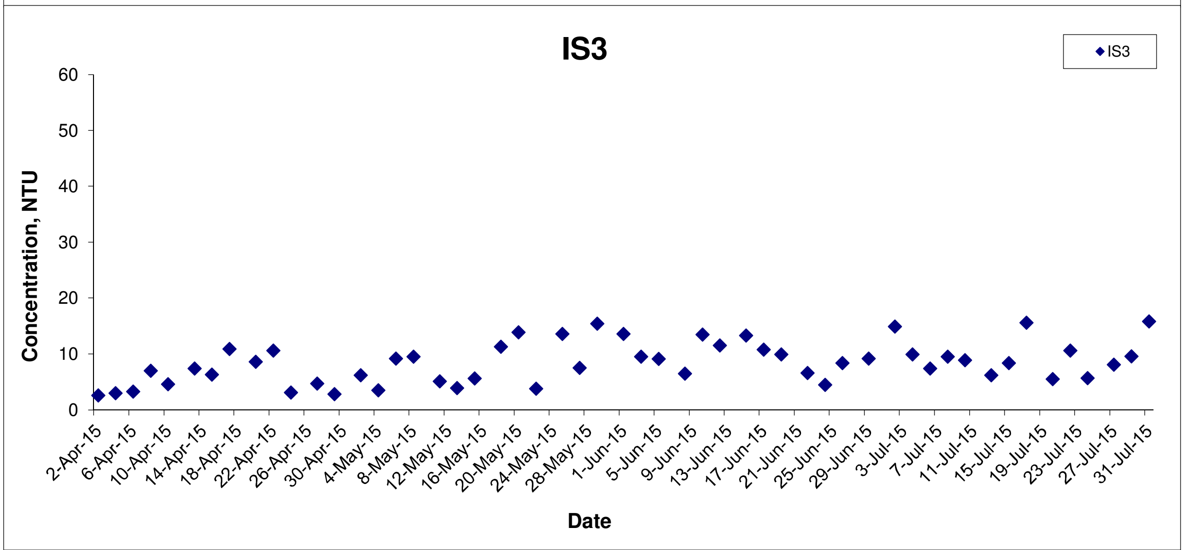

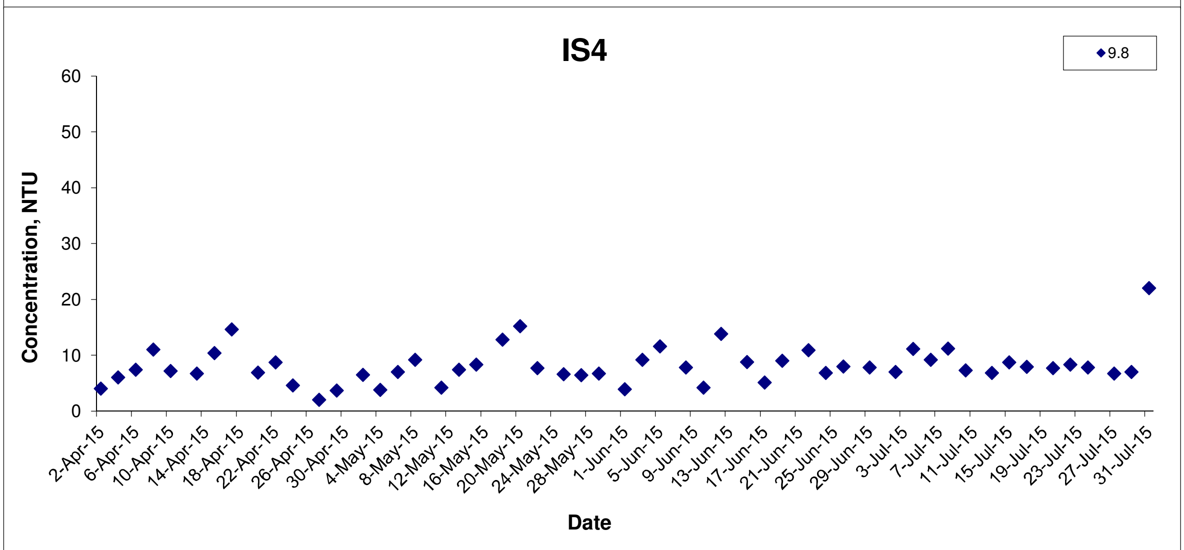

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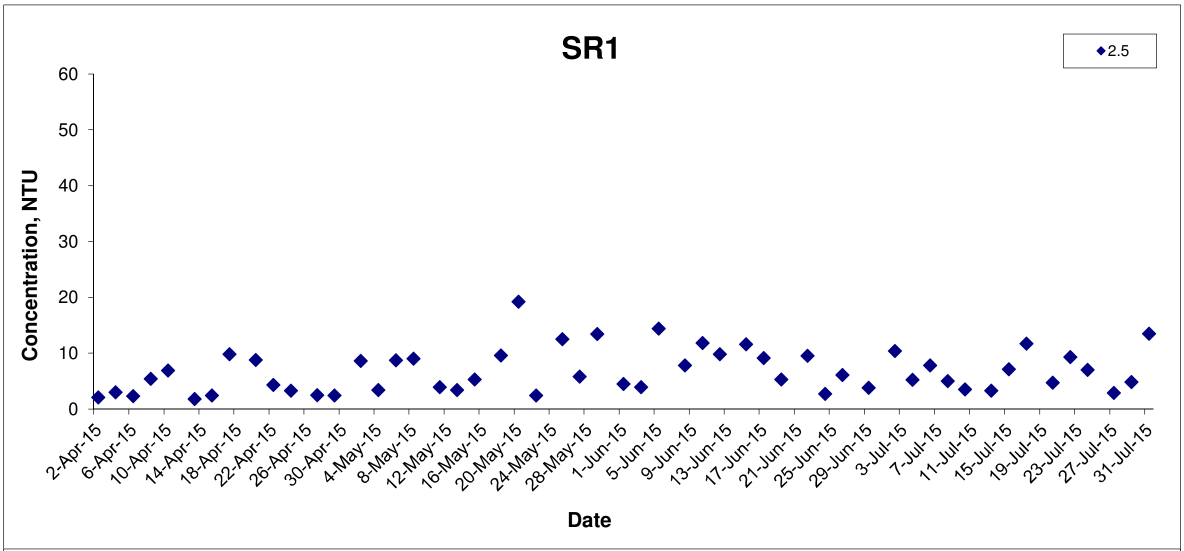
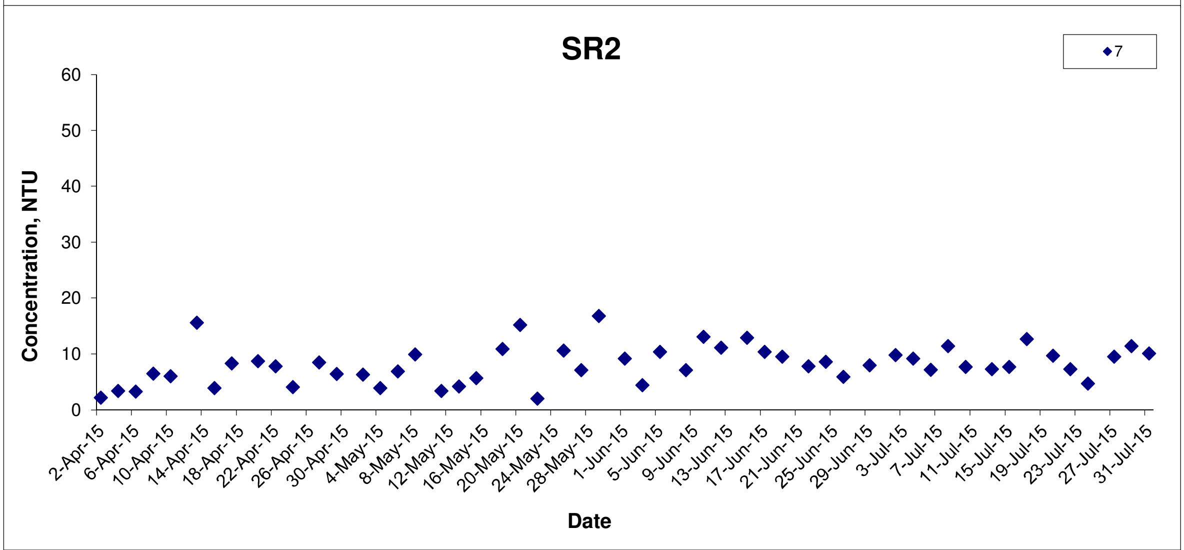
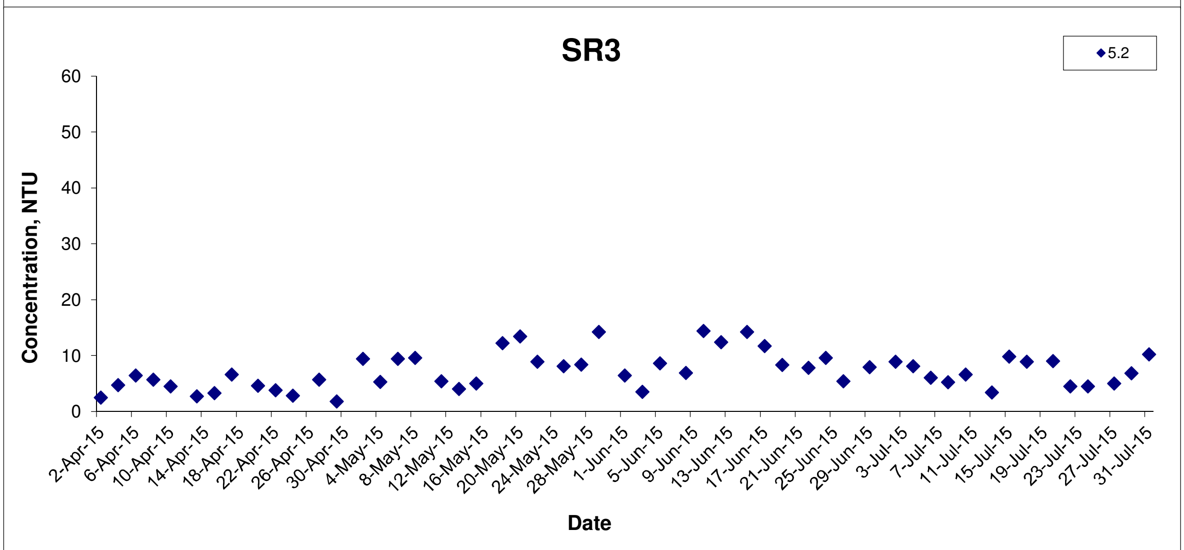
		Date Jul 15	Appendix H	

Turbidity (Depth-averaged) at Mid-Flood Tide







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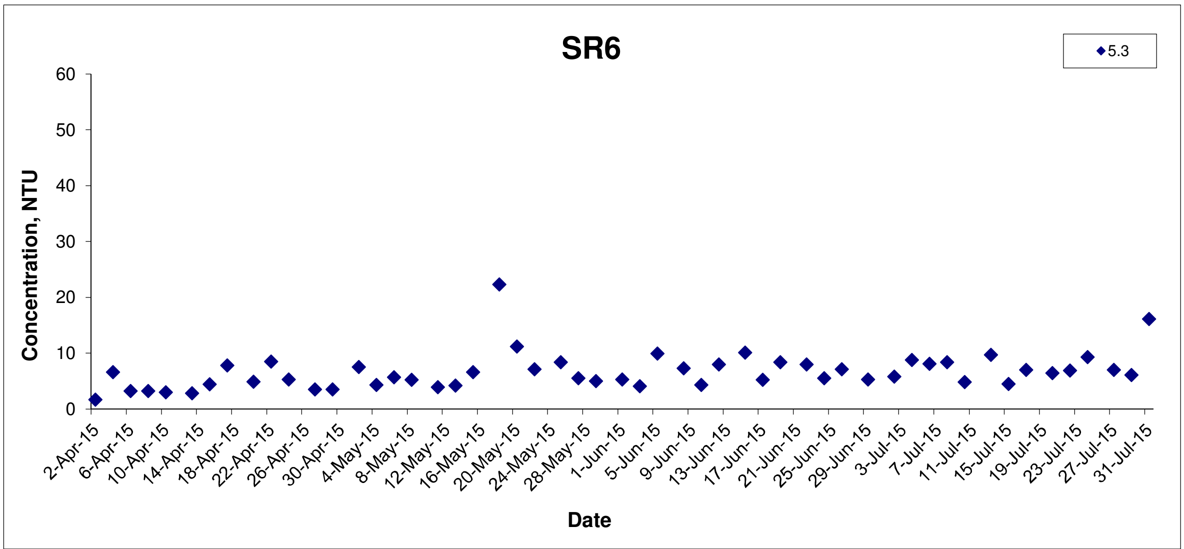
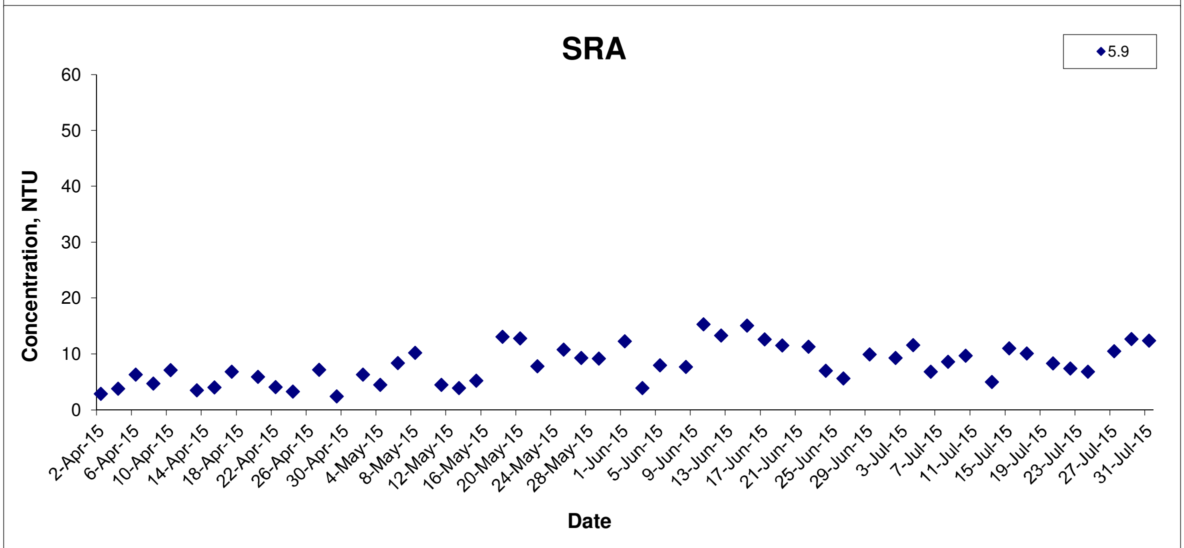
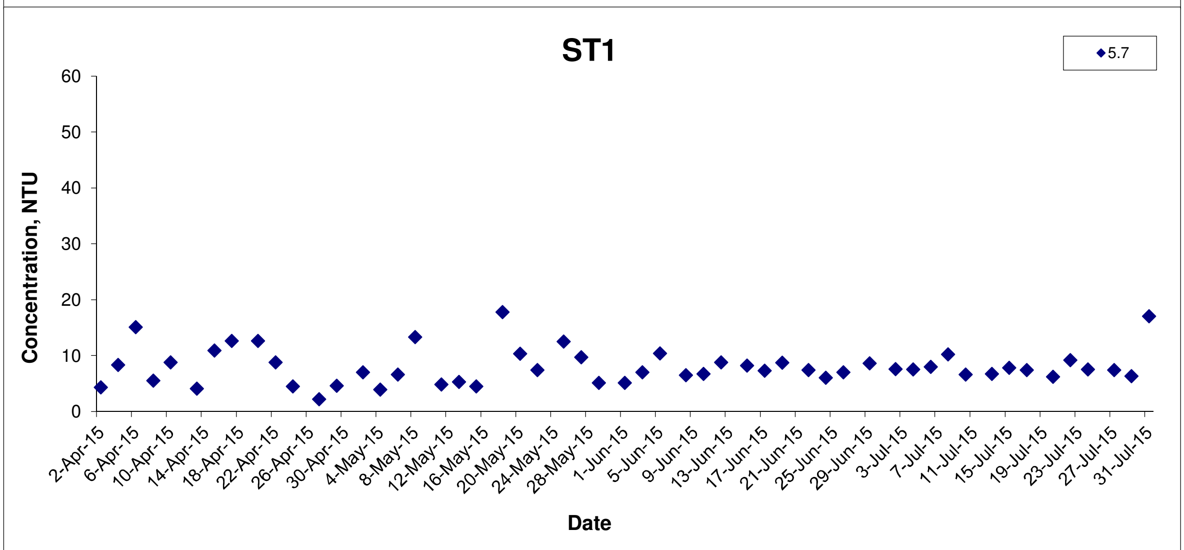
		Date Jul 15	Appendix H	

Turbidity (Depth-averaged) at Mid-Flood Tide







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		Date Jul 15	Appendix H	

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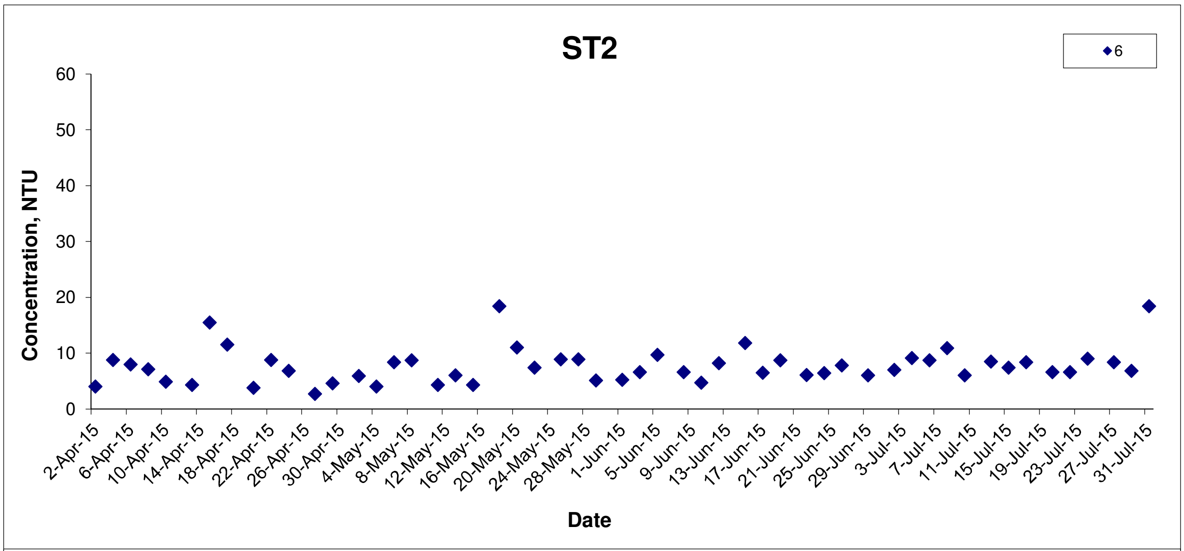

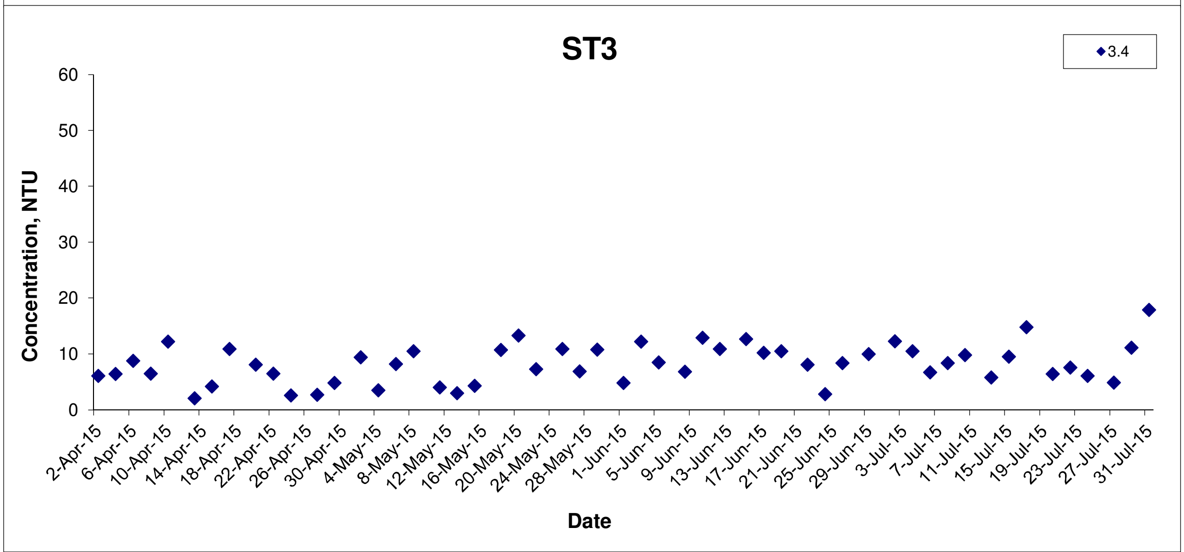

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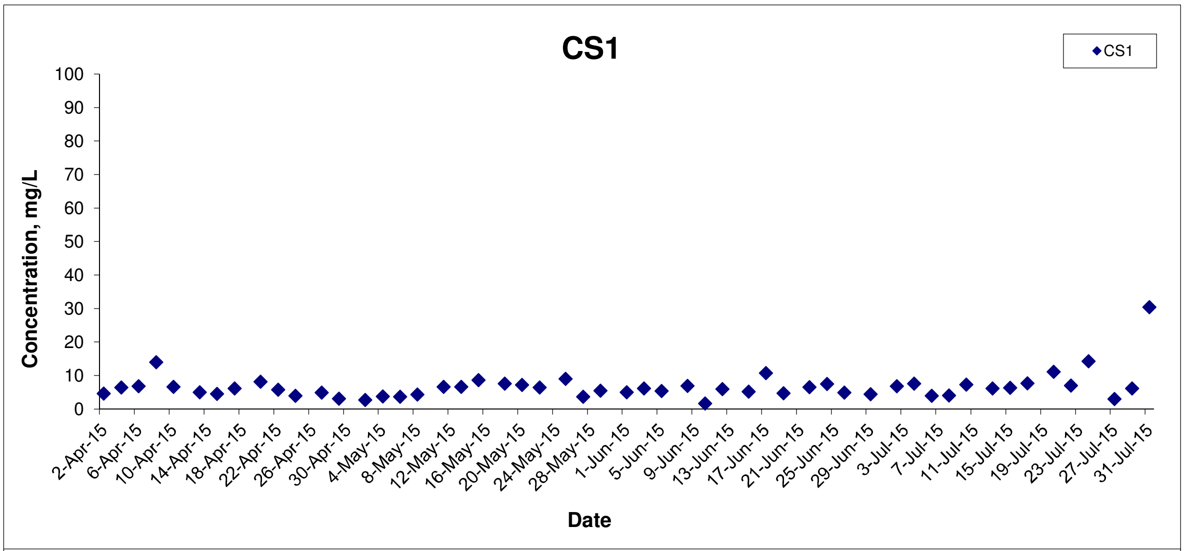
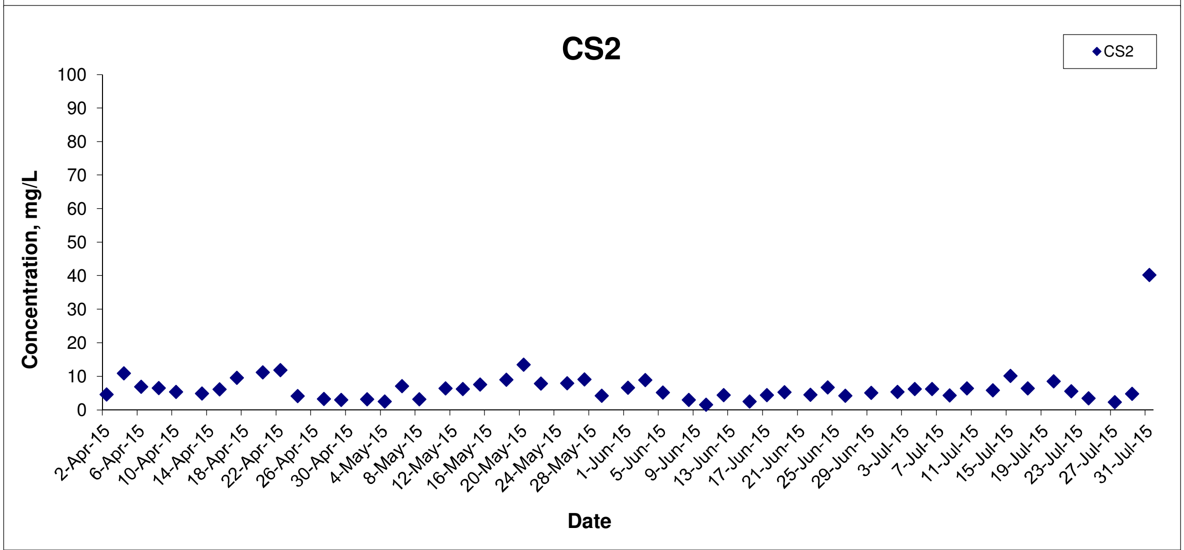
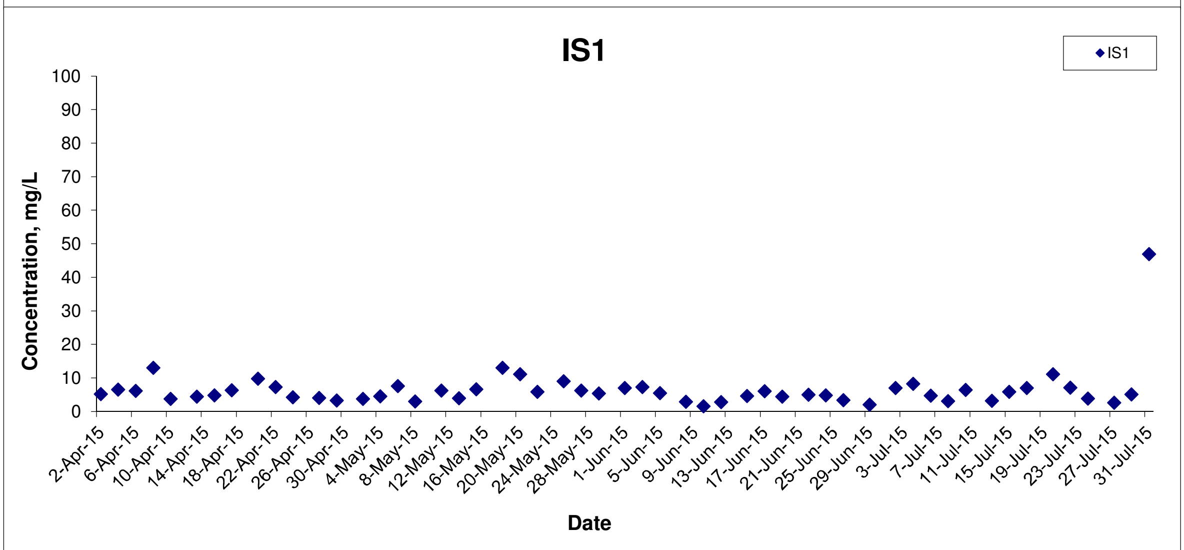
		Date Jul 15	Appendix H	

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







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		Date: Jul 15	Appendix: H	

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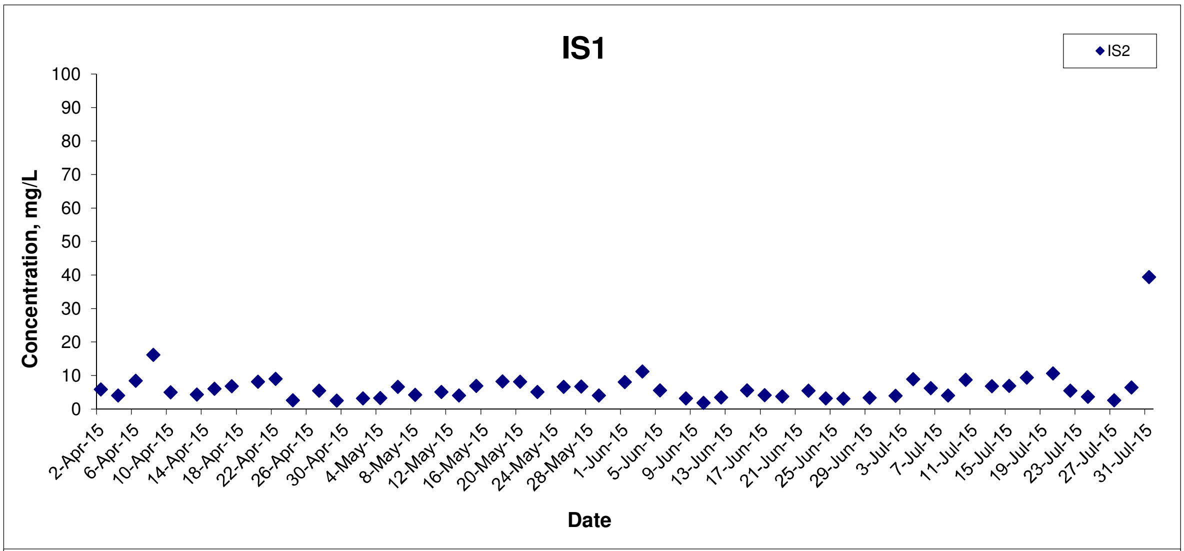

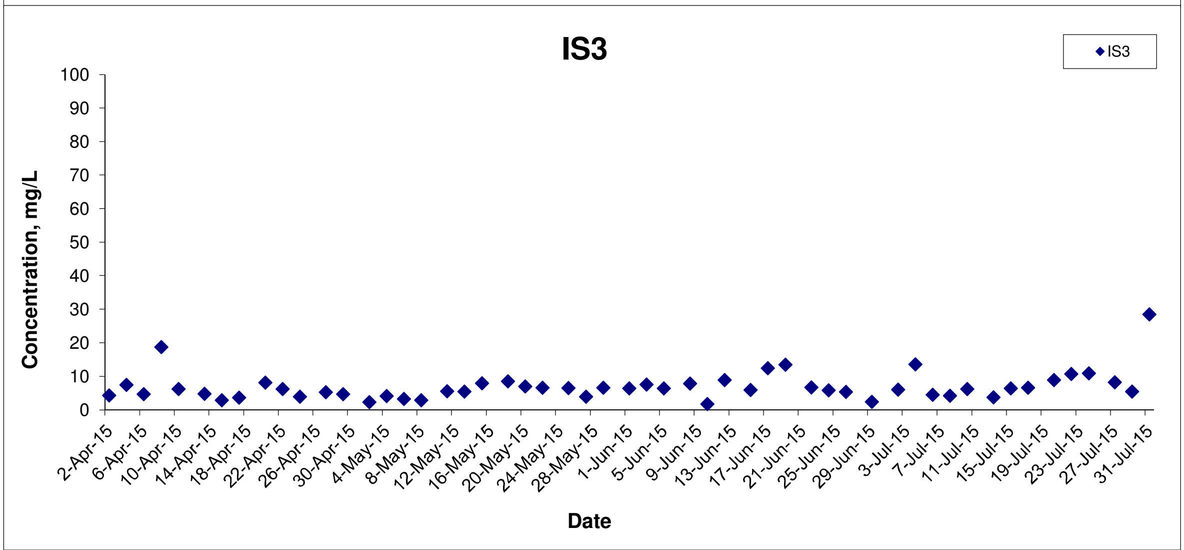

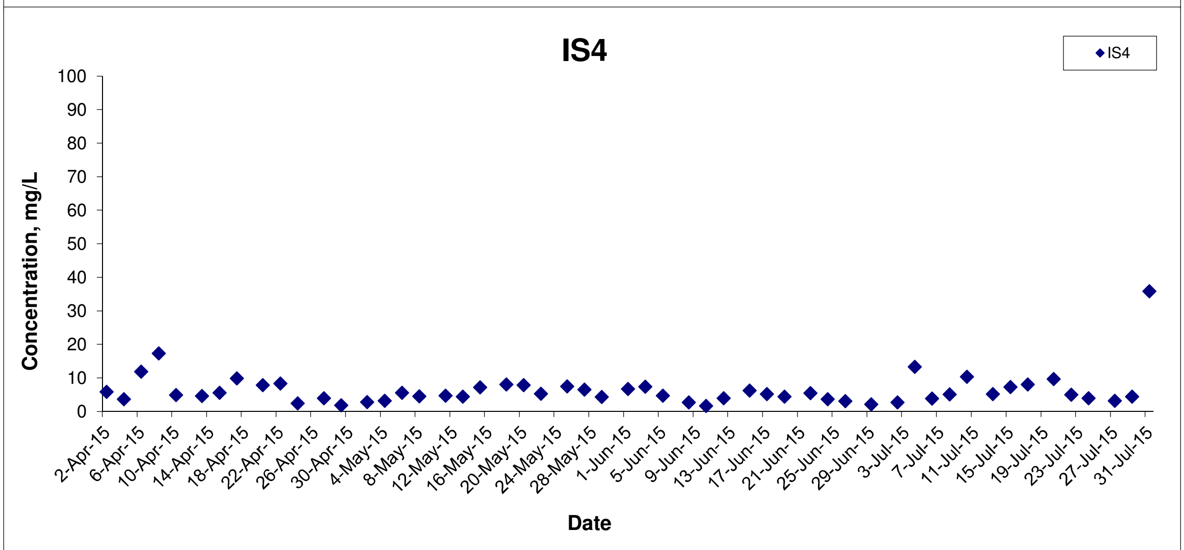

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		Date: Jul 15	Appendix: H	

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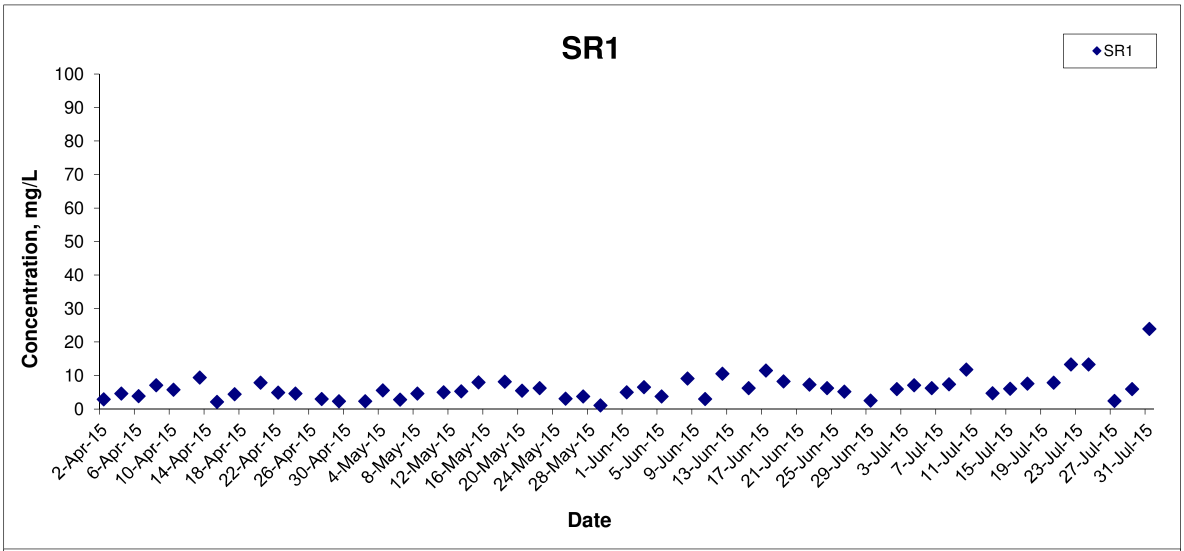

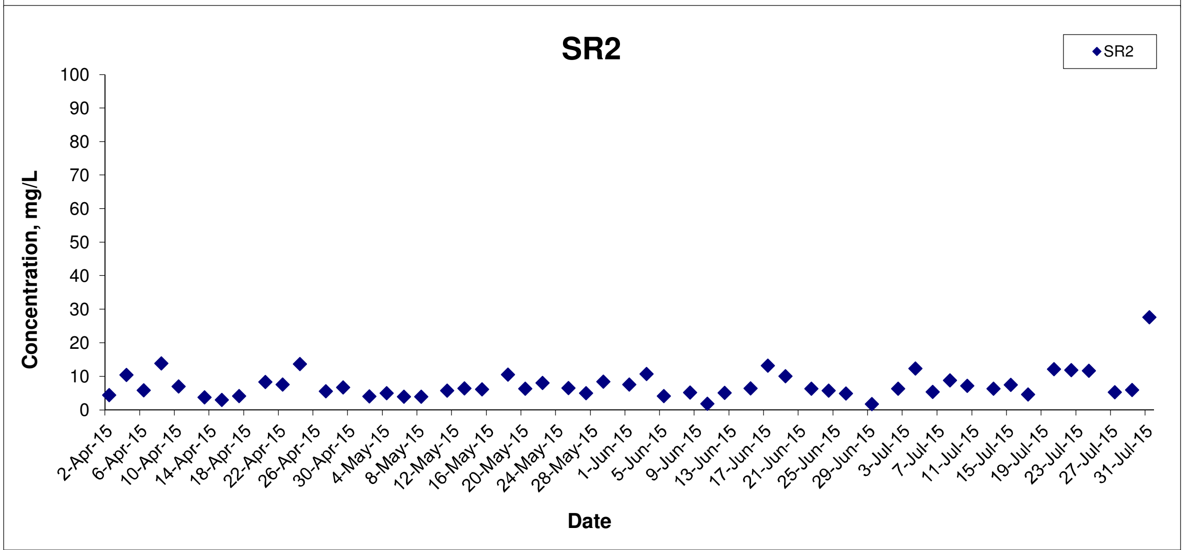

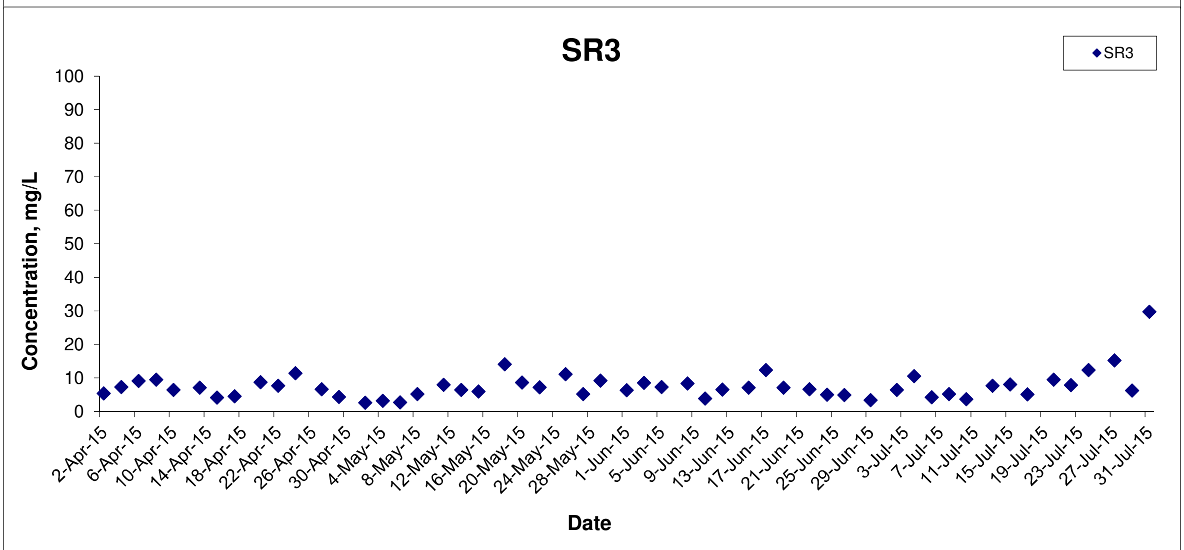

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		Date Jul 15	Appendix H	

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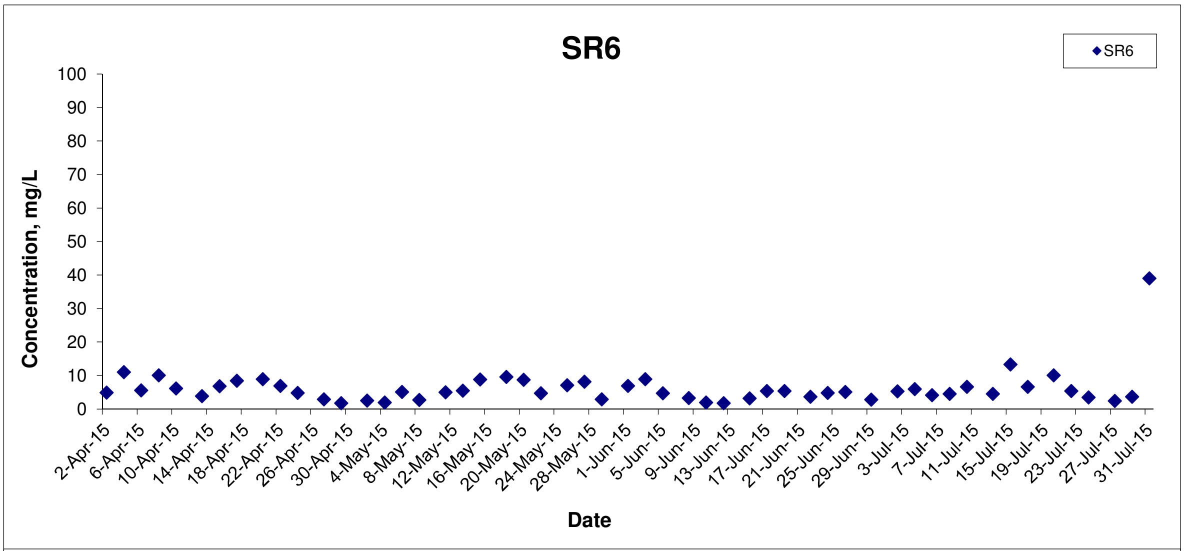

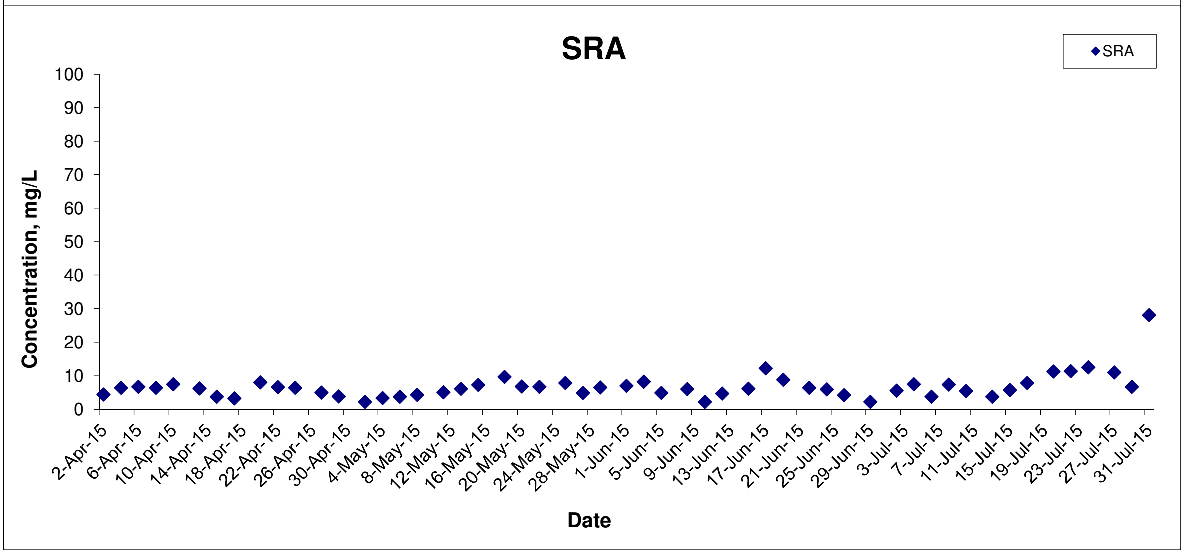

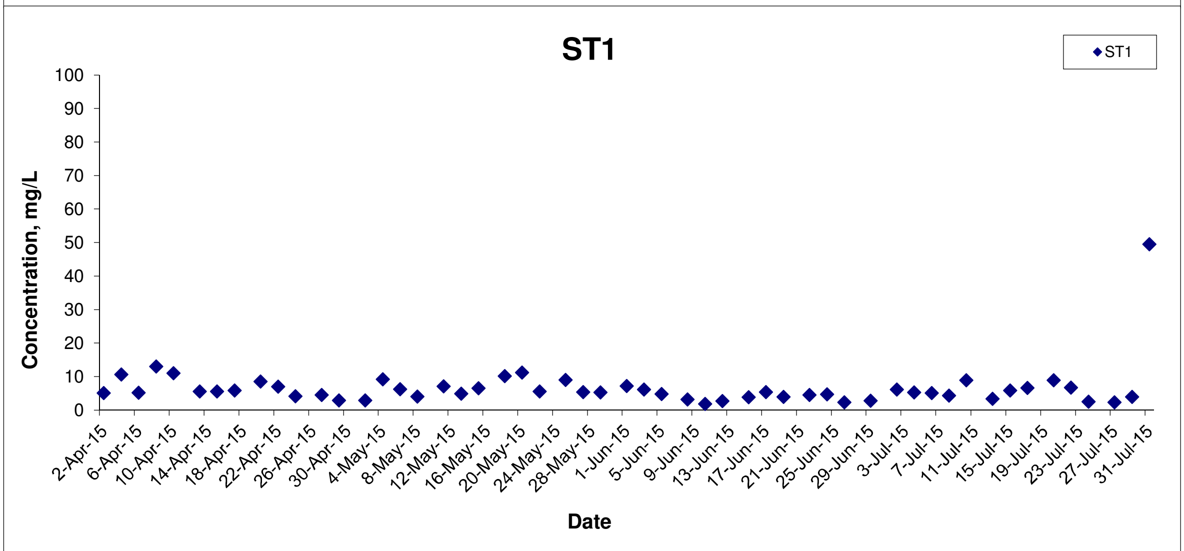

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		Date: Jul 15	Appendix: H	

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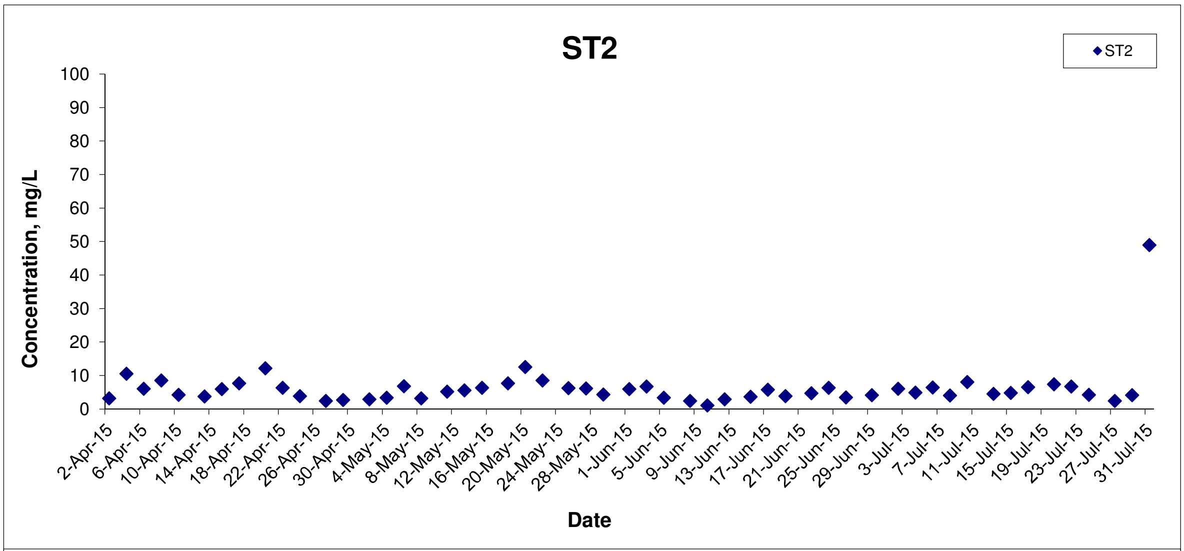

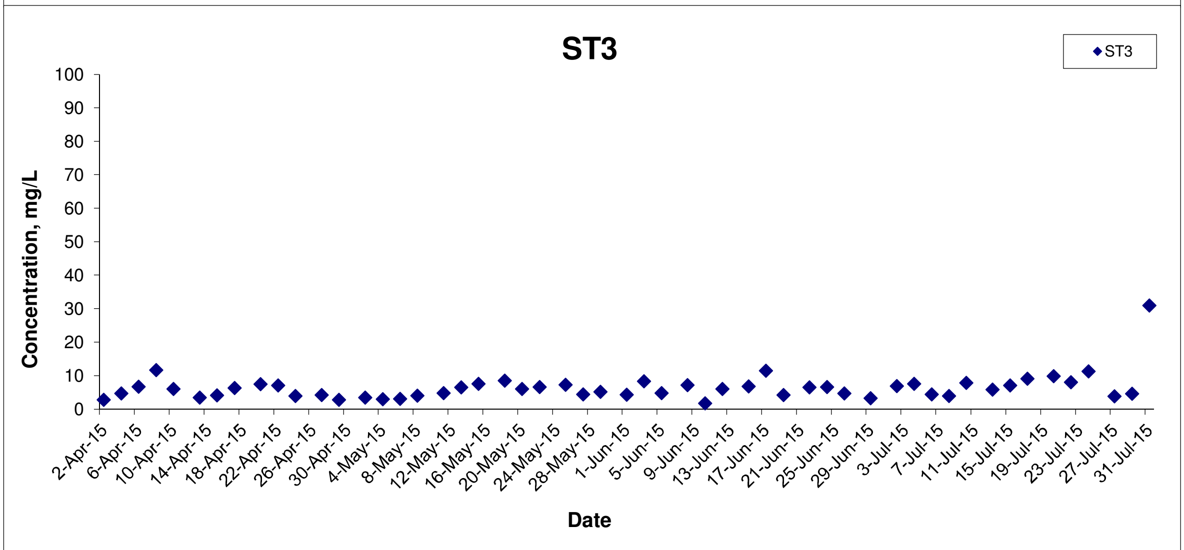

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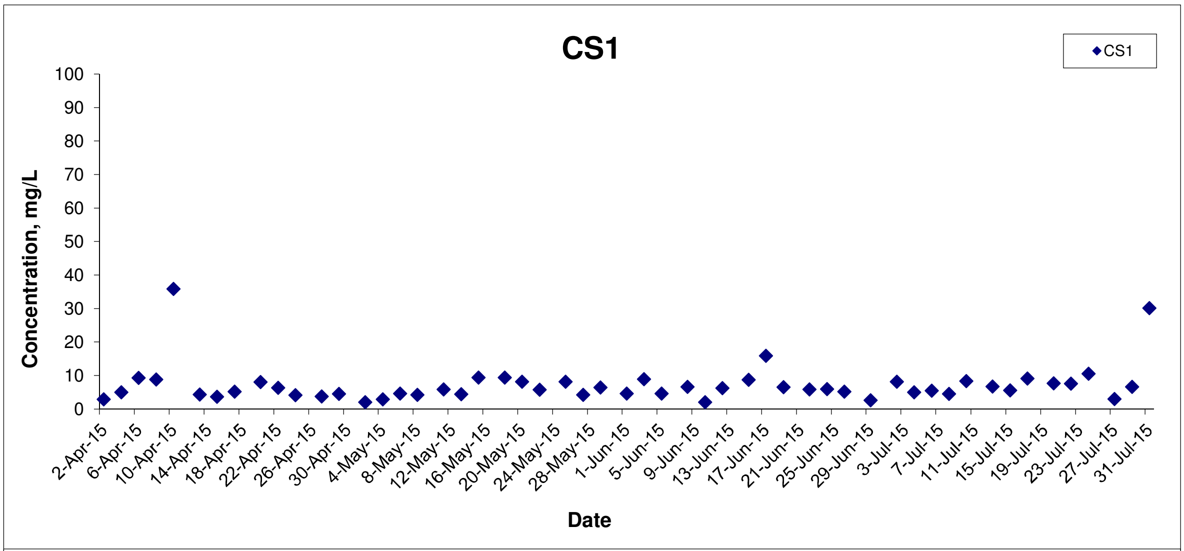
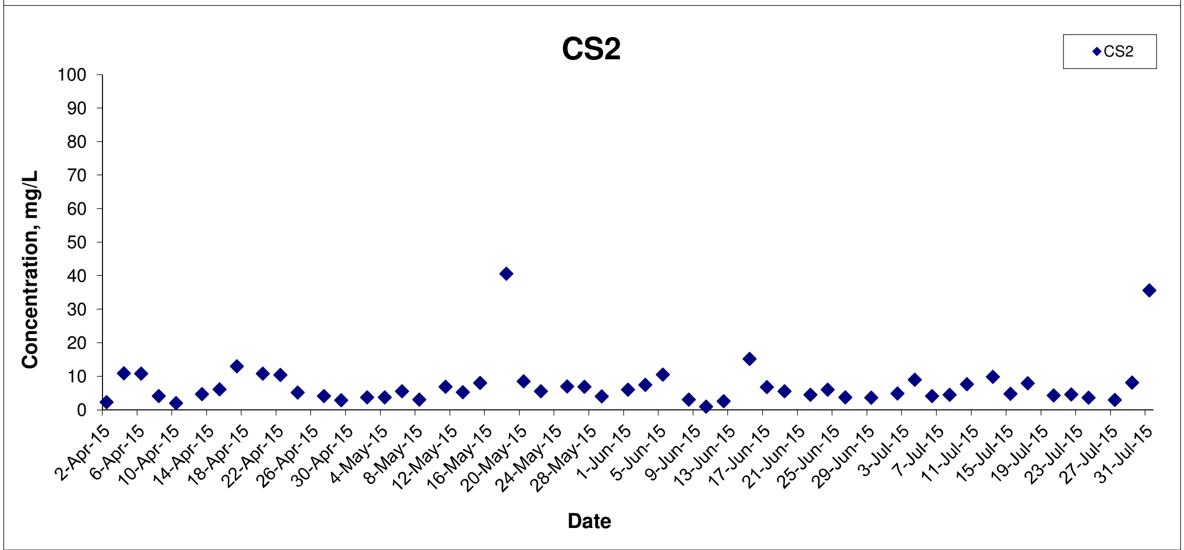
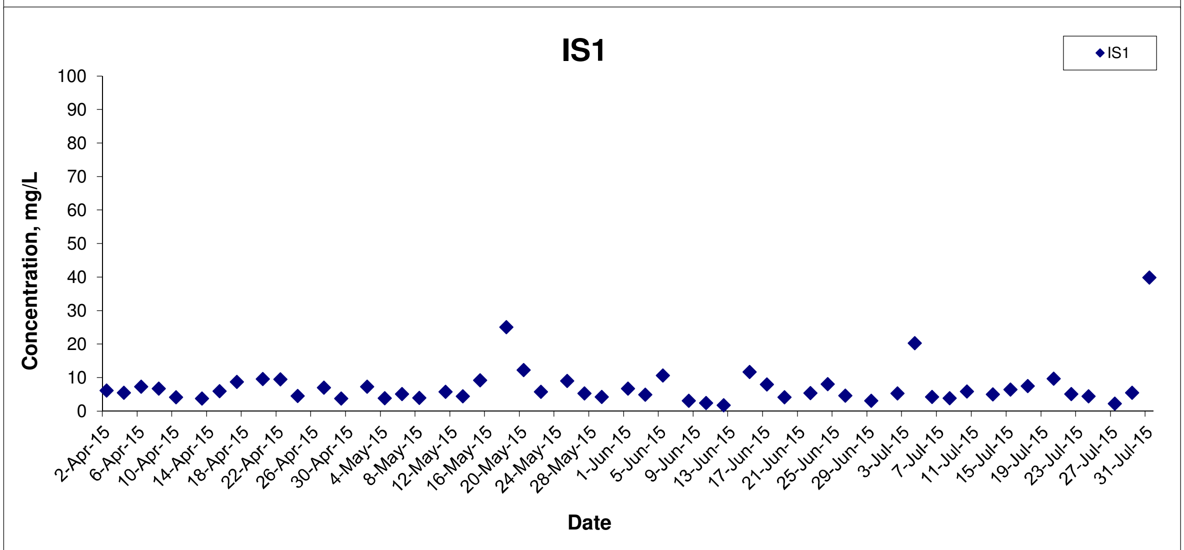
	Date	Appendix	
	Jul 15	H	

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







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	Date: Jul 15	Appendix: H	

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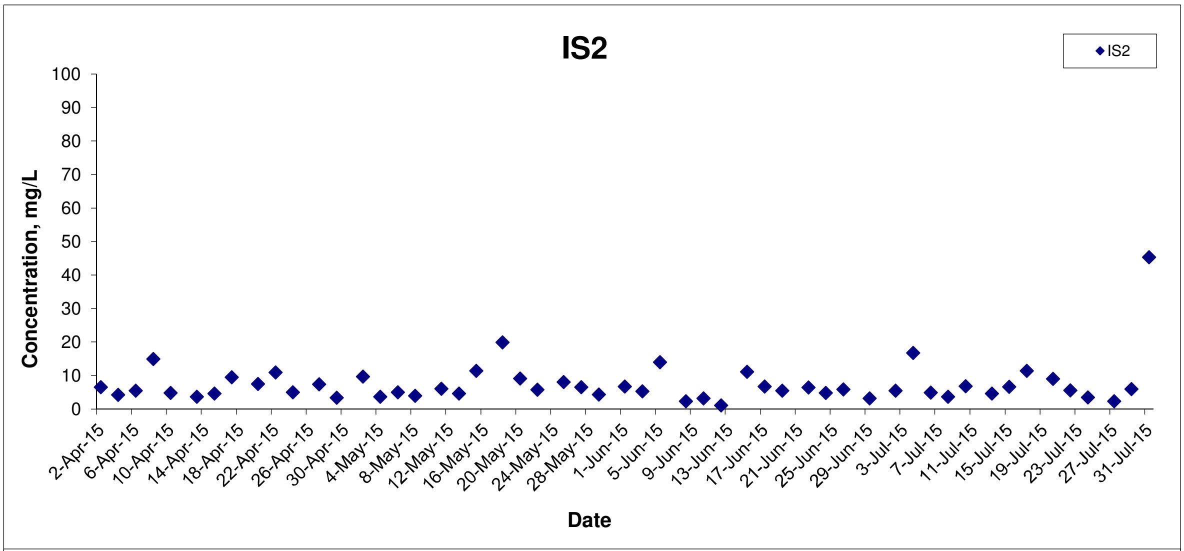

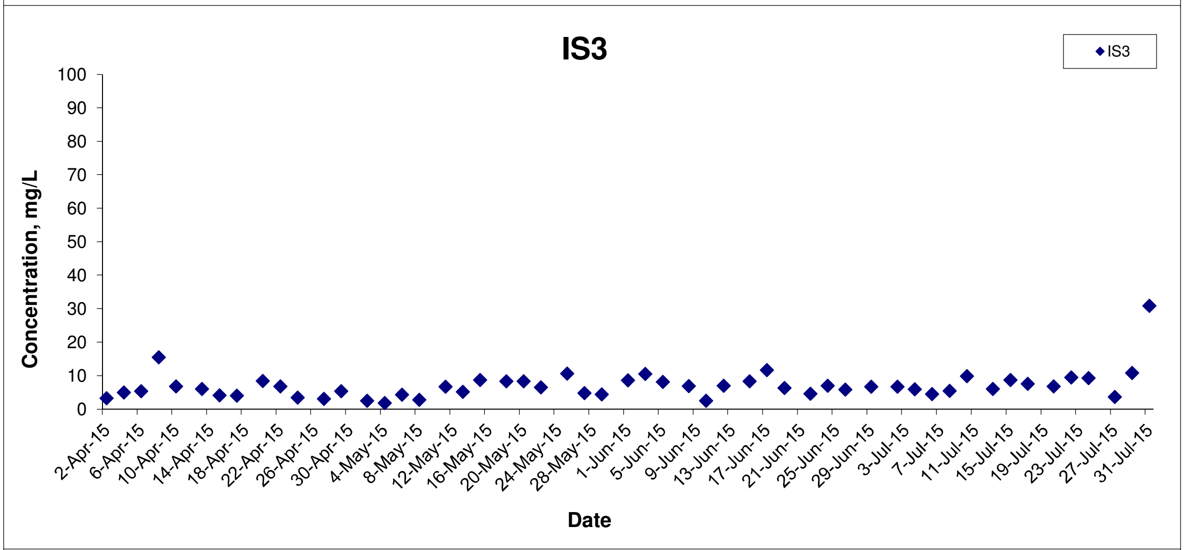

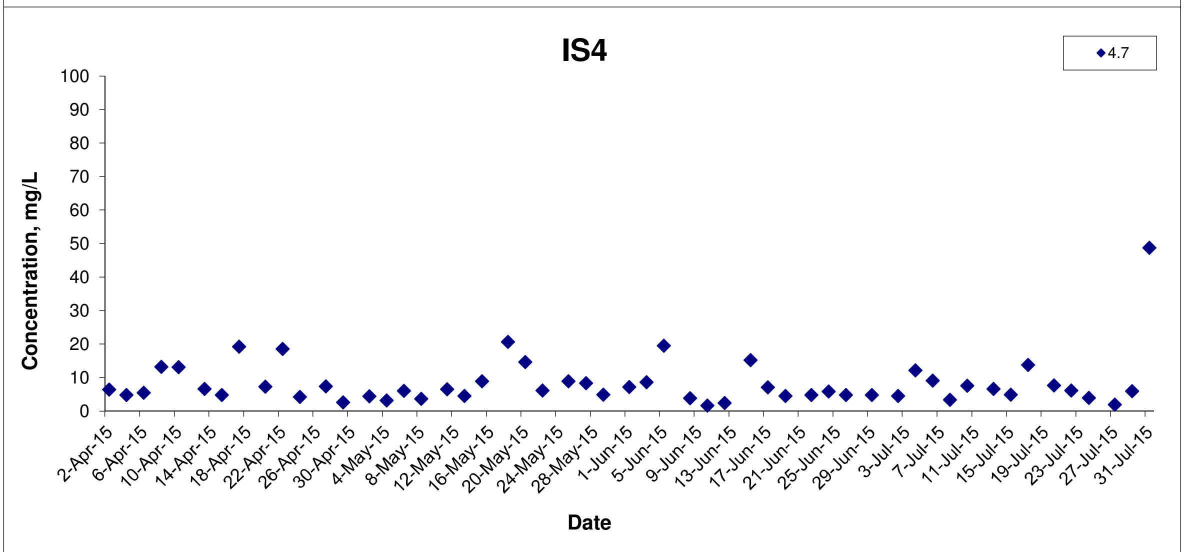

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	Date Jul 15	Appendix H	

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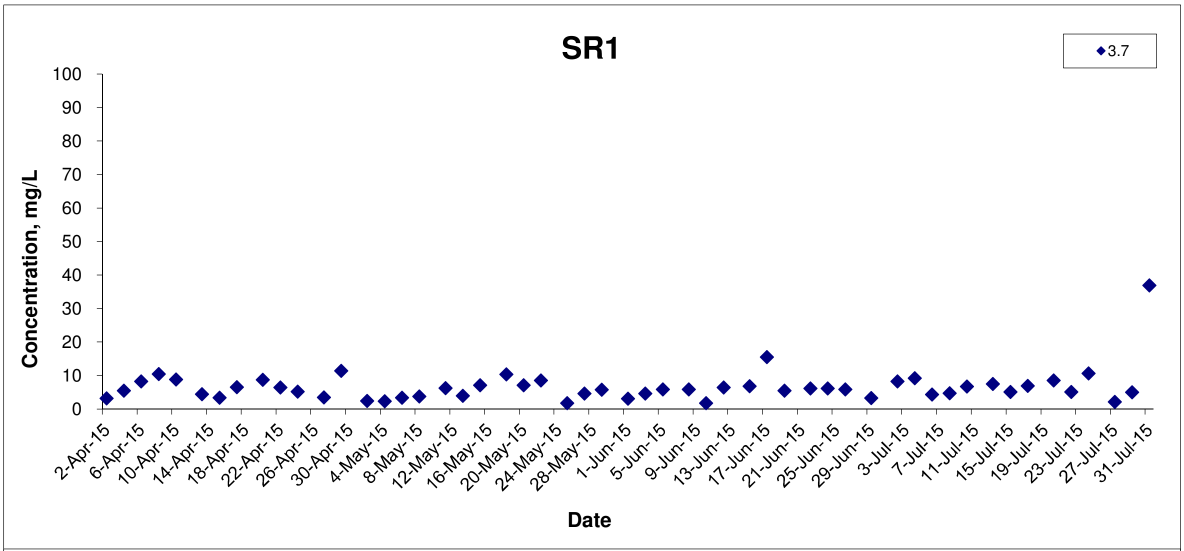

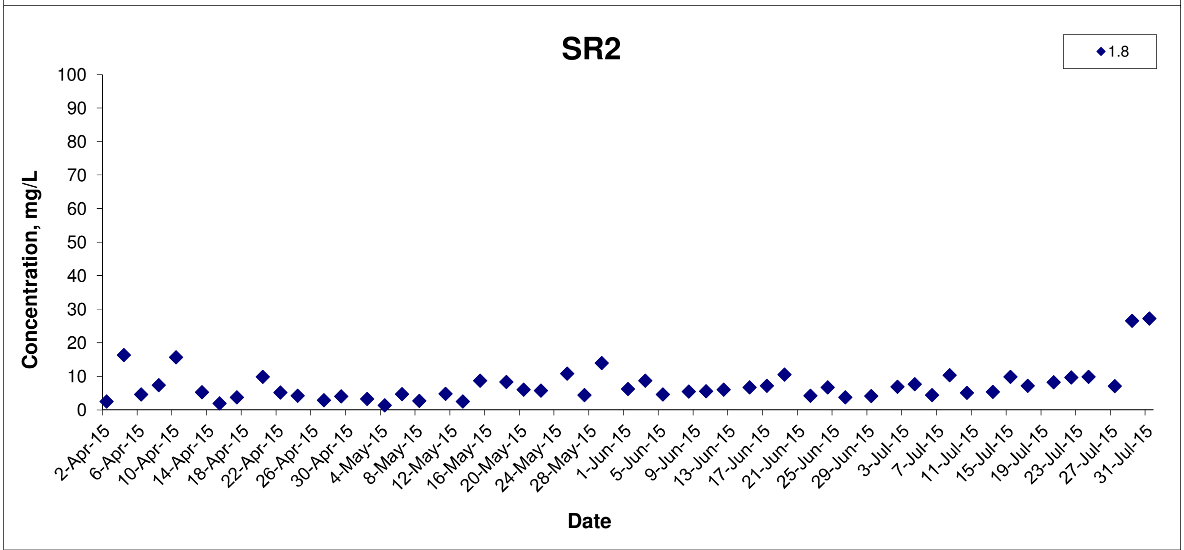

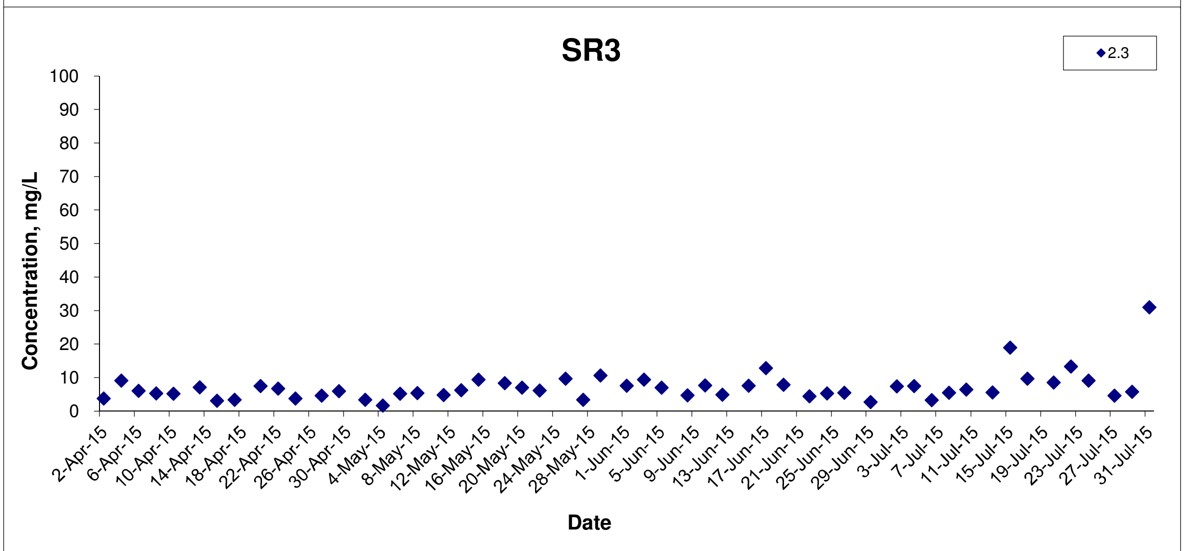

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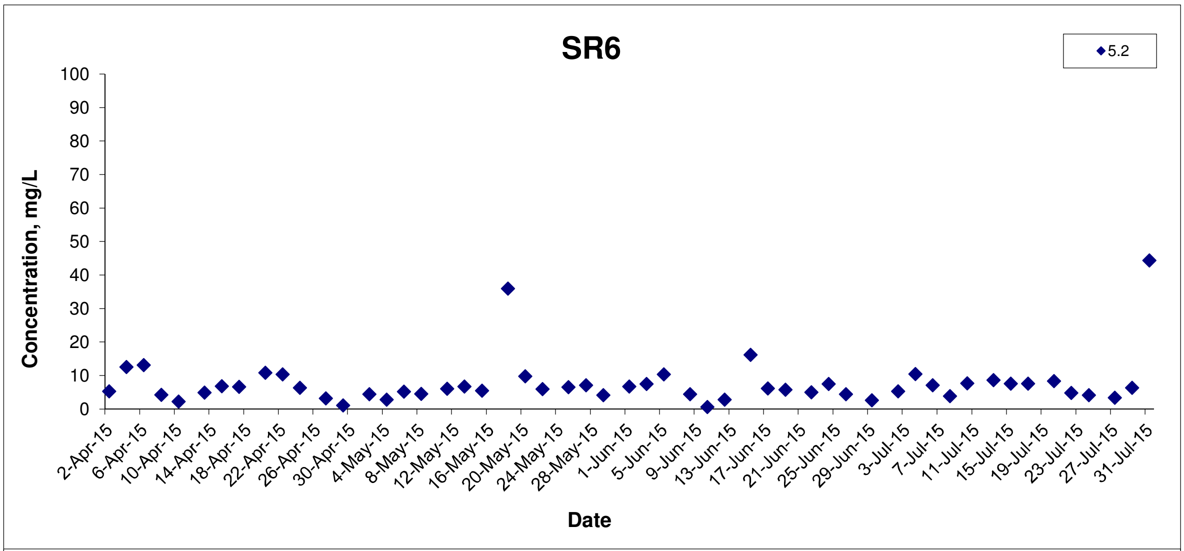
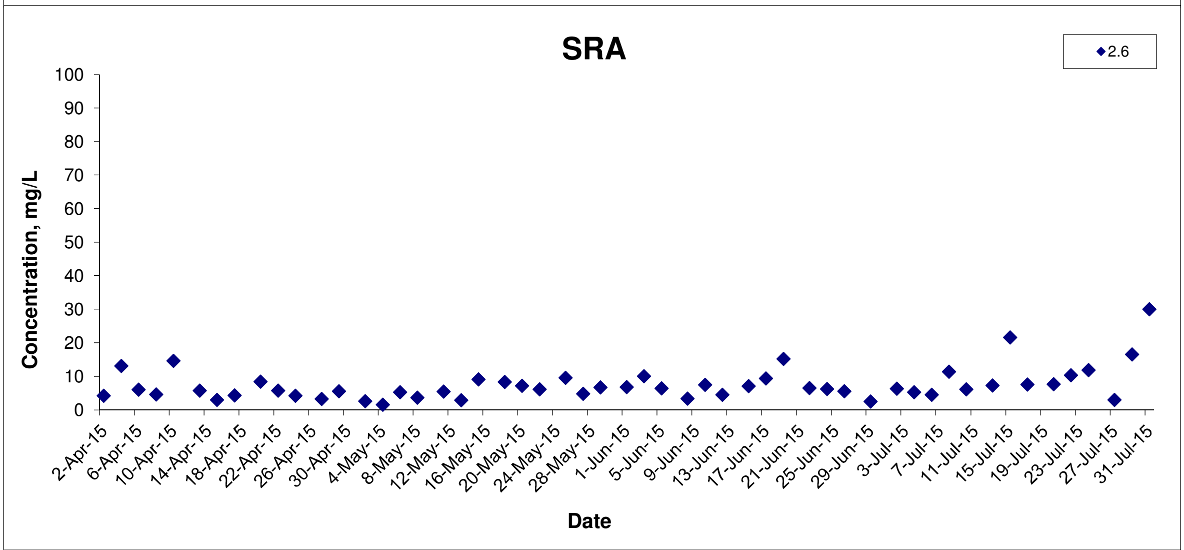
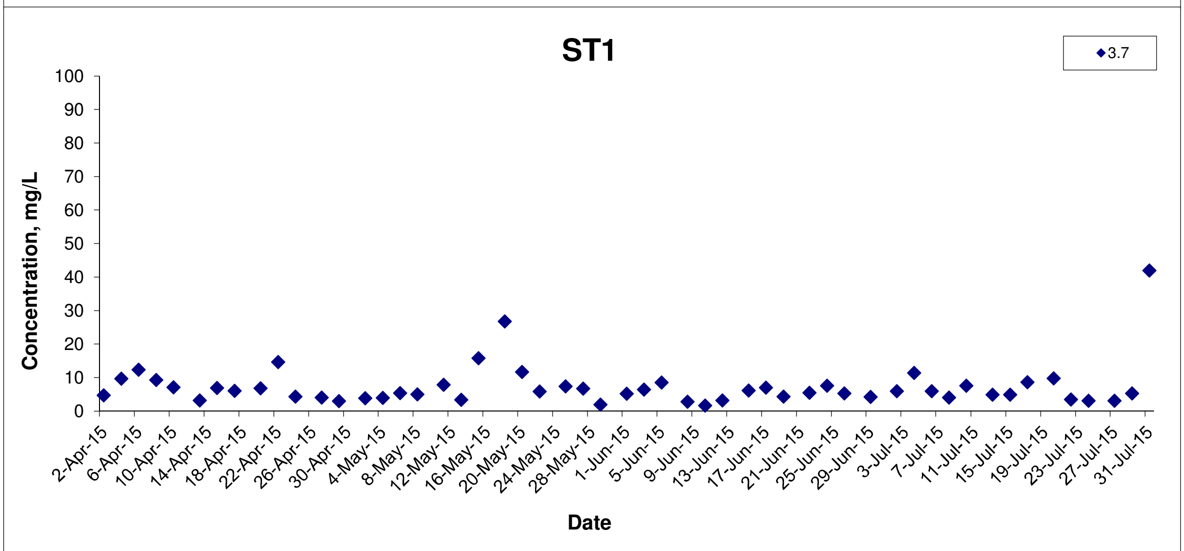
		Date: Jul 15	Appendix: H	

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







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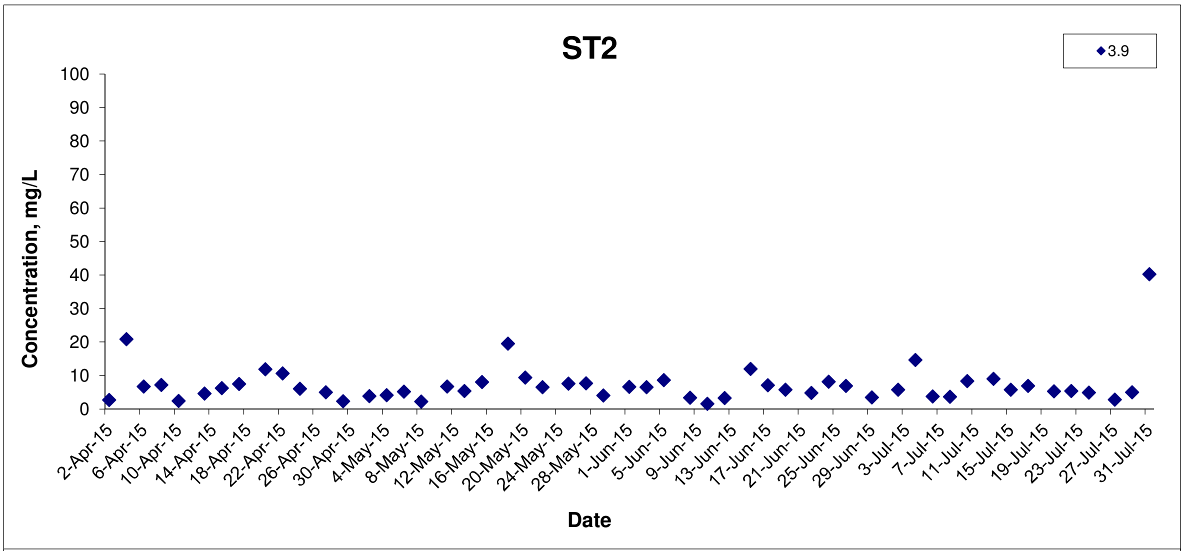
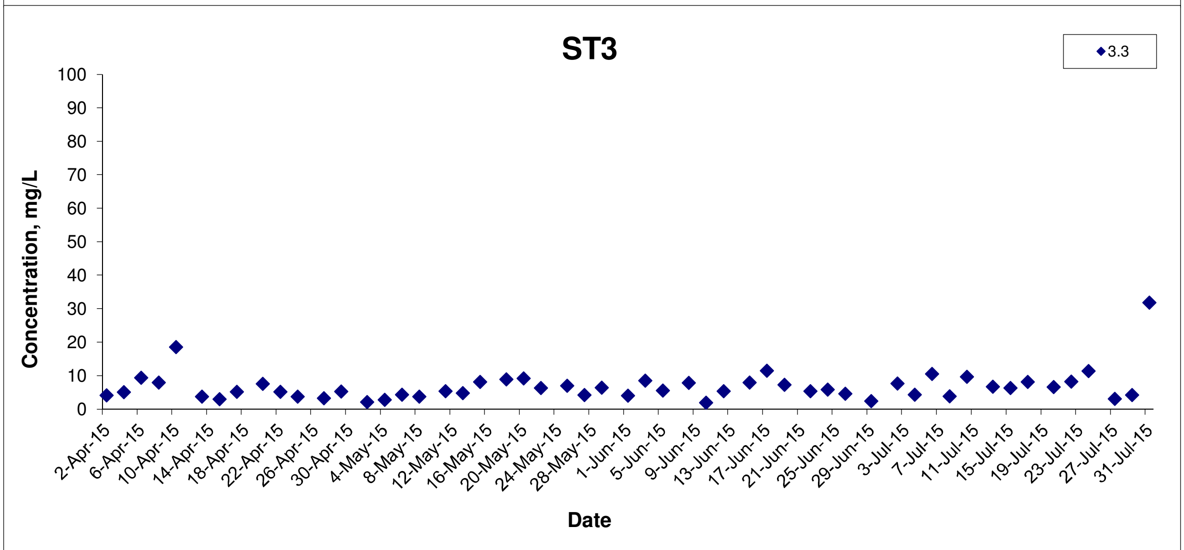
Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Water Quality Monitoring Results	N.T.S	MA12014
	Date: Jul 15	Appendix: H

CINOTECH

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





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APPENDIX I
DOLPHIN MONITORING REPORT (LINE TRANSECT)

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

30th Monthly Progress Report (July 2015)

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

1 August 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 30th monthly progress report under the HKLR09 construction phase dolphin monitoring programme, summarizing the results of the survey findings during the month of July 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 July 2015, two complete sets of systematic line-transect vessel surveys were conducted on the 6th and 28th, 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 67.86 km of survey effort was collected, with 93.8% 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 46.28 km, while the effort on secondary lines (the lines connecting the primary lines) was 21.58 km.

3.1.3. During the monitoring surveys conducted in July 2015, ten groups of 50 Chinese White Dolphins were sighted. All except one sighting were made during on-effort search, while seven of these nine on-effort sightings were made on primary lines (Appendix II). One of the dolphin groups was associated with an operating purse-seiner near Fan Lau.

3.1.4. Distribution of the ten dolphin sightings made during July's surveys is shown in Figure 4. Six of the ten dolphin sightings were concentrated near Tai O Peninsula toward the northern end of the WL survey area, while the other four sightings were located near Peaked Hill and Fan Lau. Notably, one dolphin sighting with a lone individual was made in the vicinity of the HKLR09 alignment (Figure 4).

3.1.5. During the July'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 July'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: July 6th	13.1	74.5
	Set 2: July 28th	13.2	66.0

Table 3. Overall dolphin encounter rates (sightings per 100 km of survey effort) in July'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	13.2	12.6	70.3	66.0

3.1.6. The average group size of Chinese White Dolphins was 5.0 individuals per group during July's surveys, which was higher than the ones in previous months of monitoring surveys.

3.1.7. Over half of dolphin groups were composed of only 1-4 animals, while four larger groups had group sizes of 6-12 animals per group, including a group of 12 animals feeding near a purse-seiner at Fan Lau.

3.2. Photo-identification Work

3.2.1. A total of 28 different individual Chinese White Dolphins were identified 31 times during July's surveys. Most individuals were sighted only once during the monitoring surveys, while three individuals (NL150, NL300 and WL208) were sighted twice (Appendices III and IV).

3.2.2. Notably, a number of identified individuals (e.g. NL120, NL136, NL150, NL188) sighted in West Lantau during the present month ranged primarily in North Lantau waters in the past, with possible range shifts.

3.3. Conclusion

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

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

- Hung, S. K. 2012. Monitoring of marine mammals in Hong Kong waters – data collection: final report (2011-12). An unpublished report submitted to the Agriculture, Fisheries and Conservation Department of Hong Kong SAR Government, 120 pp.

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- Jefferson, T. A. 2000. Population biology of the Indo-Pacific hump-backed dolphin in Hong Kong waters. Wildlife Monographs 144:1-65.

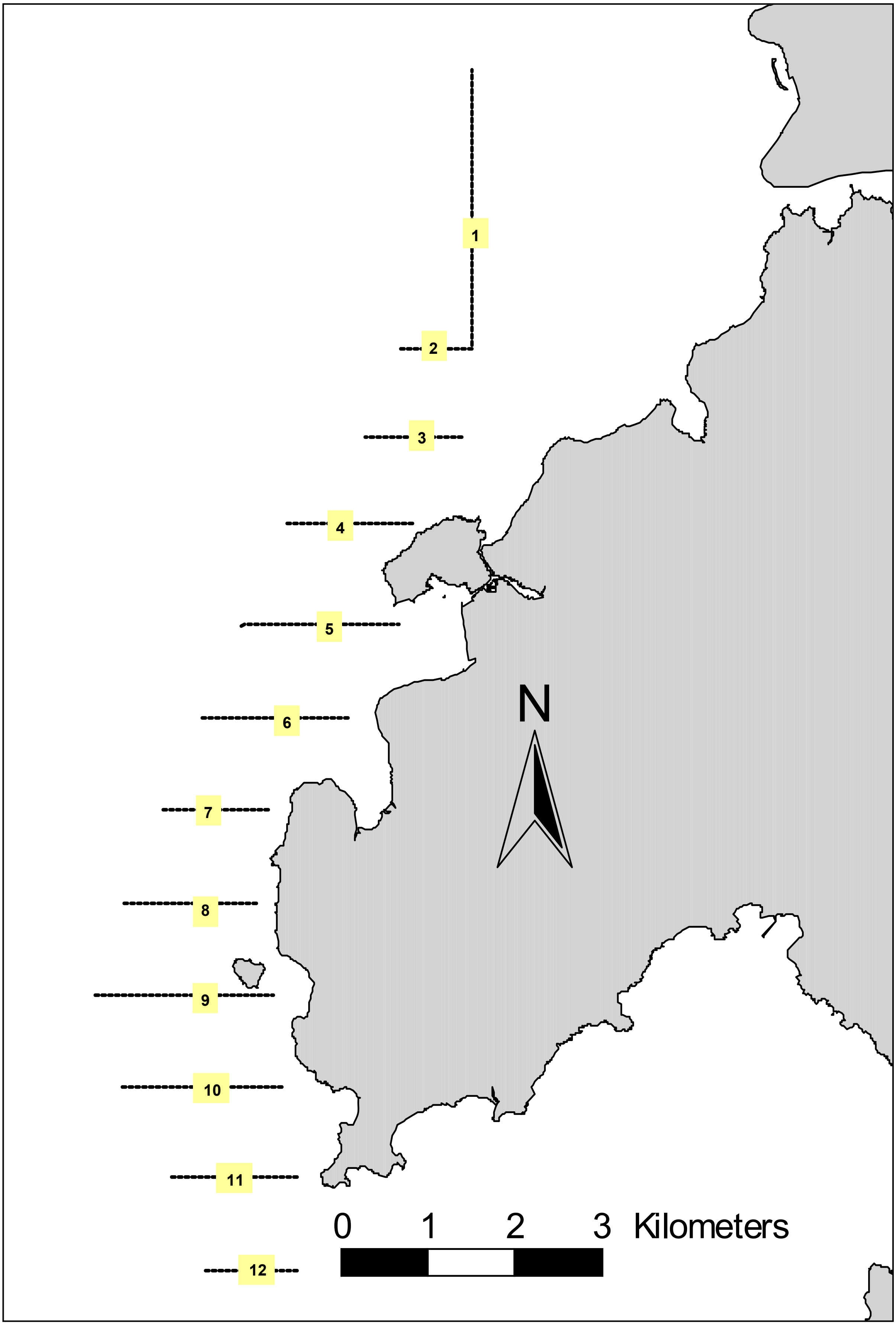


Figure 1. Transect Line Layout in West Lantau Survey Areas

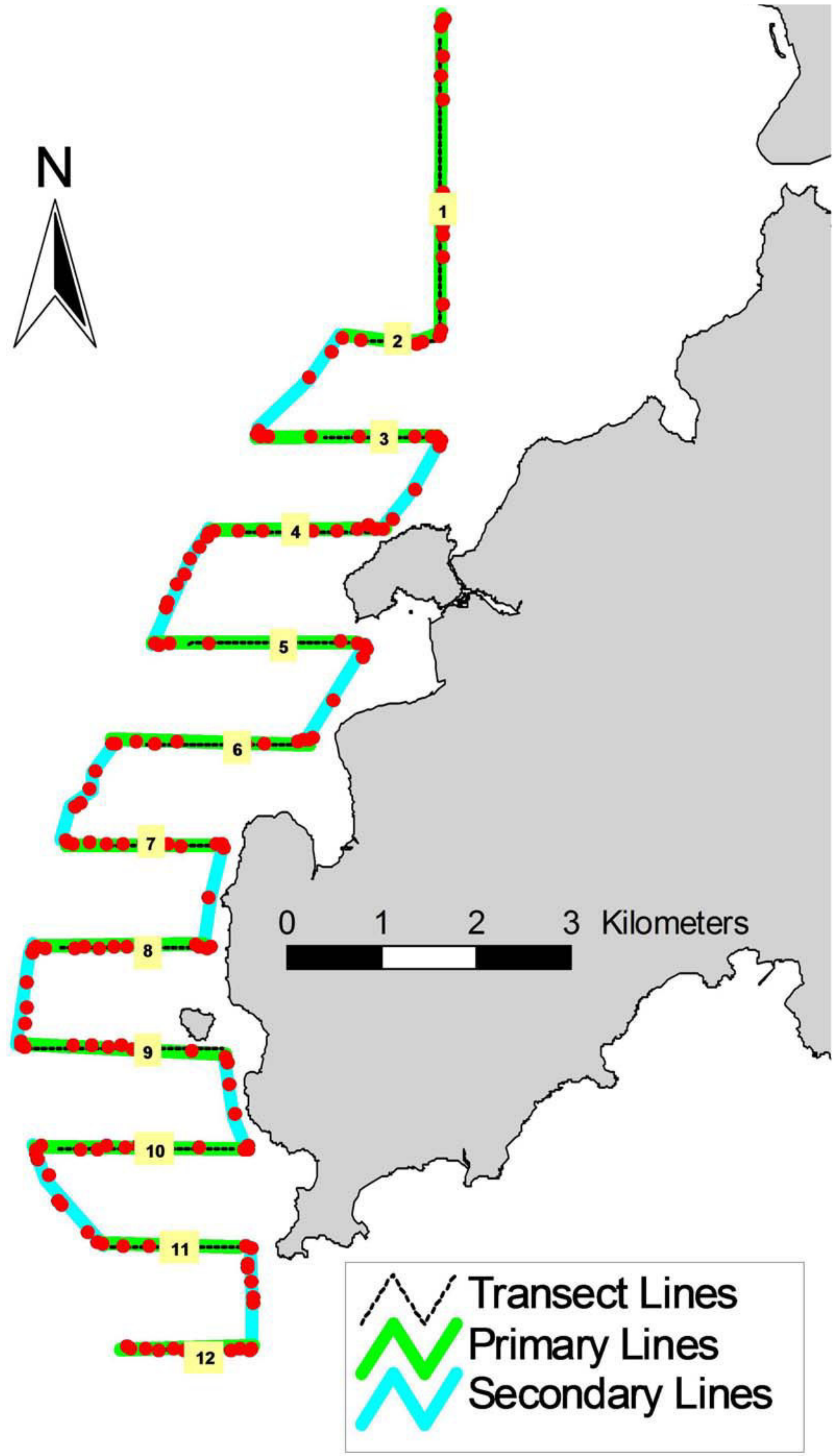


Figure 2. Survey Route on July 6th, 2015 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

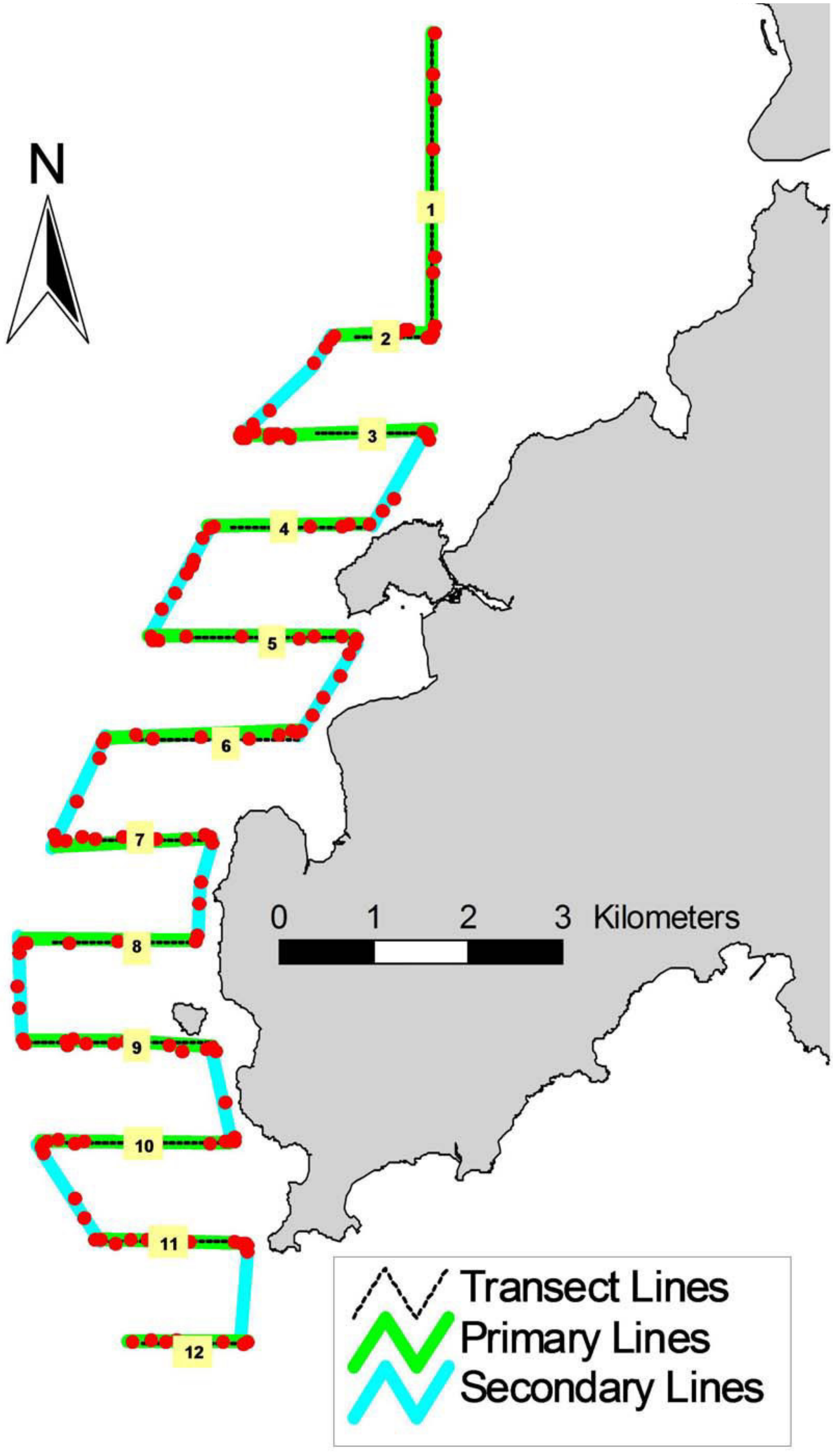


Figure 3. Survey Route on July 28th, 2015 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

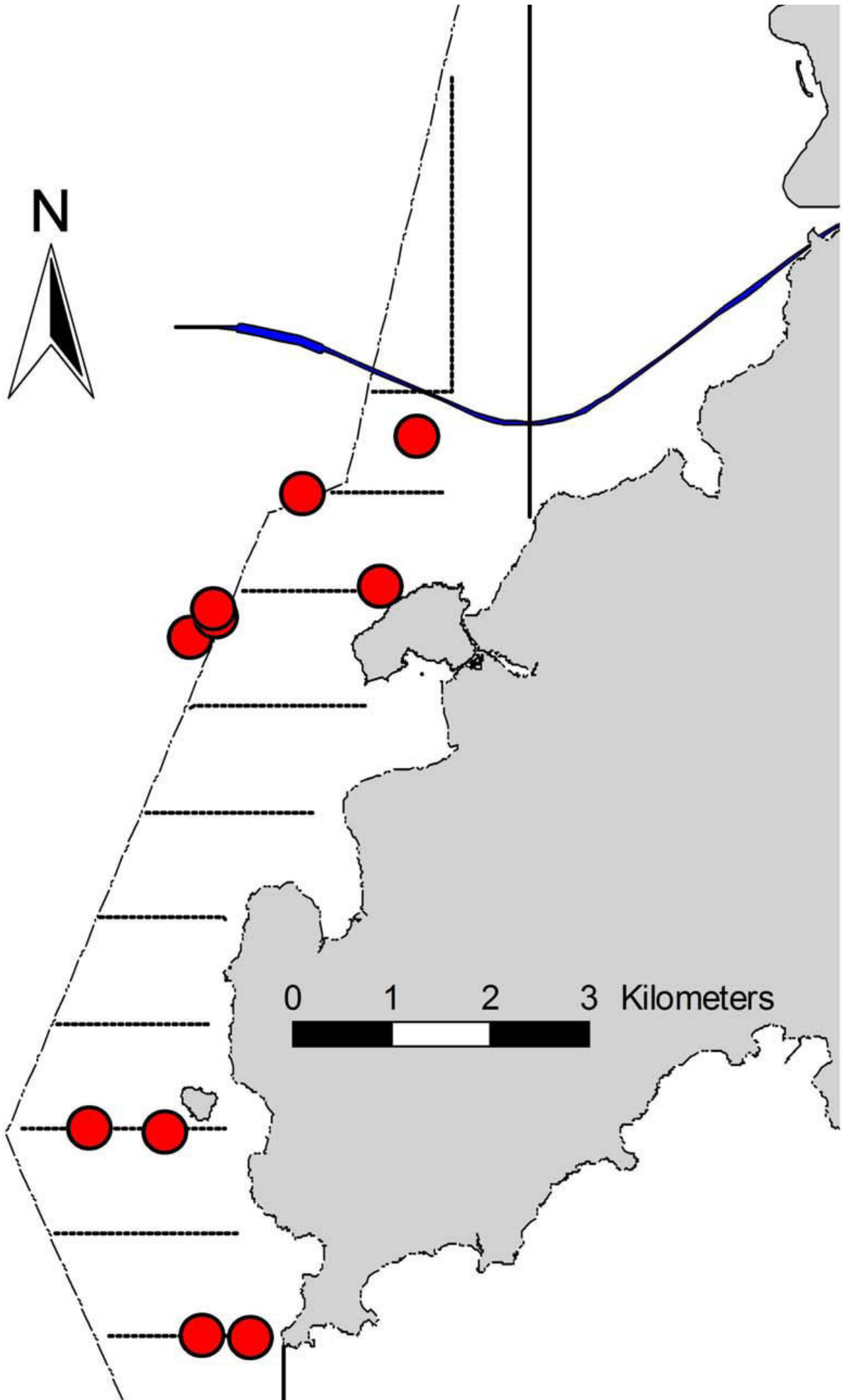


Figure 4. Distribution of Chinese White Dolphin Sighting during July 2015 HKLR09 Monitoring Surveys

Appendix I. HKLR09 Survey Effort Database (July 2015)

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

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
6-Jul-15	W LANTAU	2	10.13	SUMMER	STANDARD31516	HKLR	P
6-Jul-15	W LANTAU	3	12.70	SUMMER	STANDARD31516	HKLR	P
6-Jul-15	W LANTAU	4	0.50	SUMMER	STANDARD31516	HKLR	P
6-Jul-15	W LANTAU	2	7.16	SUMMER	STANDARD31516	HKLR	S
6-Jul-15	W LANTAU	3	2.63	SUMMER	STANDARD31516	HKLR	S
6-Jul-15	W LANTAU	4	1.60	SUMMER	STANDARD31516	HKLR	S
28-Jul-15	W LANTAU	2	2.12	SUMMER	STANDARD31516	HKLR	P
28-Jul-15	W LANTAU	3	20.60	SUMMER	STANDARD31516	HKLR	P
28-Jul-15	W LANTAU	4	0.23	SUMMER	STANDARD31516	HKLR	P
28-Jul-15	W LANTAU	2	2.63	SUMMER	STANDARD31516	HKLR	S
28-Jul-15	W LANTAU	3	5.68	SUMMER	STANDARD31516	HKLR	S
28-Jul-15	W LANTAU	4	1.88	SUMMER	STANDARD31516	HKLR	S

Appendix II. HKLR09 Chinese White Dolphin Sighting Database (July 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
06-Jul-15	1	1034	1	W LANTAU	2	325	ON	HKLR	815029	803372	SUMMER	NONE	P
06-Jul-15	2	1114	4	W LANTAU	2	132	ON	HKLR	813601	803008	SUMMER	NONE	P
06-Jul-15	3	1136	4	W LANTAU	3	298	ON	HKLR	813118	801100	SUMMER	NONE	S
06-Jul-15	4	1151	2	W LANTAU	2	ND	OFF	HKLR	813306	801338	SUMMER	NONE	
06-Jul-15	5	1320	12	W LANTAU	3	266	ON	HKLR	806463	801219	SUMMER	PURSE-SEINE	P
28-Jul-15	1	1045	9	W LANTAU	3	412	ON	HKLR	814478	802217	SUMMER	NONE	P
28-Jul-15	2	1129	6	W LANTAU	3	19	ON	HKLR	813384	801328	SUMMER	NONE	S
28-Jul-15	3	1232	2	W LANTAU	3	98	ON	HKLR	808437	800079	SUMMER	NONE	P
28-Jul-15	4	1245	4	W LANTAU	3	81	ON	HKLR	808413	800832	SUMMER	NONE	P
28-Jul-15	5	1326	6	W LANTAU	4	503	ON	HKLR	806451	801693	SUMMER	NONE	P

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

ID#	DATE	STG#	AREA
NL120	28/07/15	5	W LANTAU
NL136	28/07/15	3	W LANTAU
NL150	28/07/15	1	W LANTAU
	28/07/15	2	W LANTAU
NL188	06/07/15	5	W LANTAU
NL256	28/07/15	2	W LANTAU
NL279	06/07/15	2	W LANTAU
NL280	28/07/15	1	W LANTAU
NL300	28/07/15	1	W LANTAU
	28/07/15	2	W LANTAU
NL302	28/07/15	1	W LANTAU
NL307	28/07/15	1	W LANTAU
NL311	28/07/15	5	W LANTAU
SL54	06/07/15	5	W LANTAU
SL55	06/07/15	5	W LANTAU
WL94	06/07/15	5	W LANTAU
WL118	06/07/15	5	W LANTAU
WL130	06/07/15	5	W LANTAU
WL166	28/07/15	5	W LANTAU
WL186	06/07/15	5	W LANTAU
WL189	06/07/15	2	W LANTAU
WL208	28/07/15	4	W LANTAU
	28/07/15	5	W LANTAU
WL214	28/07/15	4	W LANTAU
WL216	28/07/15	4	W LANTAU
WL228	06/07/15	3	W LANTAU
WL231	28/07/15	1	W LANTAU
WL232	06/07/15	5	W LANTAU
WL241	06/07/15	5	W LANTAU
WL243	06/07/15	5	W LANTAU
WL253	06/07/15	5	W LANTAU

Appendix IV. Photographs of Identified Individual Dolphins in July 2015 (HKLR09)

Appendix IV (cont'd).

Appendix IV (cont'd).

Appendix IV (cont'd).

APPENDIX J
WIND DATA

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
1-Jul-2015	0:00	2.2	NE
1-Jul-2015	1:00	2.2	ENE
1-Jul-2015	2:00	1.8	ENE
1-Jul-2015	3:00	2.2	ENE
1-Jul-2015	4:00	1.6	ENE
1-Jul-2015	5:00	1.9	ENE
1-Jul-2015	6:00	2.1	SSW
1-Jul-2015	7:00	2.1	SW
1-Jul-2015	8:00	2.4	SSW
1-Jul-2015	9:00	2.4	S
1-Jul-2015	10:00	3.6	SSW
1-Jul-2015	11:00	3.7	SSW
1-Jul-2015	12:00	4	W
1-Jul-2015	13:00	3.6	W
1-Jul-2015	14:00	3.3	SSW
1-Jul-2015	15:00	3.6	WSW
1-Jul-2015	16:00	2.8	WSW
1-Jul-2015	17:00	2.5	WSW
1-Jul-2015	18:00	1.9	WSW
1-Jul-2015	19:00	1.3	SSW
1-Jul-2015	20:00	1.6	WSW
1-Jul-2015	21:00	2.4	WSW
1-Jul-2015	22:00	2.4	ENE
1-Jul-2015	23:00	2.2	ENE
2-Jul-2015	0:00	2.1	SW
2-Jul-2015	1:00	1.6	SW
2-Jul-2015	2:00	1.9	ENE
2-Jul-2015	3:00	2.2	ENE
2-Jul-2015	4:00	1.6	ENE
2-Jul-2015	5:00	1.3	ENE
2-Jul-2015	6:00	1.3	ENE
2-Jul-2015	7:00	1.6	ENE
2-Jul-2015	8:00	2.2	SW
2-Jul-2015	9:00	2.2	SW
2-Jul-2015	10:00	2.4	ENE
2-Jul-2015	11:00	3	NE
2-Jul-2015	12:00	3	ENE
2-Jul-2015	13:00	2.7	ENE
2-Jul-2015	14:00	3.1	NE
2-Jul-2015	15:00	1.6	NE
2-Jul-2015	16:00	1.5	NE
2-Jul-2015	17:00	1.6	NE
2-Jul-2015	18:00	1.8	ENE
2-Jul-2015	19:00	1.5	ENE
2-Jul-2015	20:00	1.8	NE
2-Jul-2015	21:00	1.9	ENE
2-Jul-2015	22:00	1.8	NE
2-Jul-2015	23:00	2.2	ENE
3-Jul-2015	0:00	1.9	NE
3-Jul-2015	1:00	1.5	ENE
3-Jul-2015	2:00	1.8	N
3-Jul-2015	3:00	2.2	NE
3-Jul-2015	4:00	1.6	NE
3-Jul-2015	5:00	1.5	NE
3-Jul-2015	6:00	1.3	ENE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
3-Jul-2015	7:00	0.9	NE
3-Jul-2015	8:00	0.9	ENE
3-Jul-2015	9:00	1.3	NE
3-Jul-2015	10:00	1.3	ENE
3-Jul-2015	11:00	1.5	NE
3-Jul-2015	12:00	3	NE
3-Jul-2015	13:00	3.7	NE
3-Jul-2015	14:00	3.1	NE
3-Jul-2015	15:00	2.5	NE
3-Jul-2015	16:00	2.8	ENE
3-Jul-2015	17:00	2.2	NE
3-Jul-2015	18:00	1.9	NE
3-Jul-2015	19:00	1.5	NE
3-Jul-2015	20:00	0.6	NE
3-Jul-2015	21:00	0.4	NNE
3-Jul-2015	22:00	0.6	ENE
3-Jul-2015	23:00	0.9	ENE
4-Jul-2015	0:00	0.8	ENE
4-Jul-2015	1:00	0.8	ENE
4-Jul-2015	2:00	0.1	NE
4-Jul-2015	3:00	0.7	NE
4-Jul-2015	4:00	0.6	NE
4-Jul-2015	5:00	0.1	ENE
4-Jul-2015	6:00	0.7	ENE
4-Jul-2015	7:00	0.7	NE
4-Jul-2015	8:00	1.3	ENE
4-Jul-2015	9:00	1.8	ENE
4-Jul-2015	10:00	2.4	ENE
4-Jul-2015	11:00	2.1	ENE
4-Jul-2015	12:00	2.8	NE
4-Jul-2015	13:00	2.8	N
4-Jul-2015	14:00	2.4	W
4-Jul-2015	15:00	2.7	N
4-Jul-2015	16:00	2.1	WSW
4-Jul-2015	17:00	2.4	SW
4-Jul-2015	18:00	2.5	SSW
4-Jul-2015	19:00	2.1	SW
4-Jul-2015	20:00	1.5	W
4-Jul-2015	21:00	2.2	SSW
4-Jul-2015	22:00	2.1	SSW
4-Jul-2015	23:00	1.8	ENE
5-Jul-2015	0:00	1.8	ENE
5-Jul-2015	1:00	1.9	SSW
5-Jul-2015	2:00	2.5	SSW
5-Jul-2015	3:00	2.8	SSW
5-Jul-2015	4:00	2.8	S
5-Jul-2015	5:00	2.8	SW
5-Jul-2015	6:00	2.8	WSW
5-Jul-2015	7:00	3.1	SW
5-Jul-2015	8:00	2.2	SW
5-Jul-2015	9:00	1.9	SW
5-Jul-2015	10:00	2.4	SW
5-Jul-2015	11:00	2.5	NE
5-Jul-2015	12:00	2.8	ENE
5-Jul-2015	13:00	3.1	NE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
5-Jul-2015	14:00	4	SSW
5-Jul-2015	15:00	3.7	W
5-Jul-2015	16:00	3.4	WNW
5-Jul-2015	17:00	3.1	WNW
5-Jul-2015	18:00	2.4	WNW
5-Jul-2015	19:00	1.9	WNW
5-Jul-2015	20:00	2.7	WNW
5-Jul-2015	21:00	2.7	WNW
5-Jul-2015	22:00	2.7	ENE
5-Jul-2015	23:00	2.5	ENE
6-Jul-2015	0:00	2.2	NNE
6-Jul-2015	1:00	2.7	WSW
6-Jul-2015	2:00	1.9	W
6-Jul-2015	3:00	1.6	WSW
6-Jul-2015	4:00	1.8	SW
6-Jul-2015	5:00	1.9	SW
6-Jul-2015	6:00	2.1	SW
6-Jul-2015	7:00	2.4	SW
6-Jul-2015	8:00	2.4	NE
6-Jul-2015	9:00	2.7	SW
6-Jul-2015	10:00	2.5	SW
6-Jul-2015	11:00	2.5	SW
6-Jul-2015	12:00	3.1	SSE
6-Jul-2015	13:00	3.3	S
6-Jul-2015	14:00	3.1	SW
6-Jul-2015	15:00	3	SW
6-Jul-2015	16:00	2.1	SSW
6-Jul-2015	17:00	1.8	SW
6-Jul-2015	18:00	1.5	SW
6-Jul-2015	19:00	1.8	SSE
6-Jul-2015	20:00	2.1	SE
6-Jul-2015	21:00	2.2	SW
6-Jul-2015	22:00	2.5	SSE
6-Jul-2015	23:00	2.5	WSW
7-Jul-2015	0:00	2.2	E
7-Jul-2015	1:00	2.1	E
7-Jul-2015	2:00	1.6	E
7-Jul-2015	3:00	1.8	SSW
7-Jul-2015	4:00	1.8	SSW
7-Jul-2015	5:00	2.4	NW
7-Jul-2015	6:00	3	NE
7-Jul-2015	7:00	3.3	NE
7-Jul-2015	8:00	3.1	NE
7-Jul-2015	9:00	2.5	NE
7-Jul-2015	10:00	2.2	NE
7-Jul-2015	11:00	2.5	SW
7-Jul-2015	12:00	2.5	SSE
7-Jul-2015	13:00	2.2	W
7-Jul-2015	14:00	2.2	SW
7-Jul-2015	15:00	2.4	SSW
7-Jul-2015	16:00	2.4	SSW
7-Jul-2015	17:00	2.1	SW
7-Jul-2015	18:00	2.4	E
7-Jul-2015	19:00	1.6	SSE
7-Jul-2015	20:00	1.5	N

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
7-Jul-2015	21:00	1.5	W
7-Jul-2015	22:00	3	W
7-Jul-2015	23:00	2.5	W
8-Jul-2015	0:00	2.5	W
8-Jul-2015	1:00	2.4	W
8-Jul-2015	2:00	3.1	W
8-Jul-2015	3:00	2.7	E
8-Jul-2015	4:00	3.4	SSW
8-Jul-2015	5:00	3.6	SSW
8-Jul-2015	6:00	3.4	NNW
8-Jul-2015	7:00	3.3	SW
8-Jul-2015	8:00	3	SW
8-Jul-2015	9:00	2.7	SW
8-Jul-2015	10:00	3.1	W
8-Jul-2015	11:00	2.8	N
8-Jul-2015	12:00	3.3	NE
8-Jul-2015	13:00	3.7	W
8-Jul-2015	14:00	3.7	S
8-Jul-2015	15:00	4.3	NE
8-Jul-2015	16:00	4	WNW
8-Jul-2015	17:00	3.9	WNW
8-Jul-2015	18:00	3.3	WNW
8-Jul-2015	19:00	3.6	WNW
8-Jul-2015	20:00	2.8	WNW
8-Jul-2015	21:00	3.1	W
8-Jul-2015	22:00	2.8	W
8-Jul-2015	23:00	2.8	W
9-Jul-2015	0:00	3	W
9-Jul-2015	1:00	2.4	WNW
9-Jul-2015	2:00	2.4	WNW
9-Jul-2015	3:00	2.7	WNW
9-Jul-2015	4:00	2.8	WNW
9-Jul-2015	5:00	3	WNW
9-Jul-2015	6:00	3	W
9-Jul-2015	7:00	2.1	W
9-Jul-2015	8:00	2.1	W
9-Jul-2015	9:00	3	WNW
9-Jul-2015	10:00	4.3	NE
9-Jul-2015	11:00	3.9	NE
9-Jul-2015	12:00	3.7	W
9-Jul-2015	13:00	4	NE
9-Jul-2015	14:00	4.3	NE
9-Jul-2015	15:00	3.7	ENE
9-Jul-2015	16:00	3.3	SE
9-Jul-2015	17:00	3.3	WNW
9-Jul-2015	18:00	2.7	WNW
9-Jul-2015	19:00	2.5	WNW
9-Jul-2015	20:00	2.5	NNE
9-Jul-2015	21:00	2.5	NE
9-Jul-2015	22:00	2.4	NE
9-Jul-2015	23:00	2.5	NE
10-Jul-2015	0:00	3.7	E
10-Jul-2015	1:00	4.7	NE
10-Jul-2015	2:00	4.7	NE
10-Jul-2015	3:00	3.4	NE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
10-Jul-2015	4:00	3.4	N
10-Jul-2015	5:00	3.9	WSW
10-Jul-2015	6:00	4	WSW
10-Jul-2015	7:00	4.2	WSW
10-Jul-2015	8:00	3.7	SW
10-Jul-2015	9:00	3.7	W
10-Jul-2015	10:00	4	SW
10-Jul-2015	11:00	4.2	WNW
10-Jul-2015	12:00	4	WNW
10-Jul-2015	13:00	4.2	S
10-Jul-2015	14:00	4	SSW
10-Jul-2015	15:00	3.3	S
10-Jul-2015	16:00	2.2	SSW
10-Jul-2015	17:00	2.5	WNW
10-Jul-2015	18:00	2.5	W
10-Jul-2015	19:00	1.9	W
10-Jul-2015	20:00	1.9	WNW
10-Jul-2015	21:00	1.8	WNW
10-Jul-2015	22:00	1.6	WNW
10-Jul-2015	23:00	2.2	WNW
11-Jul-2015	0:00	2.4	WNW
11-Jul-2015	1:00	2.2	WNW
11-Jul-2015	2:00	2.8	WNW
11-Jul-2015	3:00	1.9	WNW
11-Jul-2015	4:00	1.6	SE
11-Jul-2015	5:00	2.4	SSW
11-Jul-2015	6:00	2.2	S
11-Jul-2015	7:00	1.6	SW
11-Jul-2015	8:00	1.6	SSW
11-Jul-2015	9:00	1.9	SSW
11-Jul-2015	10:00	1.8	WNW
11-Jul-2015	11:00	1.9	WNW
11-Jul-2015	12:00	2.7	W
11-Jul-2015	13:00	2.7	WNW
11-Jul-2015	14:00	2.2	W
11-Jul-2015	15:00	2.7	W
11-Jul-2015	16:00	2.8	W
11-Jul-2015	17:00	2.8	W
11-Jul-2015	18:00	1.9	WSW
11-Jul-2015	19:00	0.3	WSW
11-Jul-2015	20:00	1	WSW
11-Jul-2015	21:00	1.2	WSW
11-Jul-2015	22:00	0.9	WSW
11-Jul-2015	23:00	1.2	W
12-Jul-2015	0:00	1	W
12-Jul-2015	1:00	0.9	W
12-Jul-2015	2:00	0.9	W
12-Jul-2015	3:00	0.7	WNW
12-Jul-2015	4:00	0.3	WNW
12-Jul-2015	5:00	0.4	WNW
12-Jul-2015	6:00	0.1	SW
12-Jul-2015	7:00	1.2	W
12-Jul-2015	8:00	1	W
12-Jul-2015	9:00	1.2	WNW
12-Jul-2015	10:00	0.7	WSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
12-Jul-2015	11:00	1.6	W
12-Jul-2015	12:00	2.1	WNW
12-Jul-2015	13:00	2.5	WNW
12-Jul-2015	14:00	2.5	WSW
12-Jul-2015	15:00	2.5	WSW
12-Jul-2015	16:00	2.4	WSW
12-Jul-2015	17:00	2.5	W
12-Jul-2015	18:00	1.5	WNW
12-Jul-2015	19:00	0.7	WNW
12-Jul-2015	20:00	0.3	WNW
12-Jul-2015	21:00	0.3	WNW
12-Jul-2015	22:00	0.5	WNW
12-Jul-2015	23:00	0.8	WNW
13-Jul-2015	0:00	0.8	E
13-Jul-2015	1:00	0.9	WNW
13-Jul-2015	2:00	1.2	W
13-Jul-2015	3:00	1.2	W
13-Jul-2015	4:00	1.5	WNW
13-Jul-2015	5:00	1.8	WNW
13-Jul-2015	6:00	1.8	WNW
13-Jul-2015	7:00	1.1	W
13-Jul-2015	8:00	1.1	SSW
13-Jul-2015	9:00	0.4	SSW
13-Jul-2015	10:00	1	SSW
13-Jul-2015	11:00	1.2	SSW
13-Jul-2015	12:00	1.8	WNW
13-Jul-2015	13:00	1.8	WNW
13-Jul-2015	14:00	1.6	WSW
13-Jul-2015	15:00	2.7	SW
13-Jul-2015	16:00	1.9	W
13-Jul-2015	17:00	1.6	W
13-Jul-2015	18:00	1.3	W
13-Jul-2015	19:00	1.5	WNW
13-Jul-2015	20:00	1.2	WNW
13-Jul-2015	21:00	1.8	WNW
13-Jul-2015	22:00	1.9	WNW
13-Jul-2015	23:00	2.5	W
14-Jul-2015	0:00	2.2	W
14-Jul-2015	1:00	2.1	WNW
14-Jul-2015	2:00	2.1	WNW
14-Jul-2015	3:00	2.4	W
14-Jul-2015	4:00	2.2	WNW
14-Jul-2015	5:00	1.5	SW
14-Jul-2015	6:00	1.5	SW
14-Jul-2015	7:00	1	WNW
14-Jul-2015	8:00	1	WNW
14-Jul-2015	9:00	1.2	NW
14-Jul-2015	10:00	2.1	WNW
14-Jul-2015	11:00	2.2	W
14-Jul-2015	12:00	3	WSW
14-Jul-2015	13:00	2.7	WNW
14-Jul-2015	14:00	2.5	WNW
14-Jul-2015	15:00	2.5	WNW
14-Jul-2015	16:00	2.5	W
14-Jul-2015	17:00	2.4	WSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
14-Jul-2015	18:00	2.4	WSW
14-Jul-2015	19:00	1.5	SW
14-Jul-2015	20:00	2.1	W
14-Jul-2015	21:00	2.8	WSW
14-Jul-2015	22:00	3.1	W
14-Jul-2015	23:00	1.8	W
15-Jul-2015	0:00	2.4	ESE
15-Jul-2015	1:00	1.9	NNW
15-Jul-2015	2:00	2.2	ENE
15-Jul-2015	3:00	1.6	ENE
15-Jul-2015	4:00	2.1	ENE
15-Jul-2015	5:00	1.5	SSW
15-Jul-2015	6:00	2.1	E
15-Jul-2015	7:00	1.8	E
15-Jul-2015	8:00	1.5	E
15-Jul-2015	9:00	2.4	NE
15-Jul-2015	10:00	3.1	N
15-Jul-2015	11:00	3	SSW
15-Jul-2015	12:00	3.4	SSW
15-Jul-2015	13:00	3.3	N
15-Jul-2015	14:00	2.8	SE
15-Jul-2015	15:00	2.8	N
15-Jul-2015	16:00	3.3	N
15-Jul-2015	17:00	3.3	WNW
15-Jul-2015	18:00	3	SE
15-Jul-2015	19:00	2.4	SE
15-Jul-2015	20:00	1.9	E
15-Jul-2015	21:00	1	ENE
15-Jul-2015	22:00	1.2	SSW
15-Jul-2015	23:00	0.7	N
16-Jul-2015	0:00	0.3	ENE
16-Jul-2015	1:00	0.3	SSW
16-Jul-2015	2:00	0.1	SSW
16-Jul-2015	3:00	0.8	ENE
16-Jul-2015	4:00	0.1	N
16-Jul-2015	5:00	0.4	ENE
16-Jul-2015	6:00	0.1	E
16-Jul-2015	7:00	0.3	NE
16-Jul-2015	8:00	0.3	E
16-Jul-2015	9:00	1	SE
16-Jul-2015	10:00	1.6	ENE
16-Jul-2015	11:00	1.3	N
16-Jul-2015	12:00	1.8	N
16-Jul-2015	13:00	2.5	N
16-Jul-2015	14:00	2.5	N
16-Jul-2015	15:00	2.8	ENE
16-Jul-2015	16:00	2.4	ENE
16-Jul-2015	17:00	2.1	ENE
16-Jul-2015	18:00	1.2	ENE
16-Jul-2015	19:00	0.4	ENE
16-Jul-2015	20:00	0.3	NE
16-Jul-2015	21:00	0.4	NNE
16-Jul-2015	22:00	0.3	NE
16-Jul-2015	23:00	0.5	NE
17-Jul-2015	0:00	0.1	ENE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
17-Jul-2015	1:00	0.3	ENE
17-Jul-2015	2:00	0.1	NE
17-Jul-2015	3:00	0.4	NE
17-Jul-2015	4:00	0.3	ENE
17-Jul-2015	5:00	0.3	E
17-Jul-2015	6:00	0.4	SE
17-Jul-2015	7:00	0.4	SE
17-Jul-2015	8:00	0.9	ENE
17-Jul-2015	9:00	0.6	ESE
17-Jul-2015	10:00	0.4	E
17-Jul-2015	11:00	0.9	ESE
17-Jul-2015	12:00	1.2	E
17-Jul-2015	13:00	1.6	ESE
17-Jul-2015	14:00	1.8	E
17-Jul-2015	15:00	2.5	S
17-Jul-2015	16:00	2.4	SSE
17-Jul-2015	17:00	1.9	S
17-Jul-2015	18:00	1.2	S
17-Jul-2015	19:00	0.4	S
17-Jul-2015	20:00	0.9	S
17-Jul-2015	21:00	0.7	SE
17-Jul-2015	22:00	0.6	SE
17-Jul-2015	23:00	0.3	E
18-Jul-2015	0:00	0.1	N
18-Jul-2015	1:00	0.4	SW
18-Jul-2015	2:00	0.6	S
18-Jul-2015	3:00	0.1	SSE
18-Jul-2015	4:00	0.1	S
18-Jul-2015	5:00	0.3	SE
18-Jul-2015	6:00	0.5	SSW
18-Jul-2015	7:00	0.5	SSW
18-Jul-2015	8:00	0.3	SSW
18-Jul-2015	9:00	1	SSW
18-Jul-2015	10:00	2.8	SSW
18-Jul-2015	11:00	3.1	SSE
18-Jul-2015	12:00	4.2	S
18-Jul-2015	13:00	3.9	S
18-Jul-2015	14:00	3.4	SSE
18-Jul-2015	15:00	3.9	S
18-Jul-2015	16:00	4.3	SSE
18-Jul-2015	17:00	3.7	NE
18-Jul-2015	18:00	3.1	NE
18-Jul-2015	19:00	3.3	SE
18-Jul-2015	20:00	3.4	SE
18-Jul-2015	21:00	3.7	WSW
18-Jul-2015	22:00	3.3	N
18-Jul-2015	23:00	4.6	N
19-Jul-2015	0:00	4.3	N
19-Jul-2015	1:00	4.2	WNW
19-Jul-2015	2:00	4.3	S
19-Jul-2015	3:00	4.3	W
19-Jul-2015	4:00	3.6	W
19-Jul-2015	5:00	3.9	WNW
19-Jul-2015	6:00	3.7	N
19-Jul-2015	7:00	2.7	W

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
19-Jul-2015	8:00	2.4	W
19-Jul-2015	9:00	2.7	WNW
19-Jul-2015	10:00	3	W
19-Jul-2015	11:00	3	WNW
19-Jul-2015	12:00	3.6	WNW
19-Jul-2015	13:00	2.5	ESE
19-Jul-2015	14:00	2.2	WNW
19-Jul-2015	15:00	1.8	SSW
19-Jul-2015	16:00	1.9	NW
19-Jul-2015	17:00	1.8	W
19-Jul-2015	18:00	1.5	W
19-Jul-2015	19:00	1.3	W
19-Jul-2015	20:00	1.3	W
19-Jul-2015	21:00	0.6	W
19-Jul-2015	22:00	1	W
19-Jul-2015	23:00	0.9	N
20-Jul-2015	0:00	1.3	W
20-Jul-2015	1:00	1	E
20-Jul-2015	2:00	1	NE
20-Jul-2015	3:00	0.4	NNE
20-Jul-2015	4:00	0.6	WSW
20-Jul-2015	5:00	0.1	SSW
20-Jul-2015	6:00	0.1	SSW
20-Jul-2015	7:00	0.1	WSW
20-Jul-2015	8:00	0.1	WSW
20-Jul-2015	9:00	1	WSW
20-Jul-2015	10:00	1.5	SSW
20-Jul-2015	11:00	1.5	ENE
20-Jul-2015	12:00	1.8	ENE
20-Jul-2015	13:00	1.8	WSW
20-Jul-2015	14:00	2.2	ENE
20-Jul-2015	15:00	3	E
20-Jul-2015	16:00	3	ESE
20-Jul-2015	17:00	2.8	NE
20-Jul-2015	18:00	2.5	E
20-Jul-2015	19:00	1.8	E
20-Jul-2015	20:00	1.5	E
20-Jul-2015	21:00	1.2	NE
20-Jul-2015	22:00	1.6	SW
20-Jul-2015	23:00	1.3	SW
21-Jul-2015	0:00	1.3	SW
21-Jul-2015	1:00	1.3	SW
21-Jul-2015	2:00	1.3	SW
21-Jul-2015	3:00	1	SW
21-Jul-2015	4:00	1	SW
21-Jul-2015	5:00	1.2	SW
21-Jul-2015	6:00	0.9	SW
21-Jul-2015	7:00	0.6	E
21-Jul-2015	8:00	0.3	E
21-Jul-2015	9:00	0.3	E
21-Jul-2015	10:00	0.7	E
21-Jul-2015	11:00	1.6	E
21-Jul-2015	12:00	1.5	N
21-Jul-2015	13:00	1.9	NE
21-Jul-2015	14:00	3	NE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
21-Jul-2015	15:00	2.7	SSW
21-Jul-2015	16:00	2.5	WSW
21-Jul-2015	17:00	2.4	WSW
21-Jul-2015	18:00	2.5	WSW
21-Jul-2015	19:00	2.7	WNW
21-Jul-2015	20:00	2.1	NNW
21-Jul-2015	21:00	1.9	W
21-Jul-2015	22:00	1.6	SW
21-Jul-2015	23:00	1.8	SW
22-Jul-2015	0:00	1.9	SW
22-Jul-2015	1:00	1.9	SW
22-Jul-2015	2:00	1.6	SW
22-Jul-2015	3:00	1.5	SW
22-Jul-2015	4:00	1.9	SW
22-Jul-2015	5:00	1.9	SW
22-Jul-2015	6:00	1.5	WNW
22-Jul-2015	7:00	1.8	WNW
22-Jul-2015	8:00	2.4	SW
22-Jul-2015	9:00	2.4	SW
22-Jul-2015	10:00	1.9	SW
22-Jul-2015	11:00	2.4	ENE
22-Jul-2015	12:00	2.5	ENE
22-Jul-2015	13:00	2.1	N
22-Jul-2015	14:00	1.9	ESE
22-Jul-2015	15:00	2.1	ESE
22-Jul-2015	16:00	2.7	SSE
22-Jul-2015	17:00	1.9	WSW
22-Jul-2015	18:00	1.3	W
22-Jul-2015	19:00	2.2	SSE
22-Jul-2015	20:00	2.4	SSE
22-Jul-2015	21:00	2.5	SSE
22-Jul-2015	22:00	3	ESE
22-Jul-2015	23:00	2.2	ESE
23-Jul-2015	0:00	2.8	NNE
23-Jul-2015	1:00	2.8	SW
23-Jul-2015	2:00	3	W
23-Jul-2015	3:00	2.5	W
23-Jul-2015	4:00	2.8	ENE
23-Jul-2015	5:00	3.1	ESE
23-Jul-2015	6:00	2.4	WNW
23-Jul-2015	7:00	2.4	WNW
23-Jul-2015	8:00	2.7	ENE
23-Jul-2015	9:00	3.1	SE
23-Jul-2015	10:00	3.6	SE
23-Jul-2015	11:00	3.4	N
23-Jul-2015	12:00	3.3	ENE
23-Jul-2015	13:00	3.1	NNE
23-Jul-2015	14:00	3.1	SE
23-Jul-2015	15:00	3.1	NNE
23-Jul-2015	16:00	2.7	E
23-Jul-2015	17:00	2.7	NE
23-Jul-2015	18:00	2.5	ENE
23-Jul-2015	19:00	1.8	W
23-Jul-2015	20:00	2.8	SW
23-Jul-2015	21:00	2.8	NE

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
23-Jul-2015	22:00	2.7	NE
23-Jul-2015	23:00	2.1	NE
24-Jul-2015	0:00	1.9	NE
24-Jul-2015	1:00	2.2	ESE
24-Jul-2015	2:00	2.2	ESE
24-Jul-2015	3:00	2.1	ESE
24-Jul-2015	4:00	1.6	ESE
24-Jul-2015	5:00	1.2	ESE
24-Jul-2015	6:00	1.5	ESE
24-Jul-2015	7:00	1.8	SSE
24-Jul-2015	8:00	2.1	S
24-Jul-2015	9:00	2.8	S
24-Jul-2015	10:00	3.3	S
24-Jul-2015	11:00	3.4	S
24-Jul-2015	12:00	3	S
24-Jul-2015	13:00	2.8	ENE
24-Jul-2015	14:00	3	SW
24-Jul-2015	15:00	3.4	WSW
24-Jul-2015	16:00	3.6	WSW
24-Jul-2015	17:00	3	WSW
24-Jul-2015	18:00	2.1	WSW
24-Jul-2015	19:00	1.8	NE
24-Jul-2015	20:00	1.6	E
24-Jul-2015	21:00	1.6	SW
24-Jul-2015	22:00	1.3	SW
24-Jul-2015	23:00	1.5	SW
25-Jul-2015	0:00	1.8	SW
25-Jul-2015	1:00	1.5	SW
25-Jul-2015	2:00	1.3	WSW
25-Jul-2015	3:00	1.5	NE
25-Jul-2015	4:00	0.9	W
25-Jul-2015	5:00	1	W
25-Jul-2015	6:00	1.3	W
25-Jul-2015	7:00	1.3	WSW
25-Jul-2015	8:00	1.9	WSW
25-Jul-2015	9:00	2.7	WSW
25-Jul-2015	10:00	3	SW
25-Jul-2015	11:00	2.7	SW
25-Jul-2015	12:00	3.1	SSW
25-Jul-2015	13:00	3.6	SSW
25-Jul-2015	14:00	3.3	SSW
25-Jul-2015	15:00	3.7	NE
25-Jul-2015	16:00	2.8	NE
25-Jul-2015	17:00	2.5	ENE
25-Jul-2015	18:00	1.8	ENE
25-Jul-2015	19:00	1.5	W
25-Jul-2015	20:00	1.9	W
25-Jul-2015	21:00	1.2	W
25-Jul-2015	22:00	1.5	W
25-Jul-2015	23:00	1	W
26-Jul-2015	0:00	1.8	NNW
26-Jul-2015	1:00	1	W
26-Jul-2015	2:00	1.3	WSW
26-Jul-2015	3:00	0.7	WSW
26-Jul-2015	4:00	1.2	WSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
26-Jul-2015	5:00	1.3	WSW
26-Jul-2015	6:00	0.7	W
26-Jul-2015	7:00	0.9	SSW
26-Jul-2015	8:00	2.8	W
26-Jul-2015	9:00	2.7	W
26-Jul-2015	10:00	3.4	SW
26-Jul-2015	11:00	2.8	ENE
26-Jul-2015	12:00	3.6	SSE
26-Jul-2015	13:00	3.4	SSW
26-Jul-2015	14:00	3.6	SSW
26-Jul-2015	15:00	3.1	WSW
26-Jul-2015	16:00	2.1	E
26-Jul-2015	17:00	0.9	ENE
26-Jul-2015	18:00	0.6	N
26-Jul-2015	19:00	0.9	ENE
26-Jul-2015	20:00	1	WSW
26-Jul-2015	21:00	1.8	SSW
26-Jul-2015	22:00	1.9	SW
26-Jul-2015	23:00	1.8	WSW
27-Jul-2015	0:00	1.9	NE
27-Jul-2015	1:00	1.9	SW
27-Jul-2015	2:00	1.6	SW
27-Jul-2015	3:00	1.5	SW
27-Jul-2015	4:00	1.6	N
27-Jul-2015	5:00	1.8	N
27-Jul-2015	6:00	1.8	SW
27-Jul-2015	7:00	1	SSW
27-Jul-2015	8:00	1.6	SE
27-Jul-2015	9:00	2.2	WSW
27-Jul-2015	10:00	2.2	WSW
27-Jul-2015	11:00	2.7	WSW
27-Jul-2015	12:00	3.6	N
27-Jul-2015	13:00	3.6	N
27-Jul-2015	14:00	3.7	N
27-Jul-2015	15:00	3.4	NNE
27-Jul-2015	16:00	2.8	NE
27-Jul-2015	17:00	2.4	ENE
27-Jul-2015	18:00	2.2	ENE
27-Jul-2015	19:00	1.8	NE
27-Jul-2015	20:00	1.5	NE
27-Jul-2015	21:00	1.5	NE
27-Jul-2015	22:00	0.9	NE
27-Jul-2015	23:00	1.2	NE
28-Jul-2015	0:00	0.7	NE
28-Jul-2015	1:00	0.6	WNW
28-Jul-2015	2:00	0.3	WSW
28-Jul-2015	3:00	0.6	WSW
28-Jul-2015	4:00	1	W
28-Jul-2015	5:00	1	WSW
28-Jul-2015	6:00	0.7	W
28-Jul-2015	7:00	1.2	WNW
28-Jul-2015	8:00	1.2	W
28-Jul-2015	9:00	1.8	WNW
28-Jul-2015	10:00	2.7	W
28-Jul-2015	11:00	2.5	WSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
28-Jul-2015	12:00	2.4	WSW
28-Jul-2015	13:00	2.8	WSW
28-Jul-2015	14:00	3	WSW
28-Jul-2015	15:00	2.4	WSW
28-Jul-2015	16:00	2.2	WSW
28-Jul-2015	17:00	1.8	WSW
28-Jul-2015	18:00	1	W
28-Jul-2015	19:00	0.6	W
28-Jul-2015	20:00	0.1	WSW
28-Jul-2015	21:00	0.8	SSW
28-Jul-2015	22:00	0.8	SSW
28-Jul-2015	23:00	0.4	SSE
29-Jul-2015	0:00	0.9	ESE
29-Jul-2015	1:00	0.6	SSE
29-Jul-2015	2:00	0.7	NNW
29-Jul-2015	3:00	1	W
29-Jul-2015	4:00	0.7	W
29-Jul-2015	5:00	1.2	N
29-Jul-2015	6:00	0.9	N
29-Jul-2015	7:00	0.6	NNE
29-Jul-2015	8:00	0.9	NNE
29-Jul-2015	9:00	1.5	NE
29-Jul-2015	10:00	1.6	ENE
29-Jul-2015	11:00	2.4	E
29-Jul-2015	12:00	2.8	ENE
29-Jul-2015	13:00	2.4	ENE
29-Jul-2015	14:00	2.4	ENE
29-Jul-2015	15:00	2.8	SSW
29-Jul-2015	16:00	2.4	S
29-Jul-2015	17:00	1.8	S
29-Jul-2015	18:00	1.3	WSW
29-Jul-2015	19:00	0.9	NW
29-Jul-2015	20:00	0.6	NNE
29-Jul-2015	21:00	0.6	N
29-Jul-2015	22:00	0.3	N
29-Jul-2015	23:00	0.1	NW
30-Jul-2015	0:00	0.3	N
30-Jul-2015	1:00	0.4	WNW
30-Jul-2015	2:00	0.1	N
30-Jul-2015	3:00	1	N
30-Jul-2015	4:00	1.3	NNE
30-Jul-2015	5:00	1.2	ENE
30-Jul-2015	6:00	1.2	ENE
30-Jul-2015	7:00	1.3	ENE
30-Jul-2015	8:00	1.2	ENE
30-Jul-2015	9:00	2.4	ENE
30-Jul-2015	10:00	1.9	ENE
30-Jul-2015	11:00	1.9	N
30-Jul-2015	12:00	2.5	NNE
30-Jul-2015	13:00	2.2	NE
30-Jul-2015	14:00	2.1	ENE
30-Jul-2015	15:00	1.9	W
30-Jul-2015	16:00	1.2	ENE
30-Jul-2015	17:00	1.6	E
30-Jul-2015	18:00	1.2	W

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
30-Jul-2015	19:00	1.3	W
30-Jul-2015	20:00	1.2	WSW
30-Jul-2015	21:00	0.9	SW
30-Jul-2015	22:00	0.6	W
30-Jul-2015	23:00	1.5	W
31-Jul-2015	0:00	0.6	S
31-Jul-2015	1:00	0.7	S
31-Jul-2015	2:00	0.7	S
31-Jul-2015	3:00	0.6	S
31-Jul-2015	4:00	0.7	S
31-Jul-2015	5:00	1.6	SSW
31-Jul-2015	6:00	1	W
31-Jul-2015	7:00	1.2	WNW
31-Jul-2015	8:00	1.6	W
31-Jul-2015	9:00	1.6	W
31-Jul-2015	10:00	1.8	W
31-Jul-2015	11:00	1.6	W
31-Jul-2015	12:00	0.9	WNW
31-Jul-2015	13:00	1.2	W
31-Jul-2015	14:00	0.7	WSW
31-Jul-2015	15:00	0.9	WSW
31-Jul-2015	16:00	0.9	WSW
31-Jul-2015	17:00	0.9	WSW
31-Jul-2015	18:00	0.4	WSW
31-Jul-2015	19:00	0.1	WNW
31-Jul-2015	20:00	0.4	W
31-Jul-2015	21:00	0.1	W
31-Jul-2015	22:00	0.3	WSW
31-Jul-2015	23:00	0.9	SSE

APPENDIX K
EVENT ACTION PLANS

Event / Action Plan for Air Quality

<table>
<tr><th rowspan="2">EVENT</th><th colspan="4">ACTION</th></tr>
<tr><th>ET</th><th>IEC</th><th>SO</th><th>CONTRACTOR</th></tr>
<tr><td colspan="5">ACTION LEVEL</td></tr>
<tr><td>1. Exceedance for one sample</td><td>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.</td><td>1. Check monitoring data submitted by ET;
2. Check Contractor’s working method.</td><td>1. Notify Contractor.</td><td>1. Rectify any unacceptable practice;
2. Amend working methods if appropriate.</td></tr>
<tr><td>2.Exceedance for two or more consecutive samples</td><td>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.</td><td>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.</td><td>1. Confirm receipt of notification of failure in writing;
2. Notify Contractor;</td><td>1. Submit proposals for remedial to SO within 3 working days of notification;
2. Implement the agreed proposals;
3. Amend proposal if appropriate.</td></tr>
</table>

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)	4	6	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: 29 July 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)
SR2	Mid-flood	23.5	34.4	CS1	6.6	7.9	8.6	***26.6***	(2), (4) & (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. (Please refer to Table I)
(5) – Monitoring station is situated at the upstream of the construction sites.
(6) – Other(s): Please specify – Sediment plume due to natural fluctuation of shallow water was observed.

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

Station(s)	Suspended Solids (mg/L)	
	Min	Max
SR2	8.5	32.5

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: 6 August 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: <u>31 July 2015</u>

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)
ST1	Mid-ebb	23.5	34.4	CS2	40.2	48.2	52.3	***49.5***	(2) & (6)	No
ST2								***48.9***	(2), (5) & (6)	No
IS1	Mid-flood			CS1	30.1	36.1	39.1	***<u>39.8</u>***	(2) & (6)	No
IS2								***<u>45.3</u>***	(2) & (6)	No
IS4								***<u>48.7</u>***	(2) & (6)	No
SR1								***36.9***	(2), (5) & (6)	No
SR6								***<u>44.3</u>***	(2) & (6)	No
ST1								***<u>41.9</u>***	(2) & (6)	No
ST2								***<u>40.2</u>***	(2) & (6)	No

Note: ***Bold Italic*** means Action Level exceedance
<u>Bold Italic with underline</u> means Limit Level exceedance

*Remarks
(1) – No major marine construction activity was conducted.
(2) – No pollution discharge from construction activity was observed.
(3) – Control Station value already exceeded either the Baseline Action or Limit Levels.
(4) – The exceeded results were similar or within the ranges baseline monitoring results.
(5) – Monitoring station is situated at the upstream of the construction sites.
(6) – Other(s): Please specify – <u>Adverse water quality outside the site boundary was observed. 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 also observed.</u>

Part B – Conclusion: <u>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.</u>

Part C – Recommendation: <u>As the exeedances were not related to the contract works, no further action to be required.</u>

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: 6 August 2015

APPENDIX M
SITE AUDIT SUMMARY

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

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

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	150707
Date	7 July 2015 (Tuesday)
Time	9:15 - 11:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
150707-R01	• To repair the damaged silt curtain at P74.	B25
150707-R04	• Muddy sediment was observed discharged into the sea at P75. The Contractor was reminded to dispose it properly.	B21
	B. Ecology	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
150707-R02	• To provide proper shelter (3 sides and on top) for dusty materials at P74.	D7
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
150707-R03	• Clear the oil stains at P74.	F8
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150630), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

	Name	Signature	Date
Recorded by	Ivy Tam	Ivy	7 July 2015
Checked by	Dr. Priscilla Choy	[signature]	7 July 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
(7 July 2015)

	**Ref No:** 150707-R01 **Impact:** Water Quality (B25) **Details:** To repair the damaged silt curtain at P74..
	**Ref No:** 150707-R02 **Impact:** Air Quality (D7) **Details:** To provide proper shelter (3 sides and on top) for dusty materials at P74.
	**Ref No:** 150707-R03 **Impact:** Waste / Chemical Management (F8) **Details:** Clear the oil stains at P74.

	**Ref No:** 150707-R04 **Impact:** Water Quality (B21) **Details:** Muddy sediment was observed discharged into the sea at P75. The Contractor was reminded to dispose it 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:** 150630-R01 **Impact:** Air Quality (D19) **Details:** To carry out maintenance of excavator which emitted heavy smoke at between P81 and P82. **Follow Up:** No further heavy smoke was observed from the excavator.
	**Ref No:** 150630-R02 **Impact:** Waste / Chemical Management (F4ii.) **Details:** Clear the waste materials at the seawall area at between P81 and P82. **Follow Up:** The waste materials were cleared by the workers.

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

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

<table>
<tr><td>
</td><td>Ref No: 150630-R03

Impact:
Waste / Chemical Management (F8)

Details:
Clear the oil stains at the platform at P69-P70.

Follow Up:
The oil stains were cleared by the workers and tarpaulin sheet was provided at underneath of mobile crane to avoid further oil spillage.</td></tr>
<tr><td></td><td>Ref No: 150630-R04

Impact:
Water Quality (B25)

Details:
To repair the damage silt curtain at P69.

Follow Up:
The damaged silt curtain was repaired and deployed again.</td></tr>
</table>

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	150714
Date	14 July 2015 (Tuesday)
Time	9:30 - 11:50 and 13:45 – 15:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
150714-R01	• Clear the waste materials at the platform at P20 to avoid falling into the sea.	B20
150714-R05	• Provide mitigation measures to avoid the leakage of water from site to the public road (near P111).	B16
	B. Ecology	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
150714-R02	• Provide tarpaulin sheet at underneath of pressure relief joint to avoid oil spillage at P20.	F8
150714-R03	• Provide drip tray for the generator at P20.	F9
150714-R04	• Clear the rubbish at near container office (P113).	F1iii.
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150707), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

	Name	Signature	Date
Recorded by	Ivy Tam	Ivy	14 July 2015
Checked by	Dr. Priscilla Choy	[signature]	14 July 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
(14 July 2015)

<table>
<tr><td>
</td><td>Ref No: 150714-R01

Impact:
Water Quality (B20)

Details:
Clear the waste materials at the platform at P20 to avoid falling into the sea.</td></tr>
<tr><td></td><td>Ref No: 150714-R02

Impact:
Waste / Chemical Management (F8)

Details:
Provide tarpaulin sheet at underneath of pressure relief joint to avoid oil spillage at P20.</td></tr>
</table>

	**Ref No:** 150714-R03 **Impact:** Waste / Chemical Management (F9) **Details:** Provide drip tray for the generator at P20.
	**Ref No:** 150714-R04 **Impact:** Waste / Chemical Management (F1iii.) **Details:** Clear the rubbish at near container office (P113).
	**Ref No:** 150714-R05 **Impact:** Water Quality (B16) **Details:** Provide mitigation measures to avoid the leakage of water from site to the public road (near P111).

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

<table>
<tr><td></td><td>Ref No: 150707-R01

Impact:
Water Quality (B25)

Details:
To repair the damaged silt curtain at P74.

Follow Up:
Damaged silt curtain was replaced.</td></tr>
<tr><td></td><td>Ref No: 150707-R02

Impact:
Air Quality (D7)

Details:
To provide proper shelter (3 sides and on top) for dusty materials at P74.

Follow Up:
The dusty materials were covered properly.</td></tr>
<tr><td></td><td>Ref No: 150707-R03

Impact:
Waste / Chemical Management (F8)

Details:
Clear the oil stains at P74.

Follow Up:
The oil stains were cleared properly.</td></tr>
</table>

Ref No: 150707-R04

Impact:
Water Quality (B21)

Details:
Muddy sediment was observed discharged into the sea at P75. The Contractor was reminded to dispose it properly.

Follow Up:
No further sediment discharging into the sea was observed and the frontline staff was reminded to store the excavated sediment into the waste skip on the platform before proper disposal.

Contract HY/2011/09

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

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	150721
Date	21 July 2015 (Tuesday)
Time	9:30 - 11:50

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
150721-R01	• Provision of sedimentation facilities according to effluent discharge license at P81 and P82.	B3i.
150721-R02	• Provide mitigation measures to avoid muddy water directly discharge to the gullies at between P82 and P83.	B4
	B. Ecology	
150721-R04	• To remove the construction wastes at near the trees at P90.	C31
	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	
150721-R03	• Clear the accumulated construction wastes at P84 and P85.	F4ii.
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150714), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

	Name	Signature	Date
Recorded by	Ivy Tam		21 July 2015
Checked by	Dr. Priscilla Choy		21 July 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 (21 July 2015)

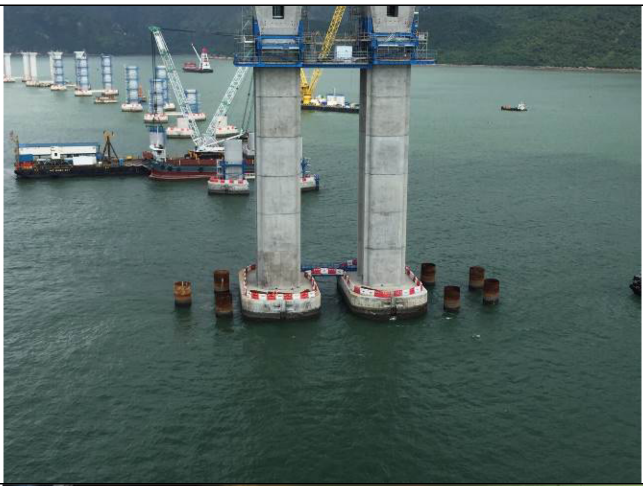
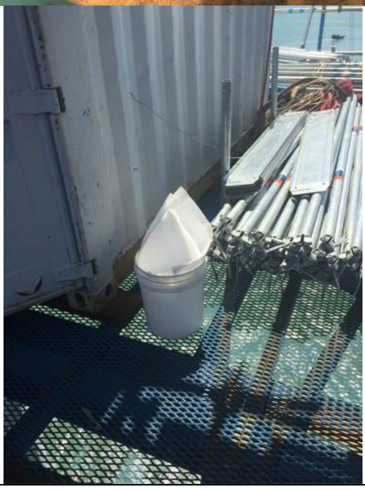
	**Ref No:** 150721-R01 **Impact:** Water Quality (B3i.) **Details:** Provision of sedimentation facilities according to effluent discharge license at P81 and P82.
	**Ref No:** 150721-R02 **Impact:** Water Quality (B4) **Details:** Provide mitigation measures to avoid muddy water directly discharge to the gullies at between P82 and P83.

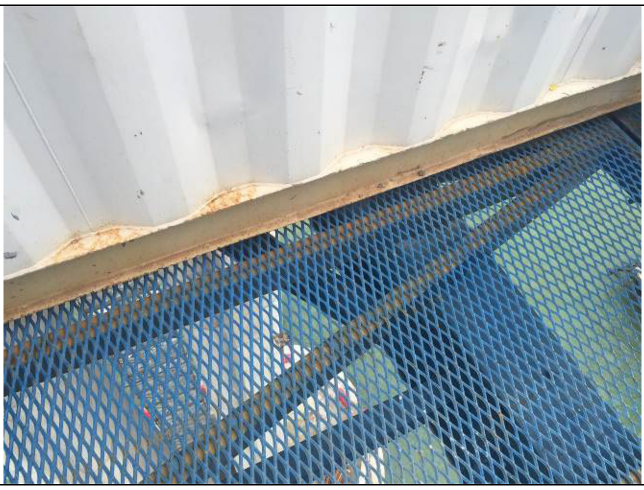
 	**Ref No:** 150721-R03 **Impact:** Waste / Chemical Management (F4ii.) **Details:** Clear the accumulated construction wastes at P84 and P85.
	**Ref No:** 150721-R04 **Impact:** Ecology (C31) **Details:** To remove the construction wastes at near the trees at P90.

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:** 150714-R01 **Impact:** Water Quality (B20) **Details:** Clear the waste materials at the platform at P20 to avoid falling into the sea. **Follow Up:** The platform at P20 has been removed.
 	**Ref No:** 150714-R02 **Impact:** Waste / Chemical Management (F8) **Details:** Provide tarpaulin sheet at underneath of pressure relief joint to avoid oil spillage at P20. **Follow Up:** No further oil leakage was observed. In addition, spill kit was provided on site.

	**Ref No:** 150714-R03 **Impact:** Waste / Chemical Management (F9) **Details:** Provide drip tray for the generator at P20. **Follow Up:** The generator was removed.
	**Ref No:** 150714-R04 **Impact:** Waste / Chemical Management (F1iii.) **Details:** Clear the rubbish at near container office (P113). **Follow Up:** The rubbish was cleared.
	**Ref No:** 150714-R05 **Impact:** Water Quality (B16) **Details:** Provide mitigation measures to avoid the leakage of water from site to the public road (near P111). **Follow Up:** No further leakage of water from site to the public road was observed.

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	150728
Date	28 July 2015 (Tuesday)
Time	9:30 - 11:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	**Remarks/Observations**	**Related Item No.**
	A. Water Quality	
150718-R01	• Provide mitigation measures to avoid the fine materials falling into the sea through the gap at the platform at P7.	B22
150728-R04	• Clear the loose material at the platform at P78.	B20
150728-R05	• Properly repair the damaged part of silt curtain at P78.	B25
	B. Ecology	
	• No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	• No environmental deficiency was identified during site inspection.	
	D. Noise	
150728-R02	• Provide noise emission label for the air compressor at P7.	E8
150728-R03	• Provide acoustic decoupling measures for the generator on barge at P7.	E7
150728-R06	• Ensure the noise enclosure is fully enclosed the equipment at P78.	E7
	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. 150721), follow up action is required for the item(s) 150721-R01.	

	Name	Signature	Date
Recorded by	Ivy Tam	Ivy	28 July 2015
Checked by	Dr. Priscilla Choy	[signature]	28 July 2015

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

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

<u>Environmental Observations Identified during the Environmental Site Inspection</u>

<u>(28 July 2015)</u>

Ref No: 150728-R01

Impact:
Water Quality (B22)

Details:
Provide mitigation measures to avoid the fine materials falling into the sea through the gap at the platform at P7.

Ref No: 150728-R02

Impact:
Noise (E8)

Details:
Provide noise emission label for the air compressor at P7.

Ref No: 150728-R03

Impact:
Noise (E7)

Details:
Provide acoustic decoupling measures for the generator on barge at P7.

	**Ref No:** 150728-R04 **Impact:** Water Quality (B20) **Details:** Clear the loose material at the platform at P78.
	**Ref No:** 150728-R05 **Impact:** Water Quality (B25) **Details:** Properly repair the damaged part of silt curtain at P78.
	**Ref No:** 150728-R06 **Impact:** Noise (E7) **Details:** Ensure the noise enclosure is fully enclosed the equipment at P78.

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

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

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

<table>
<tr><td></td><td>Ref No: 150721-R02

Impact:
Water Quality (B4)

Details:
Provide mitigation measures to avoid muddy water directly discharge to the gullies at between P82 and P83.

Follow Up:
The gullies were protected by sand bag bund.</td></tr>
<tr><td>
</td><td>Ref No: 150721-R03

Impact:
Waste / Chemical Management (F4ii.)

Details:
Clear the accumulated construction wastes at P84 and P85.

Follow Up:
The accumulated construction wastes were cleared.</td></tr>
</table>

Ref No: 150721-R04

Impact:
Ecology (C31)

Details:
To remove the construction wastes at near the trees at P90.

Follow Up:
The construction wastes at near the trees were cleared by the worker.

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:	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	
		• 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;					^
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;	practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.		sites	stage	
		• 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;					N/A
		• 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;					*

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	<u>*Sewage*</u> • Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.	Proper handling of sewage from worker to avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	^
S8.3.17	WM5	<u>*General Refuse*</u> • 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;					N/A
		• use of Lean Material Overboard (LMOB) systems shall be prohibited;					N/A
		• 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;					^

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	*Land Works* 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;					N/A
		• 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.					^
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. • G3. For HKLR, providing aesthetic design on the viaduct, tunnel portals, at-grade roads (e.g. subtle colour tone and slim form for viaduct, featured form of tunnel portals, roadside planting along at-grade roads and landscape berm on) to beautify the HKLR alignment. • G5. Vegetation reinstatement and upgrading to disturbed areas. • G6. Maximize new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed. • G7. Provide planting area around peripheral of and within HKLR for tree screening buffer effect. • G8. Plant salt tolerant native tree and shrubs etc along the planter strip at affected seawall. • G9. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt “natural-look” by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance “natural-look” of the new coastline (see Figure 14.4.2 for example).					N/A N/A N/A N/A N/A N/A N/A
S14.3.3.3	LV3	Mitigate Visual Impacts • 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	0.406	0.000	0.000	0.000	0.406	0.000	0.049	0.909	0.000	0.000	0.202
May	0.176	0.000	0.000	0.000	0.176	0.000	0.005	1.096	0.000	0.000	0.267
Jun	0.287	0.000	0.000	0.000	0.287	0.000	0.095	1.146	0.000	0.000	0.234
Sub-Total	9.472	0.000	0.000	0.000	9.472	0.000	0.314	4.915	0.000	0.793	1.807
Jul	0.293	0.000	0.000	0.000	0.293	0.000	0.071	1.064	0.000	2.378	0.280
Aug											
Sep											
Oct											
Nov											
Dec											
Total	9.766	0.000	0.000	0.000	9.766	0.000	0.385	5.979	0.000	3.171	2.087

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	4.000	25.000	0.000	10.000	8.000

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

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

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				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.	
Com-2015-06-001	The sea side at WA6 vertical seawall	6 June 2015	A resident living in Le Bleu Duex complained about noise from a barge which unloading materials at about 21:00 hrs last Saturday i.e. 6 June 2015	Based on the information collected, the noise generated is considered due to the unloading of steel casings to the seashore area opposite to the China State Site Office. The person-in-charge of the barge has been reprimanded by the Contractor for causing noise nuisance to resident nearby. In addition, the Contractor had also reminded their subcontractors to avoid unloading of materials during restricted hours (i.e. 19:00 to 07:00 hours on any day and any time on public holidays including Sundays) without Construction Noise Permit (CNP). The Contractor was reminded to obtain Construction Noise Permit (CNP) for PME use in restricted hours. The Contractor was reminded again 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	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
				mats on ground for loading and unloading heavy or metal objects; and • To deploy professional personnel to supervise the works.	

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.