AECOM

China Harbour Engineering Company Limited

Contract No. HY/2010/02

Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Works

Monthly EM&A Report for December 2013

[01/2014]

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Ref.: HYDHZMBEEM00_0_1620L.14 15 January 2014

Engineer's Representative By Fax (3698 5999) and By Post
Ove Arup & Partners
Chief Resident Engineer's Office
5 Ying Hei Road, Tung Chung, Lantau
Hong Kong

Attention: Mr. Roger Marechal

Dear Mr. Marechal,

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/2010/02
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities – Reclamation Work
Monthly Environmental Monitoring & Audit Report for December 2013

Reference is made to the Environmental Team's submission of the Monthly Environmental Monitoring & Audit Report for December 2013 (letter ref. 60249820/C/RMKY14011501 dated 15 January 2014) copied to us by E-mail on 15 January 2014.

We are pleased to inform you that we have no adverse comment on the captioned Monthly EM&A Report. We write to verify the captioned report in accordance with Condition 5.4 of EP-353/2009/G and Condition 4.4 of EP-354/2009/A (for TM-CLKL Southern Landfall Reclamation only).

ET is again reminded to review and improve their communication with the dolphin specialist to avoid delay in reporting information to meet EM&A requirements.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

Raymond Dai
Independent Environmental Checker

c.c.	HyD	Mr. Matthew Fung	(By Fax: 3188 6614)
	HyD	Mr. Wai-ping Lee	(By Fax: 3188 6614)
	AECOM	Ms. Echo Leong	(By Fax: 2317 7609)
	CHEC	Mr. Lim Kim Chuan	(By Fax: 2578 0413)

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EXECUTIVE SUMMARY

Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Work (here below, known as "the Project") mainly comprises reclamation at the northeast of the Hong Kong International Airport of an area of about 130-hectare for the construction of an artificial island for the development of the Hong Kong Boundary Crossing Facilities (HKBCF), and about 19-hectare for the southern landfall of the Tuen Mun - Chek Lap Kok Link (TMCLKL). It is a designated project and is governed by the current permits for the Project, i.e. the amended Environmental Permits (EPs) issued on 06 August 2013 (EP-353/2009/G) and 8 December 2011 (EP-354/2009/A) (for TMCLKL Southern Landfall Reclamation only).

Ove Arup & Partners Hong Kong Limited (Arup) was appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Project's reclamation works (i.e. the Engineer for the Project).

China Harbour Engineering Company Limited (CHEC) was awarded by HyD as the Contractor to undertake the construction work of the Project.

ENVIRON Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project.

AECOM Asia Co. Ltd. (AECOM) was appointed by CHEC to undertake the role of Environmental Team for the Project for carrying out the environmental monitoring and audit (EM&A) works.

The construction phase of the Project under the EPs was commenced on 12 March 2012 and will be tentatively completed by early Year 2016. The EM&A programme, including air quality, noise, water quality and dolphin monitoring and environmental site inspections, was commenced on 12 March 2012.

This report documents the findings of EM&A works conducted in the period between 1 and 31 December 2013. As informed by the Contractor, major activities in the reporting period were:-

Marine-based Works

- Cellular structure installation
- Connecting arc cell installation
- Laying geo-textile
- Sand blanket laying
- Sand filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Stone column installation
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Rubble mound seawall construction
- Construction of temporary seawall
- Ground investigation

Land-based Works

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Geo-textile fabrication at Works Area WA2
- Installed sand bag at Works Area WA2
- Silt curtain fabrication at Works Area WA4
- Maintenance of Temporary Marine Access at Works Area WA2

A summary of monitoring and audit activities conducted in the reporting period is listed below:

24-hour Total Suspended Particulates (TSP) monitoring	5 sessions
1-hour TSP monitoring	5 sessions
Noise monitoring	4 sessions
Impact water quality monitoring	13 sessions
Impact dolphin monitoring	2 surveys
Joint Environmental site inspection	4 sessions

Breaches of Action and Limit Levels for Air Quality

All 1-Hour TSP results were below the Action and Limit Level in the reporting month. Two (2) 24-hour TSP results recorded at AMS3A and AMS7 exceeded the Action Level in the reporting month. Investigation results showed that the Two (2) 24-hour TSP action level exceedances recorded at AMS3A and AMS7 were not related to project.

Breaches of Action and Limit Levels for Noise

For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.

Breaches of Action and Limit Levels for Water Quality

Three (3) Action Level Exceedances and two (2) Limit Level Exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting month. Investigation results shows that Action Level Exceedance recorded at SR10A on 6 Dec 13, IS(Mf)9 on 18 Dec 13 and Limit Level Exceedance recorded at IS8 on 20 Dec 13 were not related to project. Investigation results shows that the Action Level Exceedance recorded at SR5 and Limit Level Exceedance recorded at IS10 on 18 Dec 13 were related to project.

Impact Dolphin Monitoring

A total of fourteen dolphin sightings were recorded during the two surveys, five on 19 December 2013; six on 26 December 2013 and three sightings were made on 28 December 2013. No sightings were recorded on the 21 December 2013. Of the fourteen sightings, ten were “on effort” (which are all under favourable condition) and four were “opportunistic”. A total of sixty one individuals were sighted from the two impact dolphin surveys in the reporting period. Sighting details are summarised and plotted in Appendix K and Figure 5c, respectively.

Behaviour: Of the fourteen sightings made, three sightings were recorded as ‘multiple’ behavior (all as travelling and feeding); four sightings were recorded as feeding; four was recorded as travelling and one sighting was recorded as “unknown” and; two sightings were recorded as “milling”. The locations of sighting with different behaviour are mapped in Figure 5d.

Complaint, Notification of Summons and Successful Prosecution

As informed by the Contractor on 5 Dec13, one complaint was noted on 12 Nov regarding a barge moving through the southern channel. After investigation, the noise complaint was considered as non-project related

As informed by the Contractor, complaint received from Penta-Ocean – Gitanes Joint Venture (CV/2012/03) mentioned that the formation works of the Contaminated Mud Pit CMP1 to the South of the Brothers (CMP1 of SB) which has been completed in mid-August 2013 and the pit has been commissioned for receiving contaminated marine mud from other projects starting from 16 August 2013. However, it was recently observed that some of the project vessels of HY/2010/02 (photos taken on 20 Nov 2013 are attached) had berthed within the said pit and those anchorages would likely cause disruption to the underlying contaminated mud and thus induce unfavourable contamination impact to the surrounding marine environment. In this regard, they reminded the contractor to avoid berthing of their vessels within the boundary of CMP1 of SB thereafter for the sake of environmental concern. After investigation, the complaint was considered as non-project related

As informed by the Contractor on 12 Dec 13. A complaint involves the leakage of sand from barges causing water discoloration at sea near Tuen Mun Pierhead Garden and sand material without properly covered was blown to the inside of the residential area which caused disturbance to residence. With refer to available information provided and monitoring data recorded on 09 Dec 13, it cannot indicate that the water quality impact and air quality impact were caused by the vessel of this Contract and therefore the complaint could not be concluded as related to this Contract.

As informed by the Contractor on 27 Dec 13. A complaint involves barges loaded with sand material without properly covered was blown to the inside of the residential area of Tuen Mun Pierhead Garden which caused disturbance to residence. With refer to available information provided, it cannot indicate that the water quality impact and air quality impact were caused by the vessel of this Contract and therefore the complaint could not be concluded as related to this Contract.

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

Reporting Change

There was no reporting change required in the reporting period.

Future Key Issues

Key issues to be considered in the coming month included:-

- Site runoff should be properly collected and treated prior to discharge;
- Minimize loss of sediment from filling works;
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities;
- Exposed surfaces/soil stockpiles should be properly treated to avoid generation of silty surface run-off during rainstorm;
- Regular review and maintenance of wheel washing facilities provided at all site entrances/exits;
- Conduct regular inspection of various working machineries and vessels within works areas to avoid any dark smoke emission;
- Suppress dust generated from work processes with use of bagged cements, earth movements, excavation activities, exposed surfaces/soil stockpiles and haul road traffic;
- Quieter powered mechanical equipment should be used;
- Provision of proper and effective noise control measures for operating equipment and machinery on-site, such as erection of movable noise barriers or enclosure for noisy plants;
- Closely check and replace the sound insulation materials regularly;
- Better scheduling of construction works to minimize noise nuisance;
- Properly store and label oil drums and chemical containers placed on site;
- Proper chemicals, chemical wastes and wastes management;
- Maintenance works should be carried out within roofed, paved and confined areas;
- Collection and segregation of construction waste and general refuse on land and in the sea should be carried out properly and regularly; and
- Proper protection and regular inspection of existing trees, transplanted/retained trees.

1 INTRODUCTION

1.1 Background

1.1.1 Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Work (here below, known as "the Project") mainly comprises reclamation at the northeast of the Hong Kong International Airport of an area of about 130-hectare for the construction of an artificial island for the development of the Hong Kong Boundary Crossing Facilities (HKBCF), and about 19-hectare for the southern landfall of the Tuen Mun - Chek Lap Kok Link (TMCLKL).

1.1.2 The environmental impact assessment (EIA) reports (Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities – EIA Report (Register No. AEIAR-145/2009) (HKBCFEIA) and Tuen Mun – Chek Lap Kok Link – EIA Report (Register No. AEIAR-146/2009) (TMCLKLEIA), and their environmental monitoring and audit (EM&A) Manuals (original EM&A Manuals), for the Project were approved by Environmental Protection Department (EPD) in October 2009.

1.1.3 EPD subsequently issued the Environmental Permit (EP) for HKBCF in November 2009 (EP-353/2009) and the Variation of Environmental Permit (VEP) in June 2010 (EP-353/2009/A), November 2010 (EP-353/2009/B), November 2011 (EP-353/2009/C), March 2012 (EP-353/2009/D), October 2012 (EP-353/2009/E), April 2013 (EP-353/2009/F) and August 2013 (EP-353/2009/G). Similarly, EPD issued the Environmental Permit (EP) for TMCLKL in November 2009 (EP-354/2009) and the Variation of Environmental Permit (VEP) in December 2010 (EP-354/2009/A).

1.1.4 The Project is a designated project and is governed by the current permits for the Project, i.e. the amended EPs issued on 6 August 2013 (EP-353/2009/G) and 8 December 2011 (EP-354/2009/A) (for TMCLKL Southern Landfall Reclamation only).

1.1.5 A Project Specific EM&A Manual, which included all project-relation contents from the original EM&A Manuals for the Project, was issued in May 2012.

1.1.6 Ove Arup & Partners Hong Kong Limited (Arup) was appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Project's reclamation works (i.e. the Engineer for the Project).

1.1.7 China Harbour Engineering Company Limited (CHEC) was awarded by HyD as the Contractor to undertake the construction work of the Project.

1.1.8 ENVIRON Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project.

1.1.9 AECOM Asia Co. Ltd. (AECOM) was appointed by CHEC to undertake the role of Environmental Team for the Project for carrying out the EM&A works.

1.1.10 The construction phase of the Project under the EPs was commenced on 12 March 2012 and will be tentatively completed by early Year 2016.

1.1.11 According to the Project Specific EM&A Manual, there is a need of an EM&A programme including air quality, noise, water quality and dolphin monitoring and environmental site inspections. The EM&A programme of the Project commenced on 12 March 2012.

1.2 Scope of Report

1.2.1 This is the twenty-second monthly EM&A Report under the Contract No.HY/2010/02 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Works. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for the Project in December 2013.

1.3 Project Organization

1.3.1 The project organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Engineer's Representative (ER) (Ove Arup & Partners Hong Kong Limited)	Chief Resident Engineer	Roger Marechal	3698 5700	2698 5999
IEC / **ENPO** (ENVIRON Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3465 2868	3465 2899
	Environmental Project Office Leader	Y. H. Hui	3465 2868	3465 2899
Contractor (China Harbour Engineering Company Limited)	Environmental Officer	Richard Ng	36932253	2578 0413
	24-hour Hotline	Alan C.C. Yeung	9448 0325	--
ET (AECOM Asia Company Limited)	ET Leader	Echo Leong	3922 9280	2317 7609

1.4 Summary of Construction Works

1.4.1 The construction phase of the Project under the EP commenced on 12 March 2012.

1.4.2 As informed by the Contractor, details of the major works carried out in this reporting period are listed below:-

Marine-based Works
- Cellular structure installation
- Connecting arc cell installation
- Laying geo-textile
- Sand blanket laying
- Sand filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Stone column installation
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Rubble mound seawall construction
- Construction of temporary seawall
- Ground investigation

Land-based Works
- Maintenance works of Site Office at Works Area WA2

- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Geo-textile fabrication at Works Area WA2
- Installed sand bag at Works Area WA2
- Silt curtain fabrication at Works Area WA4
- Maintenance of Temporary Marine Access at Works Area WA2

1.4.3 The 3-month rolling construction programme of the Project is shown in Appendix B.

1.4.4 The general layout plan of the Project site showing the detailed works areas is shown in Figure 1.

1.4.5 The environmental mitigation measures implementation schedule are presented in Appendix C.

1.5 Summary of EM&A Programme Requirements

1.5.1 The EM&A programme required environmental monitoring for air quality, noise, water quality, marine ecology and environmental site inspections for air quality, noise, water quality, waste management, marine ecology, and landscape and visual impact. The EM&A requirements for each parameter described in the following sections include:-

- All monitoring parameters;
- Monitoring schedules for the reporting month and forthcoming month;
- Action and Limit levels for all environmental parameters;
- Event / Action Plan;
- Environmental mitigation measures, as recommended in the Project EIA reports; and
- Environmental requirement in contract documents.

2 AIR QUALITY MONITORING

2.1 Monitoring Requirements

2.1.1 In accordance with the Project Specific EM&A Manual, baseline 1-hour and 24-hour Total Suspended Particulates (TSP) levels at 4 air quality monitoring stations were established. Impact 1-hour TSP monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was carried out for at least once every 6 days. The Action and Limit level of the air quality monitoring is provided in Appendix D.

2.2 Monitoring Equipment

2.2.1 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at each designated monitoring station. The HVS meets all the requirements of the Project Specific EM&A Manual. Portable direct reading dust meters were used to carry out the 1-hour TSP monitoring. Brand and model of the equipment is given in Table 2.1.

Table 2.1 Air Quality Monitoring Equipment

Equipment	Brand and Model
Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3 and LD-3B)
High Volume Sampler (24-hour TSP)	Tisch Environmental Mass Flow Controlled Total Suspended Particulate (TSP) High Volume Air Sampler (Model No. TE-5170)

2.3 Monitoring Locations

2.3.1 Monitoring locations AMS2 and AMS7 were set up at the proposed locations in accordance with Project Specific EM&A Manual. For AMS6 (Dragonair/CNAC (Group) Building), permission on setting up and carrying out impact monitoring works was sought, however, access to the premise has not been granted yet on this report issuing date. For monitoring location AMS3 (Ho Yu College), as proposed in the Project Specific EM&A Manual, approval for carrying out impact monitoring could not be obtained from the principal of the school. Permission on setting up and carrying out impact monitoring works at nearby sensitive receivers, like Caribbean Coast and Coastal Skyline, was also sought. However, approvals for carrying out impact monitoring works within their premises were not obtained. Impact air quality monitoring was conducted at site boundary of the site office area in Works Area WA2 (AMS3A) respectively. Same baseline and Action Level for air quality, as derived from the baseline monitoring data recorded at Ho Yu College, was adopted for this alternative air quality location.

2.3.2 Reference is made to ET's proposal of the omission of air monitoring station (AMS 6) dated on 1 November 2012 and EPD's letter dated on 19 November 2012 regarding the conditional approval of the proposed omission of air monitoring station (AMS 6) for Contract No. HY/2010/02. The aforesaid omission of Monitoring Station AMS6 is effective since 19 November 2012.

2.3.3 Figure 2 shows the locations of monitoring stations. Table 2.2 describes the details of the monitoring stations.

Table 2.2 Locations of Impact Air Quality Monitoring Stations

Monitoring Station	Location	Description
AMS2	Tung Chung Development Pier	Rooftop of the premise
AMS3A	Site Boundary of Site Office Area at Works Area WA2	On ground at the area boundary
AMS6*	Dragonair/CNAC (Group) Building	On ground at boundary of the premise
AMS7	Hong Kong SkyCity Marriott Hotel	On ground at boundary of the premise

#Remarks: Reference is made to EPD conditional approval of the omission of air monitoring station (AMS 6) for the project. The omission will be effective on 19 November 2012.

2.4 Monitoring Parameters, Frequency and Duration

2.4.1 Table 2.3 summarizes the monitoring parameters, frequency and duration of impact TSP monitoring.

Table 2.3 Air Quality Monitoring Parameters, Frequency and Duration

Parameter	Frequency and Duration
1-hour TSP	Three times every 6 days while the highest dust impact was expected
24-hour TSP	Once every 6 days

2.5 Monitoring Methodology

2.5.1 24-hour TSP Monitoring

(a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.

(i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
(ii) No two samplers should be placed less than 2 meters apart.
(iii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
(iv) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
(v) A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
(vi) No furnace or incinerator flues nearby.
(vii) Airflow around the sampler was unrestricted.
(viii) Permission was obtained to set up the samplers and access to the monitoring stations.
(ix) A secured supply of electricity was obtained to operate the samplers.
(x) The sampler was located more than 20 meters from any dripline.
(xi) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
(xii) Flow control accuracy was kept within ±2.5% deviation over 24-hour sampling period.

(b) Preparation of Filter Papers

(i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
(ii) All filters 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%.

(iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

(c) Field Monitoring

(i) The power supply was checked to ensure the HVS works properly.
(ii) The filter holder and the area surrounding the filter were cleaned.
(iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
(iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
(v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
(vi) Then the shelter lid was closed and was secured with the aluminum strip.
(vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
(viii) A new flow rate record sheet was set into the flow recorder.
(ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.1 m^3/min, and complied with the range specified in the updated EM&A Manual (i.e. 0.6-1.7 m^3/min).
(x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
(xi) The initial elapsed time was recorded.
(xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
(xiii) The final elapsed time was recorded.
(xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
(xv) It was then placed in a clean plastic envelope and sealed.
(xvi) All monitoring information was recorded on a standard data sheet.
(xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

(d) Maintenance and Calibration

(i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
(ii) 5-point calibration of the HVS was conducted using TE-5025A Calibration Kit prior to the commencement of baseline monitoring. Bi-monthly 5-point calibration of the HVS will be carried out during impact monitoring.
(iii) Calibration certificate of the HVSs are provided in Appendix E.

2.5.2 1-hour TSP Monitoring

(a) Measuring Procedures

The measuring procedures of the 1-hour dust meter were in accordance with the Manufacturer's Instruction Manual as follows:-

(i) Turn the power on.
(ii) Close the air collecting opening cover.
(iii) Push the "TIME SETTING" switch to [BG].
(iv) Push "START/STOP" switch to perform background measurement for 6 seconds.
(v) Turn the knob at SENSI ADJ position to insert the light scattering plate.
(vi) Leave the equipment for 1 minute upon "SPAN CHECK" is indicated in the display.
(vii) Push "START/STOP" switch to perform automatic sensitivity adjustment. This measurement takes 1 minute.
(viii) Pull out the knob and return it to MEASURE position.
(ix) Push the "TIME SETTING" switch the time set in the display to 3 hours.
(x) Lower down the air collection opening cover.
(xi) Push "START/STOP" switch to start measurement.

(b) Maintenance and Calibration

(i) The 1-hour TSP meter was calibrated at 1-year intervals against a continuous particulate TEOM Monitor, Series 1400ab. Calibration certificates of the Laser Dust Monitors are provided in Appendix E.

(ii) 1-hour validation checking of the TSP meter against HVS is carried out on half-year basis at the air quality monitoring locations.

2.6 Monitoring Schedule for the Reporting Month

2.6.1 The schedule for air quality monitoring in December 2013 is provided in Appendix F.

2.7 Results and Observations

2.7.1 The monitoring results for 1-hour TSP and 24-hour TSP are summarized in Table 2.4 and 2.5 respectively. Detailed impact air quality monitoring results are presented in Appendix G.

Table 2.4 Summary of 1-hour TSP Monitoring Results in the Reporting Period

	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AMS2	82	71 – 91	374	500
AMS3A	83	73 – 92	368	500
AMS7	81	71 – 89	370	500

Table 2.5 Summary of 24-hour TSP Monitoring Results in the Reporting Period

	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AMS2	91	24 – 115	176	260
AMS3A	140	89 – 212	167	260
AMS7	114	19 – 186	183	260

2.7.2 The major dust source in the reporting period included construction activities from the Project, construction activities by other contacts, as well as nearby traffic emissions.

2.7.3 All 1-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting month. Two (2) 24-hour TSP results recorded at AMS3A and AMS7 exceeded the Action Level. No results of 24-hour TSP exceed the Limit Level in the reporting month.

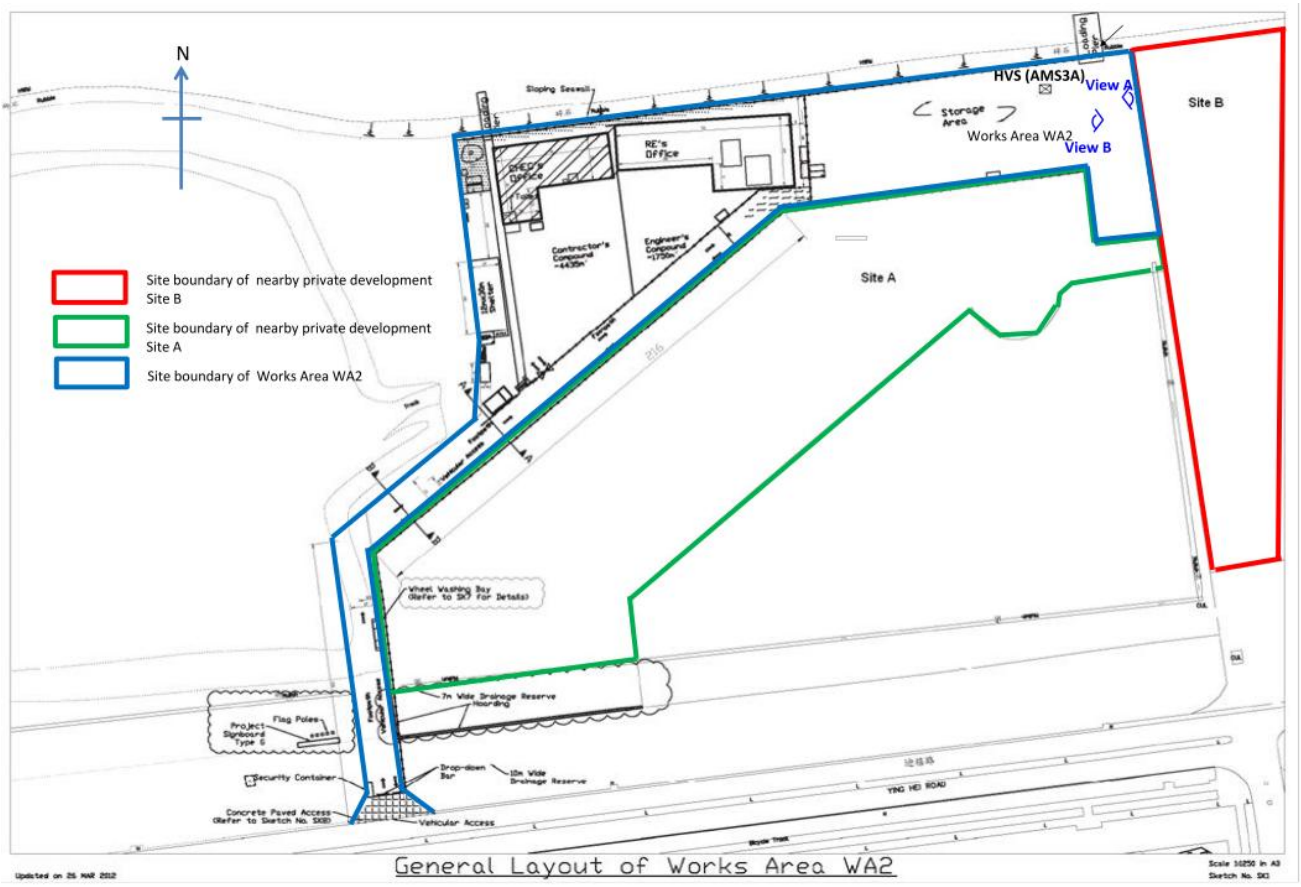
2.7.4 For the 24Hr TSP Action Level exceedance recorded at AMS3A, a result of 212μg/m^3 was recorded on 11 Dec 13 (24-hr TSP).

2.7.4.1 According to information provided by the Contractor, land-based construction activity such as installation of sand bags, delivery of band drain material and stitching of Type 2 geotextile were being undertaken at Works Area WA2 during the monitoring period.

2.7.4.2 Functional checking on HVS at AMS3A was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS3A. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.

2.7.4.3 Photo records shows vehicle parking activities were observed inside an area at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA2. (Please also see photo and layout map attached for reference of site conditions (View A.))

2.7.4.4 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 10 and 11 Dec 13 (as attached) east winds was prevailing during the monitoring period. Traffic activities at construction sites of nearby private development project which are close to the monitoring station AMS3A but beyond the site boundary of Works Area WA 2 may contribute to the measured dust levels at the monitoring station AMS3A.



General Layout of Works Area WA2

Conditions of the construction sites near Works Area WA2:

View A: (Parking lot observed at nearby construction site which do not belongs to this Contract):

View B (Hard paved surface observed at Works Area WA2)

2.7.4.5 The 1-hr TSP values recorded at AMS3A on 11 Dec 13, which are within the monitoring period of the 24-hr TSP, were 84μg/m3, 88μg/m3 and 86μg/m3 respectively. All measured values are well below the Action and Limit Levels.

2.7.4.6 The measured 24-hr TSP values recorded at AMS2 and AMS7 (which are closer to the marine-based works areas) on the same monitoring date were 155μg/m3 and 165μg/m3 respectively, which are below the Action and Limit Levels.

2.7.4.7 The following dust mitigation measures have been implemented at Works Area WA2:

1. Works Area WA2's surface was hard-paved, compacted or hydro-seeded (Please refer to attached layout map and photo record (View B))
2. Vehicle washing facility was provided at vehicle exit points,
3. Measures for preventing fugitive dust emission are provided, e.g. canvas/tarpaulin covers.

2.7.4.8 The dust exceedance was therefore considered not to be due to the Project works.

2.7.4.9 The Contractor was recommended to continue implementing existing dust mitigation measures.

2.7.5 For the 24Hr TSP Action Level exceedance recorded at AMS7, a result of 186μg/m^3 was recorded on 27 Dec 13 (24-hr TSP).

2.7.5.1 According to information provided by the Contractor during the monitoring period. Marine-based construction activity such as band drain, stone column installation and cellular structure installation was being undertaken at C2a, portion D and portion A.

2.7.5.2 Stone column was being installed at the seabed therefore it is considered that stone column installation at Portion D and Portion A is unlikely to contribute to the recorded 24hr-TSP exceedance.

2.7.5.3 Both band drain or cellular structure installation conducted at C2a, portion D and portion A are unlikely to contribute to the recorded 24hr-TSP exceedance due to no significant fugitive dust was expected to be generated in the process.

2.7.5.4 Excavators and generators were operated by ultra low sulphur diesel (ULSD) to minimize the possibility of air pollution have been implemented at throughout the construction site.

2.7.5.5 Photo record below shows that the Contractor implemented dust control measures on works area of Portion A:

2.7.5.6 Functional checking on HVS at AMS7 was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS7. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.

2.7.5.7 The 1-hr TSP values recorded at AMS7 on 27 Dec 13, which are within the monitoring days of the 24-hr TSP, were 89μg/m^3, 89μg/m^3 and 88μg/m^3 respectively. All measured values are well below the Action and Limit Levels.

2.7.5.8 The measured 24-hr TSP values recorded at AMS2 and AMS3A on the same monitoring date were 93 μg/m^3 and 160 μg/m^3 respectively, which are below the Action and Limit Levels.

2.7.5.9 On the other hand, according to observation made at the monitoring station AMS7, there was no non-project potential cause/activity at the surrounding of monitoring station AMS7 which might potentially contribute to the dust action level exceedance.

2.7.5.10 As refer to the wind data collected at wind station at Works Area WA2 during the monitoring period on 27 and 28 Dec 13 (as attached) southwest winds was prevailing during the monitoring period. Construction works carried out by this Contract is unlikely to cause dust exceedance at AMS7 under South-southwest prevailing wind direction.

2.7.5.11 The dust exceedance was therefore considered not to be due to the Project works.

2.7.5.12 The Contractor was recommended to continue implementing existing dust mitigation measures and the Contractor was reminded ensure to undertake watering at least 8 times per day on all exposed soil within the Project site and associated work areas throughout the construction phase.

2.7.6 The event action plan is annexed in Appendix L.

2.7.7 Meteorological information collected from the wind station during the monitoring periods on the monitoring dates, as shown in Figure 2, including wind speed and wind direction, is annexed in Appendix H.

3 NOISE MONITORING

3.1 Monitoring Requirements

3.1.1 In accordance with the Project Specific EM&A Manual, impact noise monitoring was conducted for at least once per week during the construction phase of the Project. The Action and Limit level of the noise monitoring is provided in Appendix D.

3.2 Monitoring Equipment

3.2.1 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in Table 3.1.

Table 3.1 Noise Monitoring Equipment

Equipment	Brand and Model
Integrated Sound Level Meter	Rion NL-31 & B&K2238
Acoustic Calibrator	Rion NC-73

3.3 Monitoring Locations

3.3.1 Monitoring locations NMS2 was set up at the proposed locations in accordance with Project Specific EM&A Manual. However, for monitoring location NMS3 (Ho Yu College), as proposed in the Project Specific EM&A Manual, approval for carrying out impact monitoring could not be obtained from the principal of the school. Permission on setting up and carrying out impact monitoring works at nearby sensitive receivers, like Caribbean Coast and Coastal Skyline, was also sought. However, approvals for carrying out impact monitoring works within their premises were not obtained. Impact noise monitoring was conducted at site boundary of the site office area in Works Area WA2 (NMS3A) respectively. Same baseline noise level (as derived from the baseline monitoring data recorded at Ho Yu College) and Limit Level were adopted for this alternative noise monitoring location.

3.3.2 Figure 2 shows the locations of the monitoring stations. Table 3.2 describes the details of the monitoring stations.

Table 3.2 Locations of Impact Noise Monitoring Stations

Monitoring Station	Location	Description
NMS2	Seaview Crescent Tower 1	Free-field on the rooftop of the premise
NMS3A	Site Boundary of Site Office Area at Works Area WA2	Free-field on ground at the area boundary.

3.4 Monitoring Parameters, Frequency and Duration

3.4.1 Table 3.3 summarizes the monitoring parameters, frequency and duration of impact noise monitoring.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Parameter	Frequency and Duration
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays (Monday to Saturday). L_{eq}, L_{10} and L_{90} would be recorded.	At least once per week

3.5 Monitoring Methodology

3.5.1 Monitoring Procedure

(a) The sound level meter was set on a tripod at a height of 1.2 m above the ground for free-field measurements at NMS2. A correction of +3 dB(A) shall be made to the free field measurements.

(b) All measurement at NMS3A were free field measurements in the reporting month at NMS3A. A correction of +3 dB(A) shall be made to the free field measurements.

(c) The battery condition was checked to ensure the correct functioning of the meter.

(d) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:-

(i) frequency weighting: A
(ii) time weighting: Fast
(iii) time measurement: $L_{eq(30\text{-}minutes)}$ during non-restricted hours i.e. 07:00 – 1900 on normal weekdays.

(e) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

(f) During the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.

(g) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.

(h) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

3.5.2 Maintenance and Calibration

(a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.

(b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.

(c) Calibration certificates of the sound level meters and acoustic calibrators are provided in Appendix E.

3.6 Monitoring Schedule for the Reporting Month

3.6.1 The schedule for construction noise monitoring in December 2013 is provided in Appendix F.

3.7 Monitoring Results

3.7.1 The monitoring results for construction noise are summarized in Table 3.4 and the monitoring data is provided in Appendix I.

Table 3.4 Summary of Construction Noise Monitoring Results in the Reporting Period

	Average, dB(A), $L_{eq\ (30\ mins)}$	Range, dB(A), $L_{eq\ (30\ mins)}$	Limit Level, dB(A), $L_{eq\ (30\ mins)}$
NMS2	67	64 – 68*	75
NMS3A	67	65 – 69*	70^

*+3dB(A) Façade correction included
^ Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

3.7.2 No Action or Limit Level Exceedance of construction noise was recorded in the reporting month.

3.7.3 Major noise sources during the noise monitoring included construction activities of the Project, construction activities by other contracts and nearby traffic noise.

3.7.4 The event action plan is annexed in Appendix L.

4 WATER QUALITY MONITORING

4.1 Monitoring Requirements

4.1.1 Impact water quality monitoring was carried out to ensure that any deterioration of water quality was detected, and that timely action was taken to rectify the situation. For impact water quality monitoring, measurements were taken in accordance with the Project Specific EM&A Manual. Appendix D shows the established Action/Limit Levels for the environmental monitoring works.

4.2 Monitoring Equipment

4.2.1 Table 4.1 summarises the equipment used in the impact water quality monitoring programme.

Table 4.1 Water Quality Monitoring Equipment

Equipment	Brand and Model
Dissolved Oxygen (DO) and Temperature Meter, Salinity Meter and Turbidimeter	YSI Model 6820
pH Meter	YSI Model 6820 or Thermo Orion 230A+
Positioning Equipment	JRC DGPS 224 Model JLR-4341 with J-NAV 500 Model NWZ4551
Water Depth Detector	Eagle Cuda-168
Water Sampler	Kahlsio Water Sampler (Vertical) 2.2 L with messenger

4.3 Monitoring Parameters, Frequency and Duration

4.3.1 Table 4.2 summarises the monitoring parameters, frequency and monitoring depths of impact water quality monitoring as required in the Project Specific EM&A Manual.

Table 4.2 Impact Water Quality Monitoring Parameters and Frequency

Monitoring Stations	Parameter, unit	Frequency	No. of depth
Impact Stations: IS5, IS(Mf)6, IS7, IS8, IS(Mf)9, IS10, IS(Mf)11, IS(Mf)16, IS17 *Control/Far Field Stations:* CS(Mf)3, CS(Mf)5, CS4, CS6, CSA *Sensitive Receiver Stations:* SR3-SR7, SR10A&SR10B	• Depth, m • Temperature, ^{o}C • Salinity, ppt • Dissolved Oxygen (DO), mg/L • DO Saturation, % • Turbidity, NTU • pH • Suspended Solids (SS), mg/L	Three times per week during mid-ebb and mid-flood tides (within ± 1.75 hour of the predicted time)	3 (1 m below water surface, mid-depth and 1 m above sea bed, except where the water depth is less than 6 m, in which case the mid-depth station may be omitted. Should the water depth be less than 3 m, only the mid-depth station will be monitored).

4.4 Monitoring Locations

4.4.1 In accordance with the Project Specific EM&A Manual, twenty-one stations (9 Impact Stations, 7 Sensitive Receiver Stations and 5 Control/Far Field Stations) were designated for impact water quality monitoring. The nine Impact Stations (IS) were chosen on the basis of their proximity to the reclamation and thus the greatest potential for water quality impacts, the seven Sensitive Receiver Stations (SR) were chosen as they are close to the key sensitive receives and the five Control/ Far Field Stations (CS) were chosen to facilitate comparison of the water quality of the IS stations with less influence by the Project/ ambient water quality conditions.

4.4.2 Due to safety concern and topographical condition of the original locations of SR4 and SR10B, alternative impact water quality monitoring stations, naming as SR4 (N) and SR10B (N), were adopted, which are situated in vicinity of the original impact water quality monitoring stations (SR4 and SR10B) and could be reachable.

4.4.3 Same baseline and Action Level for water quality, as derived from the baseline monitoring data recorded, were adopted for these alternative impact water quality monitoring stations.

4.4.4 The locations of these monitoring stations are summarized in Table 4.3 and depicted in Figure 3.

Table 4.3 Impact Water Quality Monitoring Stations

Station	Description	East	North
IS5	Impact Station (Close to HKBCF construction site)	811579	817106
IS(Mf)6	Impact Station (Close to HKBCF construction site)	812101	817873
IS7	Impact Station (Close to HKBCF construction site)	812244	818777
IS8	Impact Station (Close to HKBCF construction site)	814251	818412
IS(Mf)9	Impact Station (Close to HKBCF construction site)	813273	818850
IS10	Impact Station (Close to HKBCF construction site)	812577	820670
IS(Mf)11	Impact Station (Close to HKBCF construction site)	813562	820716
IS(Mf)16	Impact Station (Close to HKBCF construction site)	814328	819497
IS17	Impact Station (Close to HKBCF construction site)	814539	820391
SR3	Sensitive receivers (San Tau SSSI)	810525	816456
SR4(N)	Sensitive receivers (Tai Ho)	814705	817859
SR5	Sensitive receivers (Artificial Reef in NE Airport)	811489	820455
SR6	Sensitive receivers (Sha Chau and Lung Kwu Chau Marine Park)	805837	821818
SR7	Sensitive receivers (Tai Mo Do)	814293	821431
SR10A	Sensitive receivers (Ma Wan FCZ)1	823741	823495
SR10B(N)	Sensitive receivers (Ma Wan FCZ)2	823683	823187
CS(Mf)3	Control Station	809989	821117
CS(Mf)5	Control Station	817990	821129
CS4	Control Station	810025	824004
CS6	Control Station	817028	823992
CSA	Control Station	818103	823064

4.5 Monitoring Methodology

4.5.1 Instrumentation

(a) The in-situ water quality parameters, viz. dissolved oxygen, temperature, salinity, turbidity and pH, were measured by multi-parameter meters (i.e. Model YSI 6820 CE-C-M-Y) and pH meter (i.e. Thermo Orion 230A+) respectively.

4.5.2 Operating/Analytical Procedures

(a) Digital Differential Global Positioning Systems (DGPS) were used to ensure that the correct location was selected prior to sample collection.

(b) Portable, battery-operated echo sounders were used for the determination of water depth at each designated monitoring station.

(c) All in-situ measurements were taken at 3 water depths, 1 m below water surface, mid-depth and 1 m above sea bed, except where the water depth was less than 6 m, in which case the mid-depth station was omitted. Should the water depth be less than 3 m, only the mid-depth station was monitored.

(d) At each measurement/sampling depth, two consecutive in-situ monitoring (DO concentration and saturation, temperature, turbidity, pH, salinity) and water sample for SS. 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 DO or turbidity parameters was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.

(e) Duplicate samples from each independent sampling event were collected for SS measurement. Water samples were collected using the water samplers and the samples were stored in high-density polythene bottles. Water samples collected were well-mixed in the water sampler prior to pre-rinsing and transferring to sample bottles. Sample bottles were pre-rinsed with the same water samples. The sample bottles were then be packed in cool-boxes (cooled at $4^{o}C$ without being frozen), and delivered to ALS Technichem (HK) Pty Ltd. for the analysis of suspended solids concentrations. The laboratory determination work would be started within 24 hours after collection of the water samples. ALS Technichem (HK) Pty Ltd. is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes. For QA/QC procedures, one duplicate samples of every batch of 20 samples was analyzed.

(f) The analysis method and reporting and detection limit for SS is shown in Table 4.4.

Table 4.4 Laboratory Analysis for Suspended Solids

Parameters	Instrumentation	Analytical Method	Reporting Limit	Detection Limit
Suspended Solid (SS)	Weighting	APHA 2540-D	0.5mg/L	0.5mg/L

(g) Other relevant data were recorded, including monitoring location / position, time, water depth, tidal stages, weather conditions and any special phenomena or work underway at the construction site in the field log sheet for information.

4.5.3 Maintenance and Calibration

(a) All in situ monitoring instruments would be calibrated and calibrated by ALS Technichem (HK) Pty Ltd. before use and at 3-monthly intervals throughout all stages of the water quality monitoring programme. Calibration details are provided in Appendix E.

(b) The dissolved oxygen probe of YSI 6820 was calibrated by wet bulb method. Before the calibration routine, the sensor for dissolved oxygen was thermally equilibrated in water-saturated air. Calibration cup is served as a calibration chamber and it was loosened from airtight condition before it is used for the calibration. Calibration at ALS Technichem (HK) Pty Ltd. was carried out once every three months in a water sample with a known concentration of dissolved oxygen. The sensor was immersed in the water and after thermal equilibration, the known mg/L value was keyed in and the calibration was carried out automatically.

(c) The turbidity probe of YSI 6820 is calibrated two times a month. A zero check in distilled water was performed with the turbidity probe of YSI 6820 once per monitoring day. The probe will be calibrated with a solution of known NTU at ALS Technichem (HK) Pty Ltd. once every three months.

4.6 Monitoring Schedule for the Reporting Month

4.6.1 The schedule for impact water quality monitoring in December 2013 is provided in Appendix F.

4.7 Results and Observations

4.7.1 Impact water quality monitoring was conducted at all designated monitoring stations in the reporting month. Except Impact water quality monitoring at sampling location IS(Mf)9. Sampling location IS(Mf)9 was found enclosed by silt curtain during the reporting month. Samples were taken about 140 meters away from IS(Mf)9. The sampling location's coordination (East 813226, North 818708) was recorded. The Contractor was advised to take corrective actions to the temporary arrangement of the perimeter silt curtain as soon as possible.

4.7.2 Impact water quality monitoring results and graphical presentations are provided in Appendix J.

4.7.3 No water quality exceedance was recorded in the reporting month.

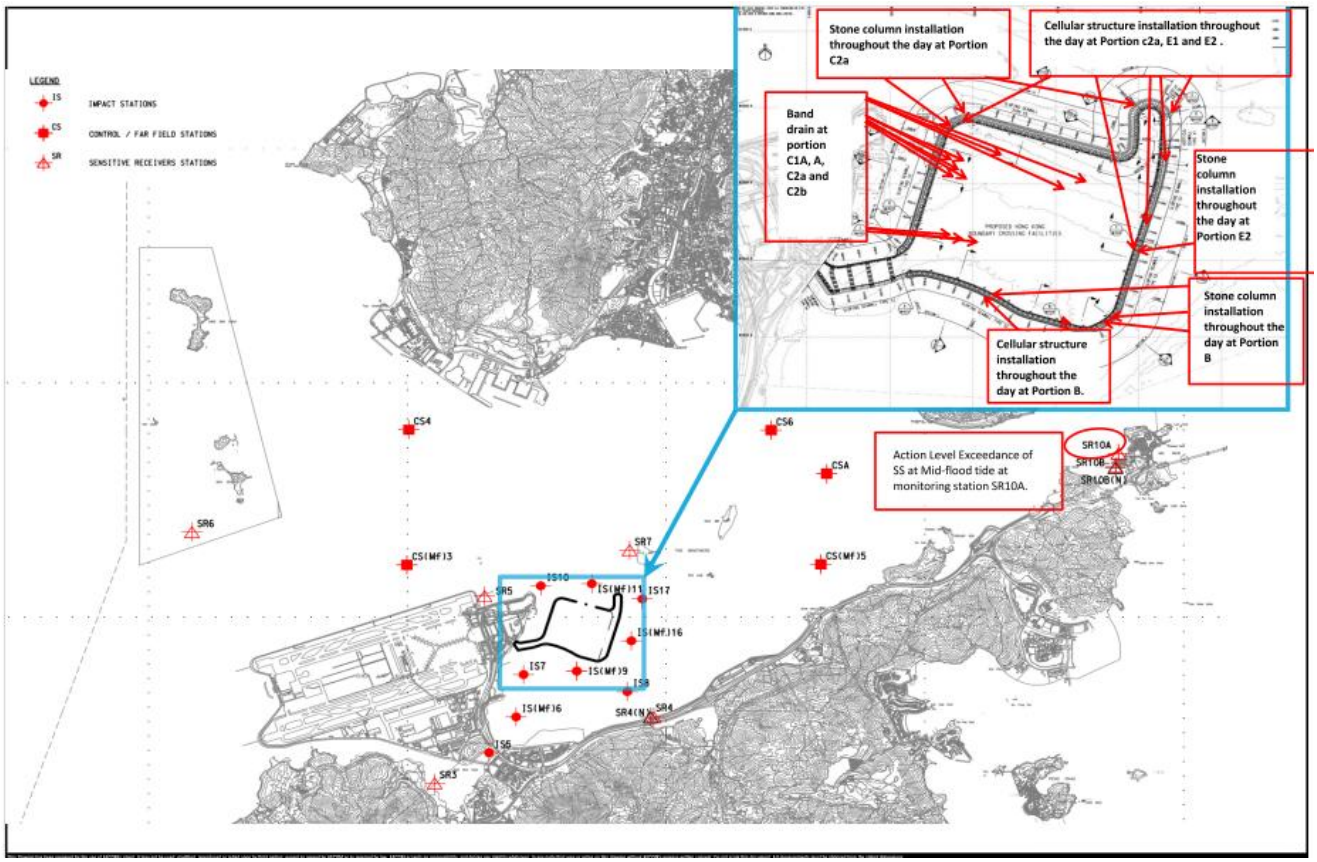
4.7.4 Three (3) Action Level exceedances and two (2) Limit Level Exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting month. The number of exceedances recorded in the reporting month at each impact station is summarized in Table 4.5.

Table 4.5 Summary of Water Quality Exceedances

Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
IS5	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)6	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS7	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS8	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	**(1) 20 Dec13**	0	**1**
IS(Mf)9	Action	0	0	0	0	0	0	0	**(1) 18 Dec13**	0	**1**
	Limit	0	0	0	0	0	0	0	0	0	0
IS10	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	**(1) 18 Dec13**	0	**1**
IS(Mf)11	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)16	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS17	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR3	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR4(N)	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR5	Action	0	0	0	0	0	0	0	**(1) 18 Dec13**	0	**1**
	Limit	0	0	0	0	0	0	0	0	0	0
SR6	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR7	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR10A	Action	0	0	0	0	0	0	0	**(1) 6 Dec13**	0	**1**
	Limit	0	0	0	0	0	0	0	0	0	0
SR10B (N)	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
Total	**Action**	0	0	0	0	0	0	0	0	**3**	
	Limit	0	0	0	0	0	0	0	0	**2**	

Note: S: Surface; and
M: Mid-depth.

4.7.5 One (1) Action Level exceedance at measured Suspended Solids (mg/L) were recorded on 06 Dec 2013 at monitoring station SR10A at Mid-flood tide. For Action Level exceedances at measured Suspended Solids (mg/L), 28.2 mg/L was recorded at Monitoring Station SR10A.



4.7.5.1 For locations and type of active works carried out on 6 Dec 13, please refer to the above layout map.

4.7.5.2 IS(Mf)11 and IS10 are located downstream and closer to the active works than monitoring station SR10A during flood tide. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during flood tide on the same day at IS(Mf)11 and IS10 were below the Action and Limit Level which indicates project work is unlikely to contribute to the action level exceedance recorded at SR10A.

4.7.5.3 The monitoring location of monitoring station SR10A are considered upstream and remote to the active works of this project during flood tide. Therefore it was unlikely that the exceedance recorded at SR10A during flood tide was due to active construction activities of this project.

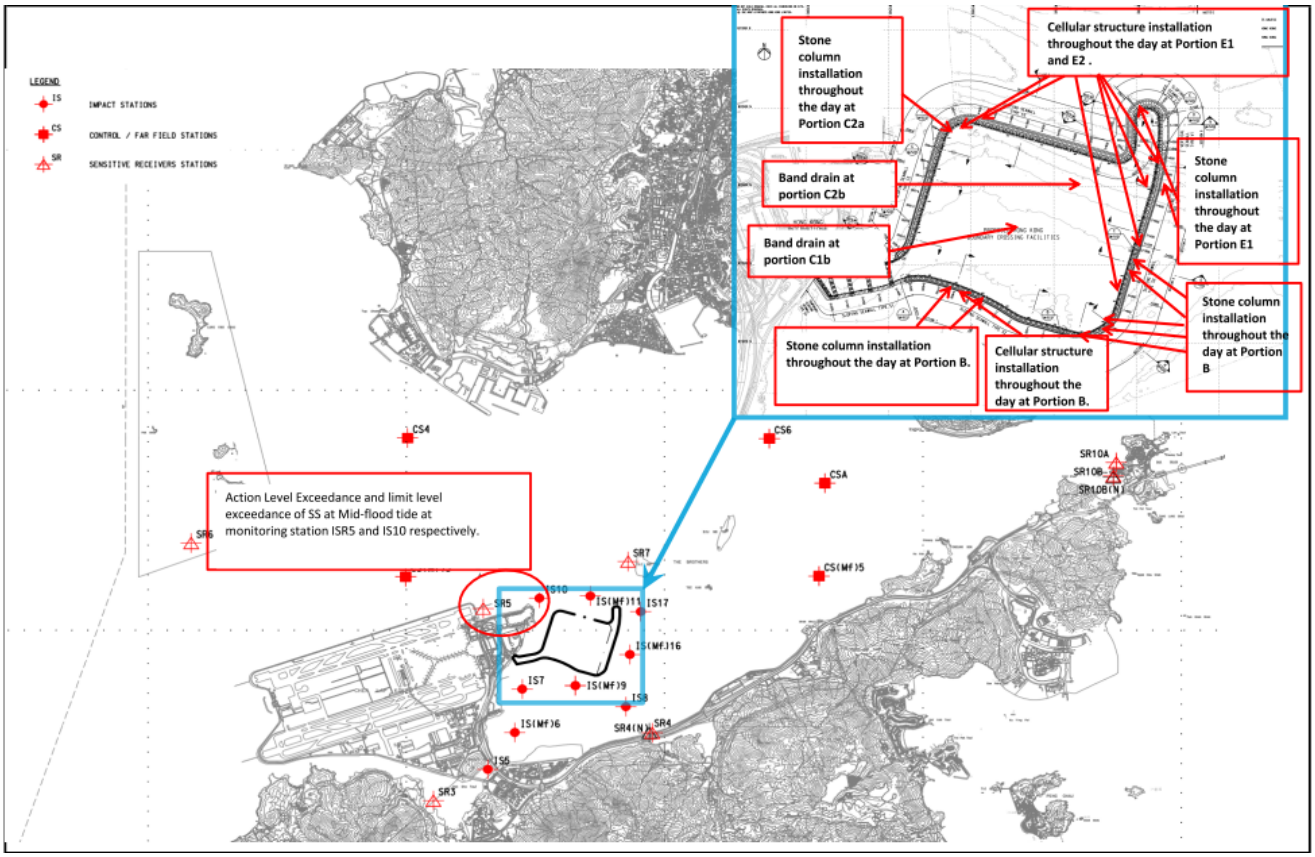
4.7.5.4 The depth averaged SS (in mg/L) and depth averaged turbidity (in NTU) at CS(Mf)5 is 12mg/L and 18.7NTU respectively which is below the action and limit levels. This indicates that water quality at area closer to active works was not adversely affected.

4.7.5.5 The exceedance was likely due to local effects in the vicinity of SR10A.

4.7.5.6 Nevertheless, the Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.

4.7.5.7 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

4.7.6 One (1) action level exceedances at measured Suspended Solids (mg/L) were recorded on 18 Dec 2013 at monitoring station SR5 at Mid-flood tide and one (1) limit level exceedance at measured Suspended Solids (mg/L) was recorded on 18 Dec 2013 at monitoring station IS10 at Mid-flood tide. For Action Level exceedance at measured Suspended Solids (mg/L), 33.2mg/L were recorded at Monitoring Station SR5. For limit level exceedance at measured Suspended Solids (mg/L), 34.9 mg/L was recorded at Monitoring Station IS10.



4.7.6.1 For locations and type of active works carried out on 18 Dec 13, please refer to the above layout map.

4.7.6.2 Exceedances recorded at SR5 and IS10 are likely due to marine based construction activities of the Project because:

4.7.6.3 With refer to monitoring record, appearance of water was not clear at IS10 and SR5 when compared with the appearance of water at IS(Mf)11 and IS17 during monitoring during Mid-flood tide on 18 Dec 13. This indicates the source of exceedance may not due to works activities at portion E1and E2 which is directly upstream of IS(Mf)11 and IS17. The relatively turbid water observed at IS10 and SR5 may due to activities at Portion C2a during flood tide.

4.7.6.4 As informed by the Contractor, active works like stone column and cellular structure installation were carried out at Portion C2a, E1, E2 and B on18 and 20 Dec 13. With review of the information provided by the Contactor, active works like stone column and cellular structure installation were both carried out at Portion C2a, E1, E2 and B on 16, 18 and 20 Dec 13 at almost the same location but no exceedance was recorded at monitoring station SR5, IS10 and IS(Mf)9 on 16 and 20 Dec 13 during mid flood tide. This indicates stone column and cellular structure installation were unlikely to cause the exceedance at monitoring station SR5, IS10 and IS(Mf)9 on 18 Dec 13.

4.7.6.5 With refer to the silt curtain condition on 18 Dec 13, defects of the perimeter silt curtain was observed at northwest of the construction site.

4.7.6.6 As such, the exceedances recorded at IS10 and SR5 were considered as project related.

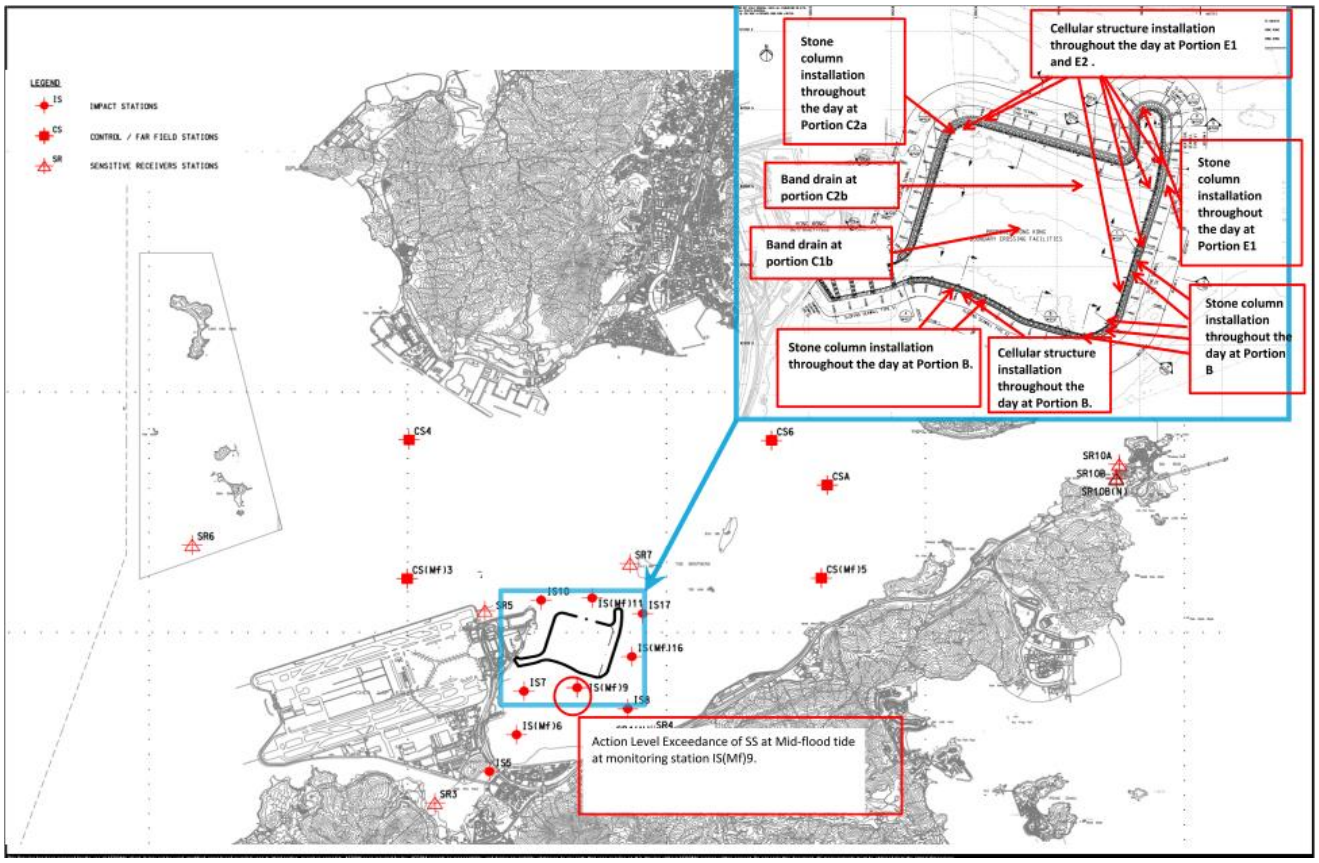
4.7.6.7 For action required under the action plan, please refer to Appendix L - Event Action Plan

4.7.6.8 Action taken under the action plan

1 Water sample was taken on site and was delivered to the laboratory and the SS was not measured in-situ, as a result it is not applicable to “Repeat in situ measurement to confirm findings”
2 With refer to the joint site inspection audit conducted on 19 Dec 13, sources of impact is likely due to the turbine activities and/or movement of vessel at shallow water (at near the entrance at southwestern of the Construction site and/or when vessel’s propeller was turn on at shallow water). The dispersion of turbid water from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain is potentially due to defects of perimeter silt curtain at certain sections.
3 IEC, contractor, ER and EPD were informed on 3 January 13 through notification of exceedance via email;
4 Monitoring data was reviewed, plant, equipment and Contractor's working methods was checked during joint site inspection audit conducted on 19 Dec 13;
5 The Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.
6 As informed by the Contractor maintenance work for the defects of the northwest part of the perimeter silt curtain was conducted on 4 January 13.
7 Monitoring results show no recurrence of exceedance of SS at IS10 and SR5 on 20, 23 and 25 of Dec 2013.

4.7.6.9 The exceedances note at IS10 and SR5 on 18 Dec 13 were considered as project related. Althuogh the silt curtain integrity checking record on 4 January 13 shows that the disconnected silt curtain observed on 18 Dec 13 at northwest of HKBCF were rectified, the effectiveness of such rectification will be closedly monitored through impact water quality monitoring and inspected through regular site inspection audit. The Contractor was further reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.

4.7.7 One (1) action level exceedances at measured Suspended Solids (mg/L) were recorded on 18 Dec 2013 at monitoring station IS(Mf)9 at Mid-flood tide. For Action Level exceedances at measured Suspended Solids (mg/L), 23.9 mg/L was recorded at Monitoring Station IS(Mf)9.



4.7.7.1 For locations and type of active works carried out on 18 Dec 13, please refer to the above layout map.

4.7.7.2 Exceedance recorded at IS(Mf)9 is unlikely due to marine based construction activities of the Project because:

4.7.7.3 With refer to the silt curtain condition on 18 Dec 13, no defects of the perimeter silt curtain was observed at south and southeast of the construction site.

4.7.7.4 The Depth averaged turbidity (in NTU) and depth averaged SS (in mg/L) of nearby monitoring station, such as IS7, IS8 and IS(Mf)16 were below the action and limit level, indicating the water quality at area nearby IS(Mf)9 was not adverse affected.

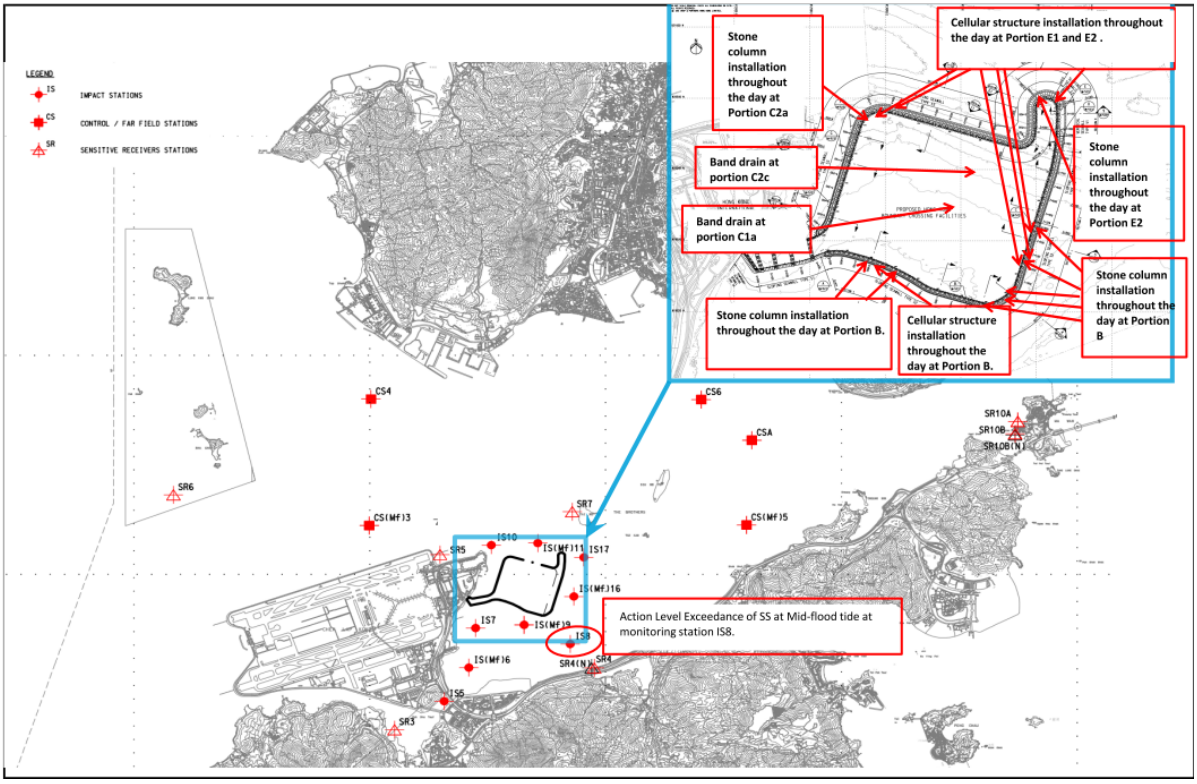
4.7.7.5 With referred to monitoring record, no turbid water or silt plume was observed when monitoring was conducted IS(Mf)9. (Please refer to the attached photo record for reference of sea condition)

4.7.7.6 As such, the exceedance recorded at IS(Mf)9 is considered non-project related.

4.7.7.7 The Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.

4.7.7.8 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

4.7.8 One (1) Limit Level exceedance at measured Suspended Solids (mg/L) was recorded on 20 Dec 2013 at monitoring station IS8 at Mid-flood tide. For limit exceedance at measured Suspended Solids (mg/L), 44.1 mg/L was recorded at Monitoring Station IS8.



4.7.8.1 For locations and type of active works carried out on 20 Dec 13, please refer to the above layout map.

4.7.8.2 IS(Mf)9 and IS(Mf)16 are located closer to the active works than monitoring station IS8. Depth Average Suspended Solids (SS) values (in mg/L) recorded during the flood tide on the same day at IS(Mf)9 and IS(Mf)16 were below the Action and Limit Level which shows that the water quality closer to active works were not adversely affected.

4.7.8.3 The monitoring location of monitoring station IS8 are considered located upstream to the active works of this project during flood tide. Therefore it was unlikely that the exceedances recorded at IS8 was due to active construction activities of this project.

4.7.8.4 When impact water quality monitoring was carried out during mid flood tide at monitoring location IS8 on 20 Dec 13, no defects of the perimeter silt curtain was observed and no silty plume were observed to flow from the inside to the outside of the site boundary. (For reference, please see attached photo):

4.7.8.5 Turbidity level (NTU) result recorded on 20 Dec 13 at IS8 during flood tide is 22.3 NTU which is below the Action and Limit Level, this indicates turbidity level was not adversely affected.

4.7.8.6 Nevertheless, the Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.

4.7.8.7 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

4.7.8.8 The exceedances were likely due to local effects in the vicinity of IS8.

4.7.9 The event action plan is annexed in Appendix L.

5 DOLPHIN MONITORING

5.1 Monitoring Requirements

5.1.1 Vessel based surveys for the Chinese White Dolphin (CWD), *Sousa chinensis,* are to be conducted by a dedicated team comprising a qualified marine mammal ecologist and experienced marine mammal observers (MMOs). The purpose of the surveys are to evaluate the impact of the HKCBF reclamation and, if deemed detrimental, to take appropriate action as per the EM&A manual.

5.1.2 This 'Impact Monitoring' follows several months of 'Baseline Monitoring' so similar survey methodologies have been adopted to facilitate comparisons between datasets. Further, the data collected are compatible with, and are available for, incorporation into the data set managed by the Agriculture, Fisheries and Conservation Department (AFCD) as part of Hong Kong's long term Marine Mammal Monitoring Programme.

5.2 Monitoring Equipment

5.2.1 Table 5.1 summarises the equipment used for the impact dolphin monitoring.

Table 5.1 Dolphin Monitoring Equipment

Equipment	Model
Commercially licensed motor vessel	15m in length with a 4.5m viewing platform
Global Positioning System (GPS) x2	Integrated into T7000 Garmin GPS Map 78C
Computers (T7000 Tablet, Intel Atom)	Windows 7/MSO 13 Logger
Camera	Nikon D90 300m 2.8D fixed focus Nikon D90 20-400m zoom lens
Laser Rangefinder	Infinitor LRF1000/ Kings 950
Marine Binocular x3	Nexus 7 x 50 marine binocular with compass and reticules Fujinon 7 x 50 marine binocular with compass and reticules

5.3 Monitoring Frequency and Conditions

5.3.1 Dolphin monitoring is conducted twice per month in each survey area.

5.3.2 Dolphin monitoring is conducted only when visibility is good (e.g., over 1km) and the sea condition is at a Beaufort Sea State of 4 or better.

5.3.3 When thunder storm, black rain or typhoon warnings are in force, all survey effort is stopped.

5.4 Monitoring Methodology and Location

5.4.1 The impact dolphin monitoring is vessel-based and combines line-transect and photo-ID methodology. The survey follows pre-set and fixed transect lines in the two areas defined by AFCD as:

5.4.2 Northeast Lantau survey area; and

5.4.3 Northwest Lantau survey area.

5.4.4 The co-ordinates for the transect lines and layout map have been provided by AFCD and are shown in Table 5.2 and Figure 4.

Table 5.2 Impact Dolphin Monitoring Line Transect Co-ordinates (Provided by AFCD)

	HK Grid System		Long Lat in WGS84	
ID	X	Y	Long	Lat
1	804671	814577	113.870308	22.269741
1	804671	831404	113.869975	22.421696
2	805475	815457	113.878087	22.277704
2	805477	826654	113.877896	22.378814
3	806464	819435	113.887615	22.313643
3	806464	822911	113.887550	22.345030
4	807518	819771	113.897833	22.316697
4	807518	829230	113.897663	22.402113
5	808504	820220	113.907397	22.320761
5	808504	828602	113.907252	22.396462
6	809490	820466	113.916965	22.323003
6	809490	825352	113.916884	22.367128
7	810499	820690	113.926752	22.325043
7	810499	824613	113.926688	22.360464
8	811508	820847	113.936539	22.326475
8	811508	824254	113.936486	22.357241
9	812516	820892	113.946329	22.326894
9	812516	824254	113.946279	22.357255
10*	813525	818270	113.956156	22.303225
10*	813525	824657	113.956065	22.360912
11	814556	818449	113.966160	22.304858
11	814556	820992	113.966125	22.327820
12	815542	818807	113.975726	22.308109
12	815542	824882	113.975647	22.362962
13	816506	819480	113.985072	22.314192
13	816506	824859	113.985005	22.362771
14	817537	820220	113.995070	22.320883
14	817537	824613	113.995018	22.360556
15	818568	820735	114.005071	22.325550
15	818568	824433	114.005030	22.358947
16	819532	821420	114.014420	22.331747
16	819532	824209	114.014390	22.356933
17	820451	822125	114.023333	22.338117
17	820451	823671	114.023317	22.352084
18	821504	822371	114.033556	22.340353
18	821504	823761	114.033544	22.352903
19	822513	823268	114.043340	22.348458
19	822513	824321	114.043331	22.357971
20	823477	823402	114.052695	22.349680
20	823477	824613	114.052686	22.360610
21	805476	827081	113.877878	22.382668
21	805476	830562	113.877811	22.414103
22	806464	824033	113.887520	22.355164
22	806464	829598	113.887416	22.405423
23	814559	821739	113.966142	22.334574
23	814559	824768	113.966101	22.361920

5.4.5 *Remark: Due to the presence of deployed silt curtain systems at the site boundaries of the Project, some of the transect lines shown in Figure 5 could not be fully surveyed during the regular survey. Transect 10 is reduced from 6.4km to approximately 3.6km in length due to the HKBCF construction site. Therefore the total transect length for both NEL and NWL combined is reduced to approximately 111km.

5.5 Monitoring Procedures

5.5.1 The study area incorporates 23 transects which are to be surveyed twice per month. Each survey day lasts approximately 9 hours.

5.5.2 The survey vessel departs from Tung Chung Development Pier, Tsing Yi Public Pier or the nearest safe and convenient pier.

5.5.3 When the vessel reaches the start of a transect line, “on effort” survey begins. Areas between transect lines and traveling to and from the study area are defined as “off effort”.

5.5.4 The transect line is surveyed at a speed of 6-8 knots (11-14 km/hr). For the sake of safety, the speed was sometimes a bit slower to avoid collision with other vessels. During some periods, tide and current flow in the survey areas exceeds 7 knots which can affect survey speed. There are a minimum of four marine mammal observers (MMOs) present on each survey, rotating through four positions, observers (2), data recorder (1) and ‘rest’ (1). Rotations occur every 30 minutes or at the end of dolphin encounters. The data recorder records effort, weather and sightings data directly onto the programme Logger and is not part of the observer team. The observers search with naked eye and binoculars between 90° and 270° abeam (bow being 0°).

5.5.5 When a group of dolphins is sighted, position, bearing and distance data are recorded immediately onto the computer and, after a short observation, an estimate made of group size. These parameters are linked to the time-GPS-ships data which are automatically stored in the programme Logger throughout the survey period. In this manner, information on heading, position, speed, weather, effort and sightings are stored in a format suitable for use with DISTANCE software for subsequent line transect analyses.

5.5.6 Once the vessel leaves the transect line, it is deemed to be “off effort”. The dolphins are approached with the purpose of taking high resolution pictures for proper photo-identification of individual CWD. Attempts to photograph all dolphins in the group are made. Both the left and right hand sides of the dorsal fin area of each dolphin in the group are photographed, if possible. On finishing photographing, the vessel will return to the transect line at the point of departure and “on effort” survey is resumed.

5.5.7 Sightings which are made while on the transect line are referred to as "on effort sightings", while not on the actual transect line are referred to as an “opportunistic sightings” (e.g. another group of dolphins is sighted while travelling back to the transect line). Only “on effort sightings” can be used in analyses which require effort or rate quantification, e.g., encounter rate per 100km searched. This is also how “on effort sightings” are treated in the baseline report. “Opportunistic sightings” provide additional information on individual habitat use and population distribution and they are noted accordingly.

5.5.8 As time and GPS data are automatically logged throughout the survey and are linked to sightings data input, start and end times of encounters and deviation from the transect lines are recorded and can be subsequently reviewed.

5.6 Monitoring Schedule for the Reporting Month

5.6.1 The schedule for dolphin monitoring in December 2013 is provided in Appendix F.

5.7 Results and Observations

5.7.1 Dolphin surveys were conducted on 19, 21, 26 and 28 December 2013. In summary, a total of 221.2km of survey was conducted. All 100% of “on effort” survey was conducted under favourable conditions (Beaufort Sea State 3 or better). The details are shown below:-

5.7.2 The effort summary and sightings data are shown in Tables 5.3 and 5.4, respectively. The survey efforts conducted in December 2013 are plotted in Figure 5a-c. For Table 5.3, only on-effort information is included. Transects conducted in all Beaufort Sea State are included. Compared to previous monthly reports, the whole number Beaufort Sea State scale is used so as to ease comparison with other dolphin monitoring reports.

Table 5.3 Impact Dolphin Monitoring Survey Effort Summary, Effort by Area and Beaufort Sea State

Survey	Date	Area	Beaufort	Effort (km)	Total Distance Travelled (km)
1	19/12/2013	NWL	2	40.5	**62.1**
	19/12/2013	NWL	3	21.6	
	21/12/2013	NWL	2	7.9	**46.8**
	21/12/2013	NWL	3	2.1	
	21/12/2013	NEL	1	8.3	
	21/12/2013	NEL	2	20.9	
	21/12/2013	NEL	3	7.6	
2	26/12/2013	NWL	2	35.8	**52.7**
	26/12/2013	NWL	3	16.9	
	28/12/2013	NWL	1	4.8	**59.6**
	28/12/2013	NWL	2	11.7	
	28/12/2013	NWL	3	6.9	
	28/12/2013	NEL	1	25	
	28/12/2013	NEL	2	11.2	
TOTAL in December 2013					**221.2**

*Remark: Surveys conduct under Beaufort Sea State 3 or below are considered as under favourable condition.

Table 5.4 Impact Dolphin Monitoring Survey Details in December 2013

Date	Location	No. Sightings "on effort"	No. Sightings "opportunistic"
19/12/13	NW L	4	1
	NEL	0	0
21/12/13	NW L	0	0
	NEL	0	0
26/12/13	NW L	5	1
	NEL	0	0
28/12/13	NW L	1	2
	NEL	0	0
TOTAL in December 2013		**10**	**4**

Table 5.5 The Encounter Rate of Number of Dolphin Sightings & Total Number of Dolphins per Area^

Encounter Rate of Number of Dolphin Sightings (STG)*						
Date	**NEL Track**	**NWL Track**	**NEL Sightings**	**NWL Sightings**	**NEL Encounter Rate**	**NWL Encounter Rate**
19 & 21/12/2013	36.8 km	72.1 km	0	4	0.0	5.5
26 & 28/12/2013	36.2 km	76.1 km	0	6	0.0	7.9
Encounter Rate of Total Number of Dolphins (ANI)**						
Date	**NEL Track**	**NWL Track**	**NEL Dolphins**	**NWL Dolphins**	**NEL Encounter Rate**	**NWL Encounter Rate**
19 & 21/12/2013	36.8 km	72.1 km	0	21	0.0	29.1
26 & 28/12/2013	36.2 km	76.1 km	0	28	0.0	36.8

* Encounter Rate of Number of Dolphin Sightings (STG) presents encounter rates in terms of groups per 100km.
** Encounter Rate of Total Number of Dolphins (ANI) presents encounter rates in terms of individuals per 100km. And the encounter rate is not corrected for individuals, calculation may represent double counting.
^The table is made only for reference to the quarterly STG & ANI, which were adopted for the Event & Action Plan.

5.7.3 A total of fourteen dolphin sightings were recorded during the two surveys, five on 19 December 2013; six on 26 December 2013 and three sightings were made on 28 December 2013. No sightings were recorded on the 21 December 2013. Of the fourteen sightings, ten were “on effort” (which are all under favourable condition) and four were “opportunistic”. A total of sixty one individuals were sighted from the two impact dolphin surveys in the reporting period. Sighting details are summarised and plotted in Appendix K and Figure 5c, respectively.

5.7.4 Behaviour: Of the fourteen sightings made, three sightings were recorded as ‘multiple’ behavior (all as travelling and feeding); four sightings were recorded as feeding; four was recorded as travelling and one sighting was recorded as “unknown” and; two sightings were recorded as “milling”. The locations of sighting with different behaviour are mapped in Figure 5d.

5.7.5 Photo ID analyses for December 2013 are underway (as of 8 January 2014) and will be presented in the monthly EM&A Report for January 2014.

5.7.6 Noteworthy Observation: Six mother and calf pairs were observed during six separate encounters. Close approaches were not made to these groups. Analyses of the images which were obtained indicate that at least 4 different calves were seen in December 2013. This was concluded as differences between calf size and of the mothers fin shapes could be discerned. At least two calves were recently born (sightings 879 and 883). The location of sightings and images available are provided in Figure 5e and 5f.

5.7.7 Route travelled on CWD line transect surveys conducted on 21 and 28 Dec 13 shifted slightly to the east at the northern end of transect line 11 due works at HKBCF. Survey will be taken as close to transect 11 as possible. IEC and RSS was informed on 7 Jan 13 and investigation started on 9 January 13 after request for investigation received from IEC on the same date.

5.7.7.1 According to the preliminary assessment and review provided by the dolphin specialist, the shift in the transect line is insignificant and will not affect the overall dolphin survey and analysis. Further, as informed by the Contractor, the temporary arrangement of the silt curtain would be kept tentatively to mid- 2014.

5.7.7.2 Site visit will be conducted to investigate the situation and such temporary arrangement of the silt curtain, the condition for any significant effect will be further reviewed, to advise potential mitigation measures to the Contractor to further minimize the effect, if needed.

5.7.8 Further, southern ends of transect 1 and 2 was truncated on the 19th of December as works were located in this area. These works had relocated by the 26 of December and lines 1 and 2 were completed. Thus there were 999.4m of trackline that could not be conducted in December.

5.7.9 The event action plan is annexed in Appendix L.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

6.1 Site Inspection

6.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. In the reporting month, 5 site inspections were carried out on 5, 12, 19 and 27 December 2013.

6.1.2 Particular observations during the site inspections are described below:

Air Quality

6.1.3 Dark smoke was observed generating from an excavator at works area of Portion A. The Contractor should provided maintenance to the machineries used on-site. Maintenance had been provided to the concerned excavator. No dark smoke was observed to be generated from the excavator. (Closed)

6.1.4 Fugitive dust was observed when moisten rock material is being transferred by a barge installed with conveyor belt. The Contractor was reminded to enhanced dust control measures to prevent generation of fugitive dust. (Reminder)

6.1.5 Dry sand surface was observed on works area of Portion A. The Contractor was reminded to provide sufficient dust control measures. Pending for Contractor's rectification (Follow-up).

Noise

6.1.6 Noise decoupling measure was observed to be missing from the generators on Hong Fai and SHB205 and on barge SHB210. Noise decoupling measures should be provided to the concerned generators. Noise decoupling measures were provided to the concerned generators. (Closed)

6.1.7 Insufficient acoustically decoupling measure was observed from a generator and two water pumps on barge FTB19 and 2 generators on FTB 21. The Contractor was advised to provide sufficient acoustic decoupling measure(s) such as acoustic mat to noisy equipments. The Contractor was reminded that insufficient/inadequate mitigation measures must be swiftly rectified. Pending for Contractor's rectification for Insufficient acoustically decoupling measure observed on FTB19 and FTB21. (Follow-up)

Water Quality

6.1.8 Turbid water was observed at the southwestern silt curtain entrance area. Refer to the photo taken and site observations, sources of impact likely due to the turbine activities and/or movement of vessel at shallow water (at near the entrance at southwestern of the Construction site and/or when vessel's propeller was turn on at shallow water). The dispersion of turbid water from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain is potentially due to defects of perimeter silt curtain at certain sections and/or insufficient overlapping at entrance/exit of the perimeter silt curtain.

The Contractor was advised to regularly evaluate the integrity of the perimeter silt curtain by reviewing the results obtained from daily checking or/and monthly diver inspections specified by the Silt Curtain Deployment Plan. The Contractor was advised to provide sufficient mitigation measures and swiftly carry out maintenance once defects of the perimeter silt curtain are found during the above mentioned daily checking and/or monthly diver inspection. As refer to the silt curtain integrity checking record maintenance was given to the southwestern silt curtain entrance area. (Closed)

6.1.9 Oil drums and chemical containers were observed without the provision of drip trays at Portion A, on barge SHB205 and on temporary rock bund. The Contractor was reminded to provide drip trays to oil drums and chemical container to retain leakage, if any. Drip trays were provided to oil drums as preventive measure for oil leakage. The concerned chemical container had been removed off-site. (Closed)

6.1.10 An oil drum was observed to be not properly plugged at works area of Portion A. The Contractor should provide proper measures to seal the opening of oil drums to avoid leakage. The concerned oil drum was plugged. (Closed)

6.1.11 Containers of chemical to be used and chemical waste were misplaced together in Hong Fai. The Contractor should store the chemical and chemical waste separately. Containers of chemical to be used and chemical waste were separately stored. (Closed)

6.1.12 Movable lighting machineries were observed to be placed on bare ground of Portion D, on SHB205 and at works area at Portion A without the provision of drip trays. It was observed that drip trays were provided to movable lighting machineries at temporary rock bund and at works area at portion A and on SHB205. The contractor was advised to continue to provide drip tray or equivalent measures to retain potential oil leakage to movable lighting machineries. An ineffective leakage preventive measure for movable lighting machineries at Portion D was pending for Contractor's rectification. (Follow-up)

6.1.13 Trays of oil drums were found to be placed near to the shore. The Contractor should secure the oil drums with drip tray away from the shore to ensure no washing off of oil occurs. Trays of oil drums have been moved away from the shore. (Closed)

6.1.14 During site inspection audit, sandfilling seem to be conducted at one end of the temporary rock bund. The Contractor was reminded to conduct sandfilling behind at least 200m leading temporary rock bund/seawall. (Reminder)

6.1.15 Oil stain was observed on barge FTB19. The Contractor was advised to clear the oil stain using absorbent material. The Contractor cleared the oil stain using absorbent material and disposed the spent absorbent material as chemical waste. (Closed)

6.1.16 Waste water was observed accumulated inside drip trays on FTB21 and the Contractor was reminded to clear the waste water regularly to prevent runoff or accidental spillage (Reminder)

6.1.17 Defect was observed within a bunding and waste oil water mixture was observed on the barge surface. The Contractor was reminded to rectify the defects observed and cleared the oil waste using chemical absorbent material and dispose the chemical absorbent material as chemical waste. The Contractor rectified the defects observed and cleared the oil waste using chemical absorbent material and dispose the chemical absorbent material as chemical waste. (Closed)

6.1.18 Oil stain was observed on temporary rock bund. The Contractor was advised to clear the oil stain using absorbent material. The Contractor cleared the oil stain on the temporary rock bund. (Closed)

Chemical and Waste Management

6.1.19 Rubbish bin was observed without being covered; the Contractor was reminded to properly store general waste and covers all rubbish bins. The rubbish was removed cleared by the Contractor (Closed).

6.1.20 General refuse was scattered on sea water and along the shore near Portion D. The Contractor was reminded to clear the refuse in timely manner and keep site clean and tidy. Pending for Contractor's rectification (Follow-up).

Landscape and Visual Impact

6.1.21 No relevant works was carried out in the reporting month.

Others

6.1.22 Rectifications of remaining identified items are undergoing by the Contractor. Follow-up inspections on the status on provision of mitigation measures will be conducted to ensure all identified items are mitigated properly.

6.2 Advice on the Solid and Liquid Waste Management Status

6.2.1 The Contractor had registered as a chemical waste producer for this Project. Receptacles were available for general refuse collection and sorting.

6.2.2 As advised by the Contractor,1,213,844.1m^3 of fill were imported for the Project use in the reporting period. 0.0103 tonnes of metals, 2tonnes chemical waste and 26m^3 of general refuse were generated and disposed of in the reporting period. Monthly summary of waste flow table is detailed in Appendix M.

6.2.3 The Contractor is advised to properly maintain on site C&D materials and wastes storage, collection, sorting and recording system, dispose of C&D materials and wastes at designated ground and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

6.2.4 The Contractor is reminded that chemical waste should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labeling and Storage of Chemical Wastes.

6.3 Environmental Licenses and Permits

6.3.1 The environmental licenses and permits for the Project and valid in the reporting month is summarized in Table 6.1.

Table 6.1 Summary of Environmental Licensing and Permit Status

Statutory Reference	License/ Permit	License or Permit No.	Valid Period		License/ Permit Holder	Remarks
			From	To		
EIAO	Environmental Permit	EP-353/2009/G	06/08/2012	N/A	HyD	Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities
		EP-354/2009/A	08/12/2010	N/A		Tuen Mun – Chek Lap Kok Link (TMCLKL Southern Landfall Reclamation only)
APCO	NA notification	--	30/12/2011	--	CHEC	Works Area WA2 and WA3
APCO	NA notification	--	17/01/2012	--	CHEC	Works Area WA4
WDO	Chemical Waste Producer Registration	5213-951-C1186-21	30/3/2012	N/A	CHEC	Chemical waste produced in Contract HY/2010/02
WDO	Chemical Waste Producer Registration	5213-974-C3750-01	31/10/2012	--	CHEC	Registration as Chemical Waste Producer at To Kau Wan(WA4)
WDO	Chemical Waste Producer Registration	5213-839-C3750-02	13/09/2012	--	CHEC	Registration as Chemical Waste Producer at TKO 137(FB)
WDO	Billing Account for Disposal of Construction Waste	7014181	05/12/2011	N/A	CHEC	Waste disposal in Contract HY/2010/02
NCO	Construction Noise Permit	GW-RW0888-13	27/12/2013	26/06/2014	CHEC	Works Area WA4 in Contract HY/2010/02
NCO	Construction Noise Permit	GW-RS1279-13	12/11/2013	11/01/2014	CHEC	Reclamation Works in Contract HY/2010/02
NCO	Construction Noise Permit	GW-RE1345-13	31/12/2013	30/06/2014	CHEC	Section of TKO Fill Bank under Contract HY/2010/02

6.4 Implementation Status of Environmental Mitigation Measures

6.4.1 In response to the site audit findings, the Contractors carried out corrective actions.

6.4.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in Appendix C. Most of the necessary mitigation measures were implemented properly.

6.4.3 Training of marine travel route for marine vessels operator was given to relevant staff and relevant records were kept properly.

6.4.4 Regarding the implementation of dolphin monitoring and protection measures (i.e. implementation of Dolphin Watching Plan, Dolphin Exclusion Zone and Silt Curtain integrity Check), regular checking

were conducted by the experienced MMOs within the works area to ensure no dolphin was trapped by the enclosed silt curtain systems. Any dolphin spotted within the enclosed silt curtain systems was reported and recorded. Relevant procedures were followed and measures were well implemented. Silt curtain systems were also inspected timely in accordance to the submitted plan. All inspection records were kept properly.

6.4.5 Acoustic decoupling measures on noisy plants on construction vessels were checked regularly and the Contractor was reminded to ensure provision of ongoing maintenance to noisy plants and to carry out improvement work once insufficient acoustic decoupling measures were found.

6.5 Summary of Exceedances of the Environmental Quality Performance Limit

6.5.1 All 1-Hour TSP results were below the Action and Limit Level in the reporting month. Two (2) 24-hour TSP results recorded at AMS3A and AMS7 exceeded the Action Level in the reporting month. Investigation results showed that the Two (2) 24-hour TSP action level exceedances recorded at AMS3A and AMS7 were not related to project.

6.5.2 For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.

6.5.3 Three (3) Action Level Exceedances and two (2) Limit Level Exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting month. Investigation results shows that Action Level Exceedance recorded at SR10A on 6 Dec 13, IS(Mf)9 on 18 Dec 13 and Limit Level Exceedance recorded at IS8 on 20 Dec 13 were not related to project. Investigation results shows that the Action Level Exceedance recorded at SR5 and Limit Level Exceedance recorded at IS10 on 18 Dec 13 were related to project.

6.5.4 Cumulative statistics on exceedance is provided in Appendix N.

6.6 Summary of Complaints, Notification of Summons and Successful Prosecutions

6.6.1 The Environmental Complaint Handling Procedure is annexed in Figure 6.

6.6.2 As informed by the Contractor on 5 Dec13, one (1) noises related complain of a barge moving through the southern channel of HyD's construction site after 23:00 on 8.11.2013. Site daily for barges was requested from the Contractor and as refer to the site daily provided by the Contractor, there was no barge operated after 18:25 on 08 Nov 13. The complaint is therefore considered not likely to be related to the construction works.

6.6.2.1 The Contractor was remind to continue to properly implement the existing noise mitigation measures i.e. to well maintain all plant and equipment in good condition to avoid noise generation and to turn off or throttled down idle equipment. The Contractor was reminded to inform related parties when environmental complain was received to ensure future timely reporting of any complaints/ enquiry.

6.6.3 One (1) complaint received from Penta-Ocean – Gitanes Joint Venture (CV/2012/03) mentioned that the formation works of the Contaminated Mud Pit CMP1 to the South of the Brothers (CMP1 of SB) which has been completed in mid-August 2013 and the pit has been commissioned for receiving contaminated marine mud from other projects starting from 16 August 2013. However, it was recently observed that some of the project vessels of HY/2010/02 (photos taken on 20 Nov 2013 are attached) had berthed within the said pit and those anchorages would likely cause disruption to the underlying contaminated mud and thus induce unfavourable contamination impact to the surrounding marine environment. In this regard, they reminded the contractor to avoid berthing of their vessels within the boundary of CMP1 of SB thereafter for the sake of environmental concern.

6.6.3.1 With refer to the given photo, there are no sufficient details or features could be found on the anchored vessels that confirmed they are project vessels (lack of names and vessel number); it cannot be conclude that the concerned vessels shown in the photos belong to this Contract. The complaint is therefore considered not likely to be related to the construction works.

6.6.3.2 The Contractor was advised to notice all captains of the boats of this Contract to be aware of the captioned incident and to avoid the anchoring of vessels within the concerned area. Further to the

captioned complaint on 22/11/2013, The Contractor had followed up with the case about their vessels berthing within the boundary of CMP1 of SB thereafter, causing disruption to the underlying contaminated mud and induces contamination impact to the surrounding marine environment. In respect of the concern situation, all captains of the vessels were reminded to avoid anchor in the captioned area immediately.

6.6.4 As informed by the Contractor on 12 Dec 13. A complaint involves the leakage of sand from barges causing water discoloration at sea near Tuen Mun Pierhead Garden and sand material without properly covered was blown to the inside of the residential area which caused disturbance to residence.

6.6.4.1 Regarding the leakage from work barges causing water pollution near Tuen Mun Pierhead Garden , it is noted that all project related vessels (including sand barges) are designated with a regular marine travel route to the site, but the regular travel route plan of this project does not specify the travel route passing through the at area at sea near Tuen Mun Pierhead Garden and with refer to photo record, Contractor would water the sand material to keep the sand material wet to prevent generation of fugitive dust.

6.6.4.2 With refer to available information provided and monitoring data recorded on 09 Dec 13, it cannot indicate that the water quality impact and air quality impact were caused by the vessel of this Contract and therefore the complaint could not be concluded as related to this Contract.

6.6.4.3 The Contractor was advised to ensure the regular travel routes for all project related vessels (including sand barges) were being strictly followed and all vessels should have regular maintenance to ensure that all Sand Barge functioning well.

6.6.4.4 The Contractor was advised to ensure to continue the provision of fugitive dust mitigation measures to barges loaded with filling material such as watering to sand filling material on sand barges to keep the surface of stockpile of filling material wet.

6.6.4.5 Photo record shows that watering equipment is provided on pelican barge loaded with sand for watering of sand filling material to keep the sand material wet.

6.6.5 As informed by the Contractor on 27 Dec 13. A complaint involves barges loaded with sand material without properly covered was blown to the inside of the residential area of Tuen Mun Pierhead Garden which caused disturbance to residence.

6.6.5.1 The air quality impact causing disturbance to residence near Tuen Mun Pierhead Garden was followed up and replied by Highway Department and reply was given to Oriental Daily Newspaper and it is noted that all project related vessels (including sand barges) are designated with a regular marine travel route to the site, however the regular travel route plan of this project does not specify the travel route passing through the at area at sea near Tuen Mun Pierhead Garden and with refer to photo record, Contractor would water the sand material to keep the sand material wet to prevent generation of fugitive dust.

6.6.5.2 With refer to available information provided, it cannot indicate that the water quality impact and air quality impact were caused by the vessel of this Contract and therefore the complaint could not be concluded as related to this Contract.

6.6.5.3 The Contractor was advised to ensure the regular travel routes for all project related vessels (including sand barges) were being strictly followed. The Contractor was advised to ensure to continue the provision of air quality mitigation measures to barges loaded with filling material such as sufficient watering to keep the surface of stockpile of filling material wet.

6.6.5.4 Photo record shows that watering equipment is provided on pelican barge loaded with sand for watering of sand filling material:

6.6.6 No notification of summons and successful prosecutions was received in the reporting period.

6.6.7 Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix N.

7 FUTURE KEY ISSUES

7.1 Construction Programme for the Coming Months

7.1.1 As informed by the Contractor, the major works for the Project in December 2013 and January 2014 will be:-

Marine-based Works

- Marine-base
- Cellular structure installation
- Connecting arc cell installation
- Laying geo-textile
- Sand blanket laying
- Sand filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Stone column installation
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Construction of temporary seawall
- Ground investigation
- Construction of conveyors for public fill
- Surcharge laying
- Construction of temporary assess from Portion D to Portion A
- Precast Yard for seawall blocks and culverts

Land-based Works

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Geo-textile fabrication at Works Area WA2
- Installed sand bag at Works Area WA2
- Silt curtain fabrication at Works Area WA4
- Maintenance of Temporary Marine Access at Works Area WA2

7.2 Key Issues for the Coming Month

7.2.1 Key issues to be considered in the coming months:-

- Site runoff should be properly collected and treated prior to discharge;
- Minimize loss of sediment from filling works;
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities;
- Exposed surfaces/soil stockpiles should be properly treated to avoid generation of silty surface run-off during rainstorm;
- Regular review and maintenance of wheel washing facilities provided at all site entrances/exits;
- Conduct regular inspection of various working machineries and vessels within works areas to avoid any dark smoke emission;
- Suppress dust generated from work processes with use of bagged cements, earth movements, excavation activities, exposed surfaces/soil stockpiles and haul road traffic;
- Quieter powered mechanical equipment should be used;
- Provision of proper and effective noise control measures for operating equipment and machinery on-site, such as erection of movable noise barriers or enclosure for noisy plants;
- Closely check and replace the sound insulation materials regularly;
- Better scheduling of construction works to minimize noise nuisance;
- Properly store and label oil drums and chemical containers placed on site;
- Proper chemicals, chemical wastes and wastes management;
- Maintenance works should be carried out within roofed, paved and confined areas;
- Collection and segregation of construction waste and general refuse on land and in the sea should be carried out properly and regularly; and
- Proper protection and regular inspection of existing trees, transplanted/retained trees.

7.3 Monitoring Schedule for the Coming Month

7.3.1 The tentative schedule for environmental monitoring in January 2013 is provided in Appendix F.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

8.1.1 The construction phase and EM&A programme of the Project commenced on 12 March 2012.

8.1.2 All 1-Hour TSP results were below the Action and Limit Level in the reporting month. Two (2) 24-hour TSP results recorded at AMS3A and AMS7 exceeded the Action Level in the reporting month. Investigation results showed that the Two (2) 24-hour TSP action level exceedances recorded at AMS3A and AMS7 were not related to project.

8.1.3 For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.

8.1.4 Three (3) Action Level Exceedances and two (2) Limit Level Exceedances were recorded at measured suspended solids (SS) values (in mg/L) in the reporting month. Investigation results shows that Action Level Exceedance recorded at SR10A on 6 Dec 13, IS(Mf)9 on 18 Dec 13 and Limit Level Exceedance recorded at IS8 on 20 Dec 13 were not related to project. Investigation results shows that the Action Level Exceedance recorded at SR5 and Limit Level Exceedance recorded at IS10 on 18 Dec 13 were related to project.

8.1.5 A total of fourteen dolphin sightings were recorded during the two surveys, five on 19 December 2013; six on 26 December 2013 and three sightings were made on 28 December 2013. No sightings were recorded on the 21 December 2013. Of the fourteen sightings, ten were “on effort” (which are all under favourable condition) and four were “opportunistic”. A total of sixty one individuals were sighted from the two impact dolphin surveys in the reporting period. Sighting details are summarised and plotted in Appendix K and Figure 5c, respectively.

8.1.6 Behaviour: Of the fourteen sightings made, three sightings were recorded as ‘multiple’ behavior (all as travelling and feeding); four sightings were recorded as feeding; four was recorded as travelling and one sighting was recorded as “unknown” and; two sightings were recorded as “milling”. The locations of sighting with different behaviour are mapped in Figure 5d

8.1.7 Environmental site inspection was carried out 4 times in December 2013. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

8.1.8 As informed by the Contractor on 5 Dec 13, one complaint was noted on 12 Nov regarding a barge moving through the southern channel. After investigation, the noise complaint was considered as non-project related

8.1.9 As informed by the Contractor, complaint received from Penta-Ocean – Gitanes Joint Venture (CV/2012/03) mentioned that the formation works of the Contaminated Mud Pit CMP1 to the South of the Brothers (CMP1 of SB) which has been completed in mid-August 2013 and the pit has been commissioned for receiving contaminated marine mud from other projects starting from 16 August 2013. However, it was recently observed that some of the project vessels of HY/2010/02 (photos taken on 20 Nov 2013 are attached) had berthed within the said pit and those anchorages would likely cause disruption to the underlying contaminated mud and thus induce unfavourable contamination impact to the surrounding marine environment. In this regard, they reminded the contractor to avoid berthing of their vessels within the boundary of CMP1 of SB thereafter for the sake of environmental concern. After investigation, the complaint was considered as non-project related

8.1.10 As informed by the Contractor on 12 Dec 13. A complaint involves the leakage of sand from barges causing water discoloration at sea near Tuen Mun Pierhead Garden and sand material without properly covered was blown to the inside of the residential area which caused disturbance to residence. With refer to available information provided and monitoring data recorded on 09 Dec 13, it cannot indicate that the water quality impact and air quality impact were caused by the vessel of this Contract and therefore the complaint could not be concluded as related to this Contract.

8.1.11 As informed by the Contractor on 27 Dec 13. A complaint involves barges loaded with sand material without properly covered was blown to the inside of the residential area of Tuen Mun Pierhead Garden which caused disturbance to residence. With refer to available information provided, it cannot indicate

that the water quality impact and air quality impact were caused by the vessel of this Contract and therefore the complaint could not be concluded as related to this Contract.

8.1.12 No notification of summons and successful prosecution was received in the reporting period.

8.2 Recommendations

8.2.1 According to the environmental site inspections performed in the reporting month, the following recommendations were provided:

Air Quality Impact

- All working plants and vessels on site should be regularly inspected and properly maintained to avoid dark smoke emission.
- All vehicles should be washed to remove any dusty materials before leaving the site.
- Haul roads should be sufficiently dampened to minimize fugitive dust generation.
- Wheel washing facilities should be properly maintained and reviewed to ensure properly functioning.
- Temporary exposed slopes and open stockpiles should be properly covered.
- Enclosure should be erected for cement debagging, batching and mixing operations.
- Water spraying should be provided to suppress fugitive dust for any dusty construction activity.

Construction Noise Impact

- Quieter powered mechanical equipment should be used as far as possible.
- Noisy operations should be oriented to a direction away from sensitive receivers as far as possible.
- Proper and effective noise control measures for operating equipment and machinery on-site should be provided, such as erection of movable noise barriers, enclosure for noisy plants or enhancement works to provide sufficient acoustic decoupling measure(s). Closely check and replace the sound insulation materials regularly
- Vessels and equipment operating should be checked regularly and properly maintained.
- Noise Emission Label (NEL) shall be affixed to the air compressor and hand-held breaker operating within works area.
- Acoustic decoupling measures should be properly implemented for all existing and incoming construction vessels with continuous and regularly checking to ensure effective implementation of acoustic decoupling measures.

Water Quality Impact

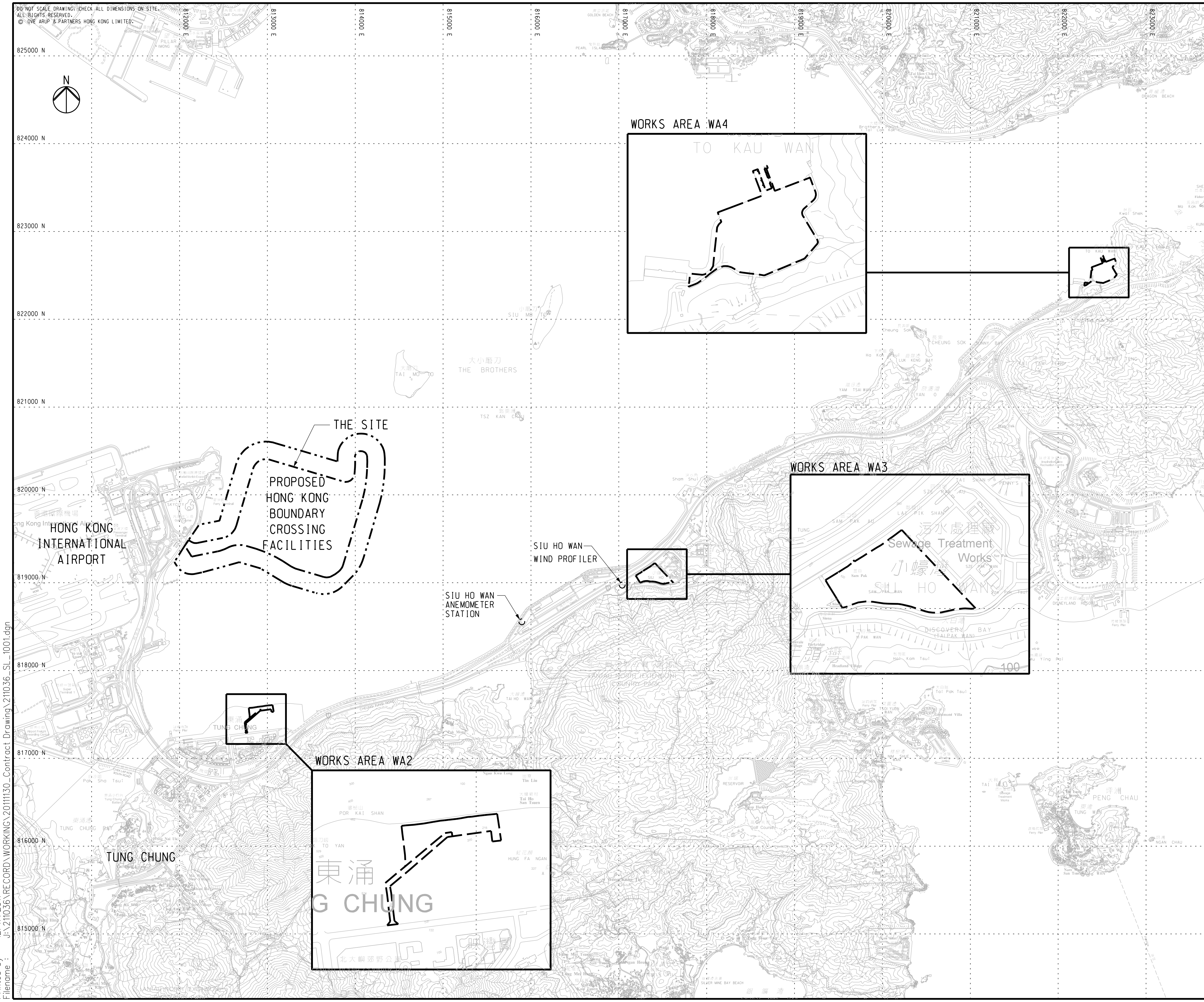
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities in order to make sure they are functioning effectively.
- Construction of seawall should be completed as early as possible.
- Regular inspect and review the loading process from barges to avoid splashing of material.
- Silt, debris and leaves accumulated at public drains, wheel washing bays and perimeter u-channels and desilting facilities should be cleaned up regularly.
- Silty effluent should be treated/ desilted before discharged. Untreated effluent should be prevented from entering public drain channel.
- Proper drainage channels/bunds should be provided at the site boundaries to collect/intercept the surface run-off from works areas.
- Exposed slopes and stockpiles should be covered up properly during rainstorm.

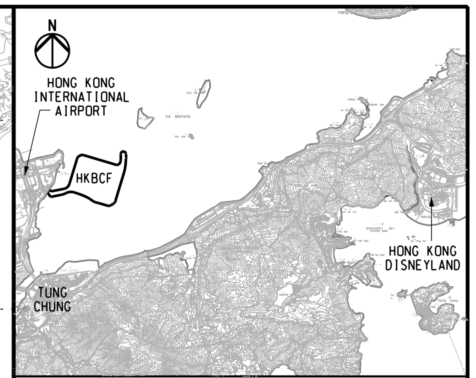
Chemical and Waste Management

- All types of wastes, both on land and floating in the sea, should be collected and sorted properly and disposed of timely and properly. They should be properly stored in designated areas within works areas temporarily.
- All chemical containers, batteries and oil drums should be properly stored and labelled.
- All plants and vehicles on site should be properly maintained to prevent oil leakage. Proper measures, like drip trays and/or bundings, should be provided for retaining leaked oil/chemical from plants.
- All kinds of maintenance works should be carried out within roofed, paved and confined areas.
- All drain holes of the drip trays utilized within works areas should be properly plugged to avoid any oil and chemical waste leakage.
- Oil stains on soil surface, accumulated oil mixture and empty chemical containers should be cleared and disposed of as chemical waste.
- Regular review should be conducted for working barges and patrol boats to ensure sufficient measures and spill control kits were provided on working barges and patrol boats to avoid any spreading of leaked oil/chemicals.

Landscape and Visual Impact

- All existing, retained/transplanted trees at the works areas should be properly fenced off and regularly inspected.





KEY PLAN

NOTES

1. ALL COORDINATES ARE RELATED TO HONG KONG 1980 GRID.
2. ALL LEVELS ARE IN METRES ABOVE HONG KONG PRINCIPAL DATUM (mPD).
3. REFER TO DRG NO. 211036/SL/1002 FOR THE DEFINITION OF SETTING OUT LINE (SOL) FOR THE HONG KONG BOUNDARY CROSSING FACILITIES (HKBCF) RECLAMATION SITE.
4. REFER TO DRG NO. 211036/SL/1004 FOR DETAILS OF SITE BOUNDARY.
5. FOR EXTENT OF SORTING FACILITIES AT FILL BANK AT TSEUNG KWAN O AREA 137 REFER TO DRG NO. 211036/SL/1015.

LEGEND

- SITE BOUNDARY
- SETTING OUT LINE (SOL)
- WORKS AREA BOUNDARY

Rev	Description	By	Date
-	FOR CONSTRUCTION	HYJL	11/11

Consultant

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Supported By :
- Ecosystems Ltd.
- EDA Marine Ltd.
- Geotechnical Consulting Group (Asia) Ltd.
- Hong Kong Cetacean Research Project
- InteliBuild Technyx Asia Limited
- Tony Gee and Partners LLP

Contract No. and Title:
Contract No. HY/2010/02
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities
- Reclamation Works

Drawing title
KEY PLAN

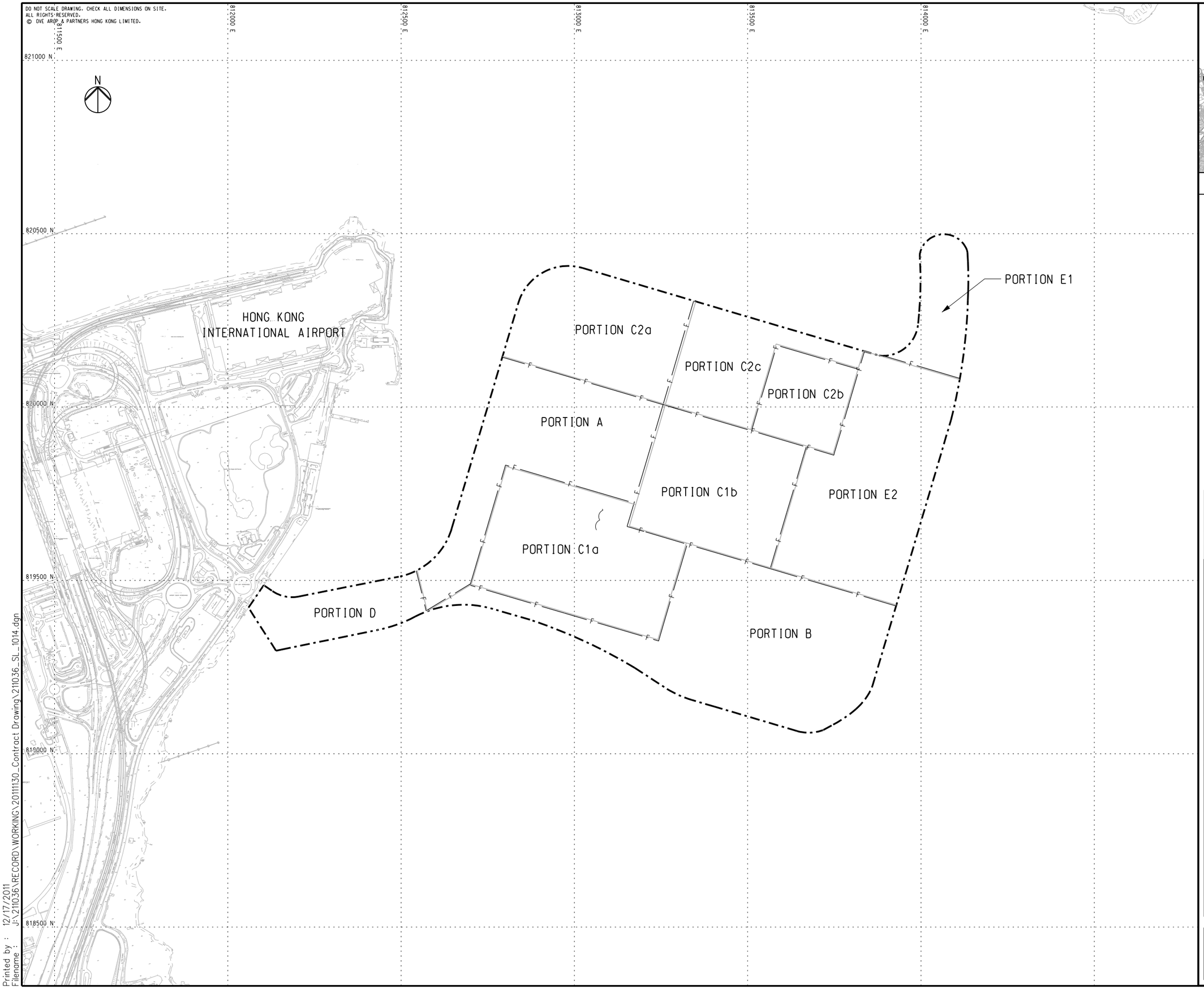
Drawing no. 211036/SL/1001 Rev. -

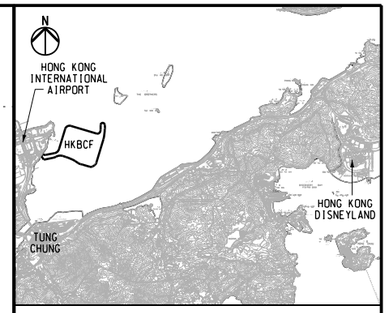
Drawn	Date	Checked	Approved
RL	11/09	KKY	DML

Scale 1:20000 @A1 1:40000 @A3 — Status WORKING

路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

Printed by : 12/17/2011
Filename : J:\211036\RECORD\WORKING\20111130_Contract Drawing\211036_SL_1001.dgn





KEY PLAN

NOTES

1. FOR LEGENDS AND NOTES FOR CHAIN LINK FENCE AND GATE REFER TO DRG NO. 211036/SL/1013.
2. THE ERECTION OF CHAIN LINK FENCE AND GATES SHALL BE COMPLETED BY THE HANDOVER DATE OF EACH PORTION OF SITE, OR AS INSTRUCTED BY THE ENGINEER.
3. FOR SETTING OUT COORDINATES OF DIFFERENT PORTIONS OF SITE REFER TO DRG NO. 211036/SL/1003.
4. ACCESS POINTS BETWEEN PORTIONS SHALL BE PROVIDED BY THE CONTRACTOR. AND THE LOCATIONS SHALL BE AGREED WITH THE ENGINEER ON SITE.
5. FOR HOARDING AND FENCE AT FILL BANK AT TSEUNG KWAN O AREA 137 REFER TO DRG NO. 211036/SL/1015.

LEGEND

- SETTING OUT LINE (SOL)
- WORKS AREA BOUNDARY
- PORTIONS BOUNDARY LINE

Rev	Description	By	Date
-	FOR CONSTRUCTION	HYJL	11/11

Consultant

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Supported By :
- Ecosystems Ltd.
- EDA Marine Ltd.
- Geotechnical Consulting Group (Asia) Ltd.
- Hong Kong Cetacean Research Project
- InteliBuild Technyx Asia Limited
- Tony Gee and Partners LLP

Contract No. and Title:
Contract No. HY/2010/02
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities
- Reclamation Works

Drawing title
WORKS AREA LAYOUT
AND HORADING PLAN
(SHEET 2 OF 3)

Drawing no.	Rev.
211036/SL/1014	-

Drawn	Date	Checked	Approved
RL	06/10	KKY	DML

Scale 1:5000 @A1 1:10000 @A3
Status WORKING

路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

Printed by : 12/17/2011
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ISO A3 297mm x 420mm

Checked:

Project Management Initials:

809000 E
810000 E
811000 E
812000 E
813000 E
814000 E
815000 E

820000 N
819000 N
818000 N
817000 N
816000 N

PROPOSED HONG KONG BOUNDARY CROSSING FACILITIES

AMS7

AMS6

AMS3A
NMS3A

AMS2
NMS2

CHEK LAP KOK

HONG KONG INTERNATIONAL AIRPORT

SCENIC HILL

Pak Sha Tsui

TUNG CHUNG

LEGEND

AMS1 AIR MONITORING STATIONS

NMS1 NOISE MONITORING STATIONS

WIND STATION

AECOM

Figure 2

IMPACT AIR QUALITY AND NOISE
MONITORING STATIONS AND WIND STATION

HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

Project No.: 60249820 Date: MAY 2012

Plot File by: Lammd 03/05/2012
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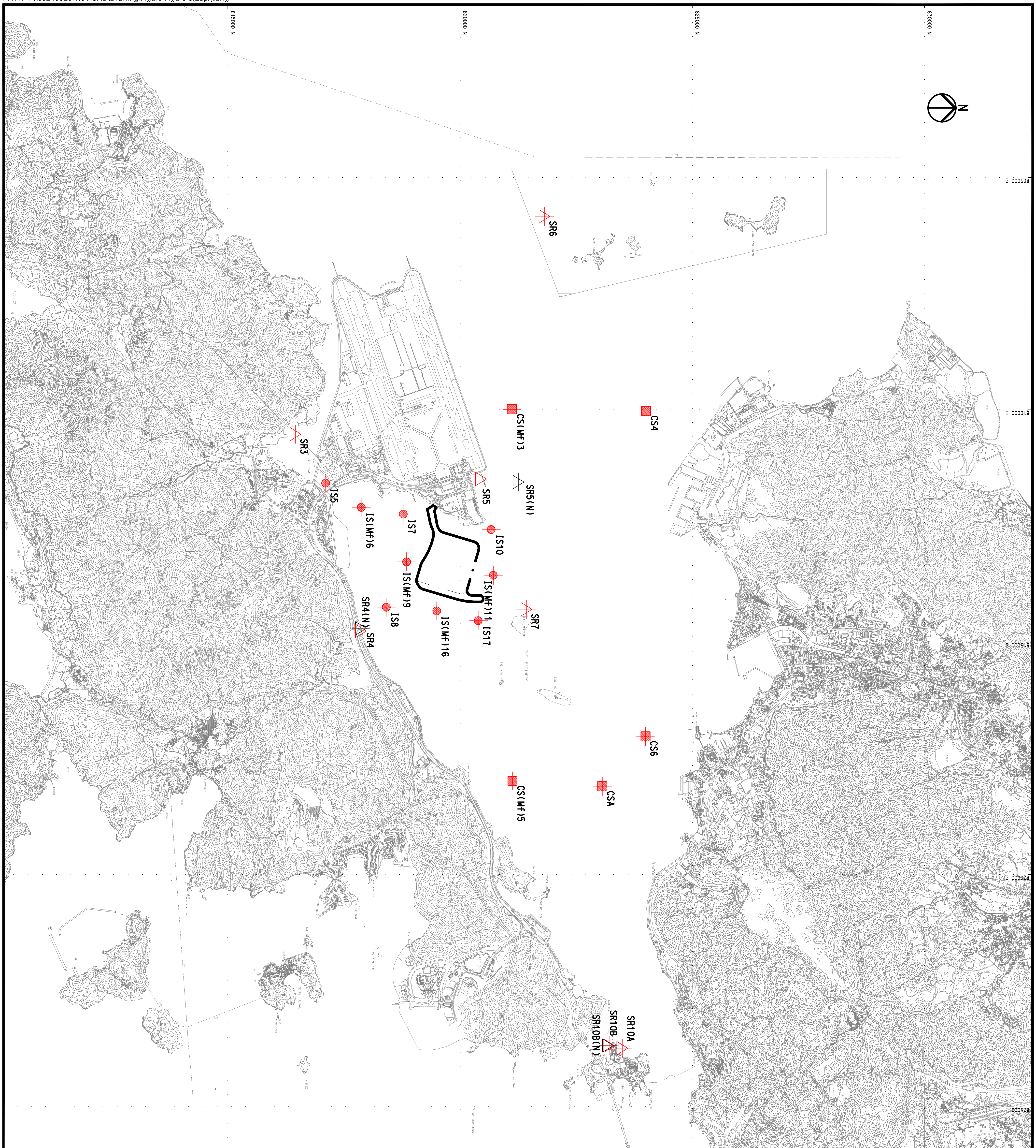


LEGEND

- IS — IMPACT STATIONS
- CS — CONTROL / FAR FIELD STATIONS
- SR — SENSITIVE RECEIVERS STATIONS
- SR — SENSITIVE RECEIVERS STATIONS (RELOCATED)

SETTING OUT SCHEDULE

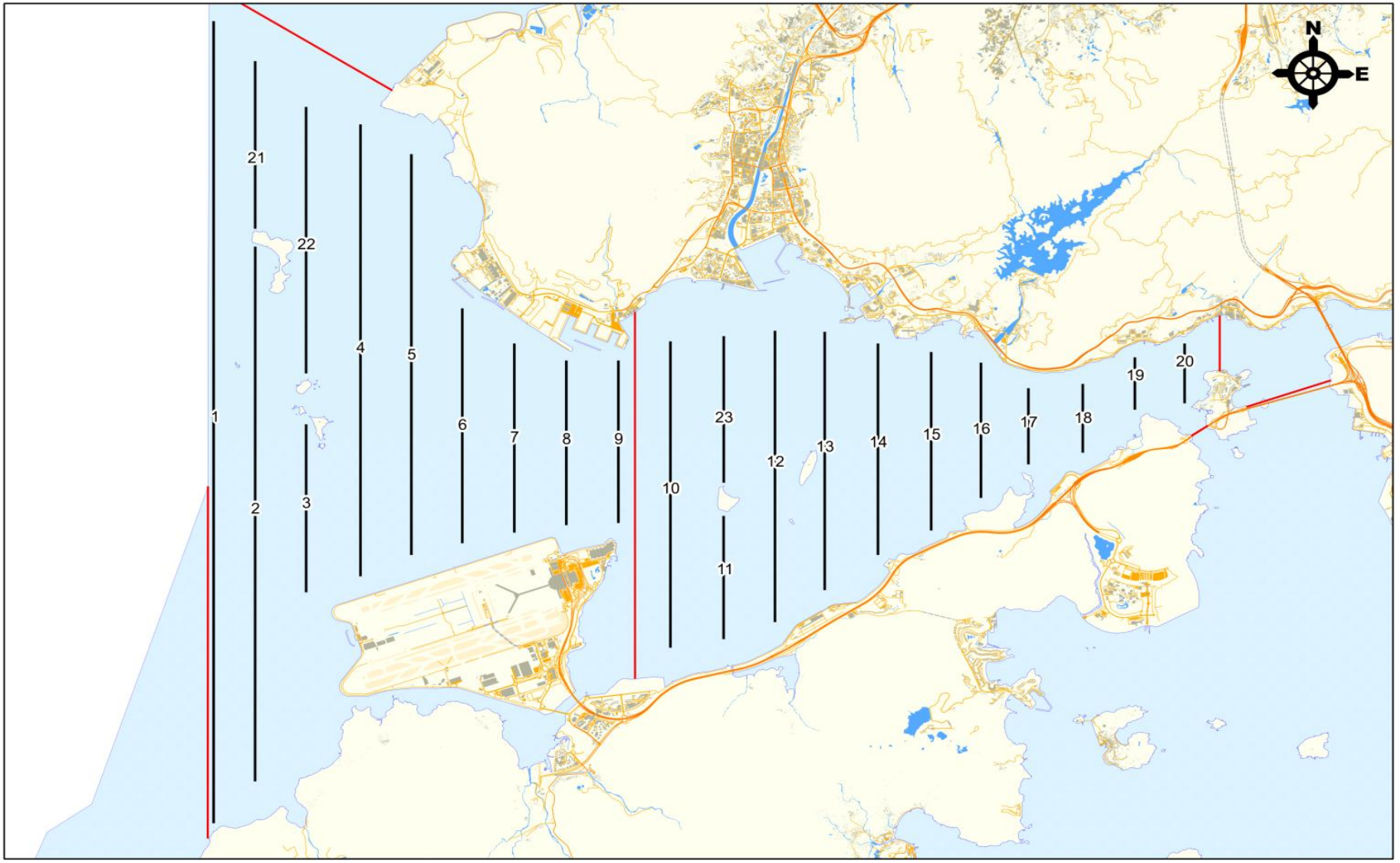
MONITORING STATIONS	CO-ORDINATES EASTING	CO-ORDINATES NORTHING
IS5	811579	817106
IS(Mf)6	812101	817873
IS7	812244	818777
IS8	814251	818412
IS(Mf)9	813273	818850
IS10	812577	820670
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
SR3	810525	816456
SR4(N)	814705	817859
SR5	811489	820455
SR5(N)	811555	821258
SR6	805837	821818
SR7	814293	821431
SR10A	823741	823495
SR10B(N)	823683	823187
CS(Mf)3	809989	821117
CS(Mf)5	817990	821129
CS4	810025	824004
CS6	817028	823992
CSA	818103	823064

HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: APR 2012

IMPACT WATER QUALITY MONITORING STATIONS

AECOM

Figure 3



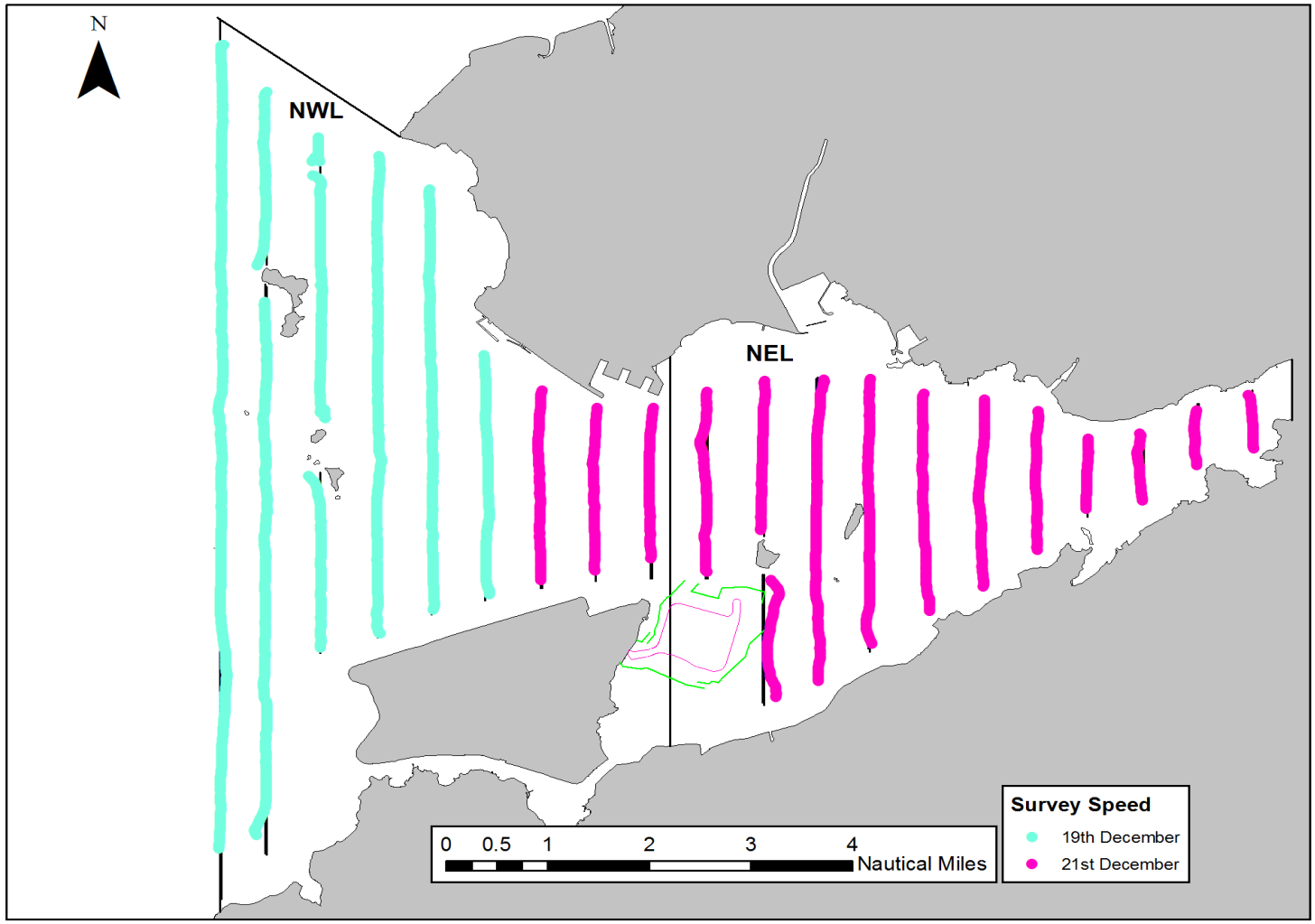
***Remark: Transect 10 is now 3.6km in length due to the HKBCF construction site. The total transect length for both NEL and NWL combined is 111km.**

HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: January 13

Impact Dolphin Monitoring
Line Transect Layout Map

AECOM

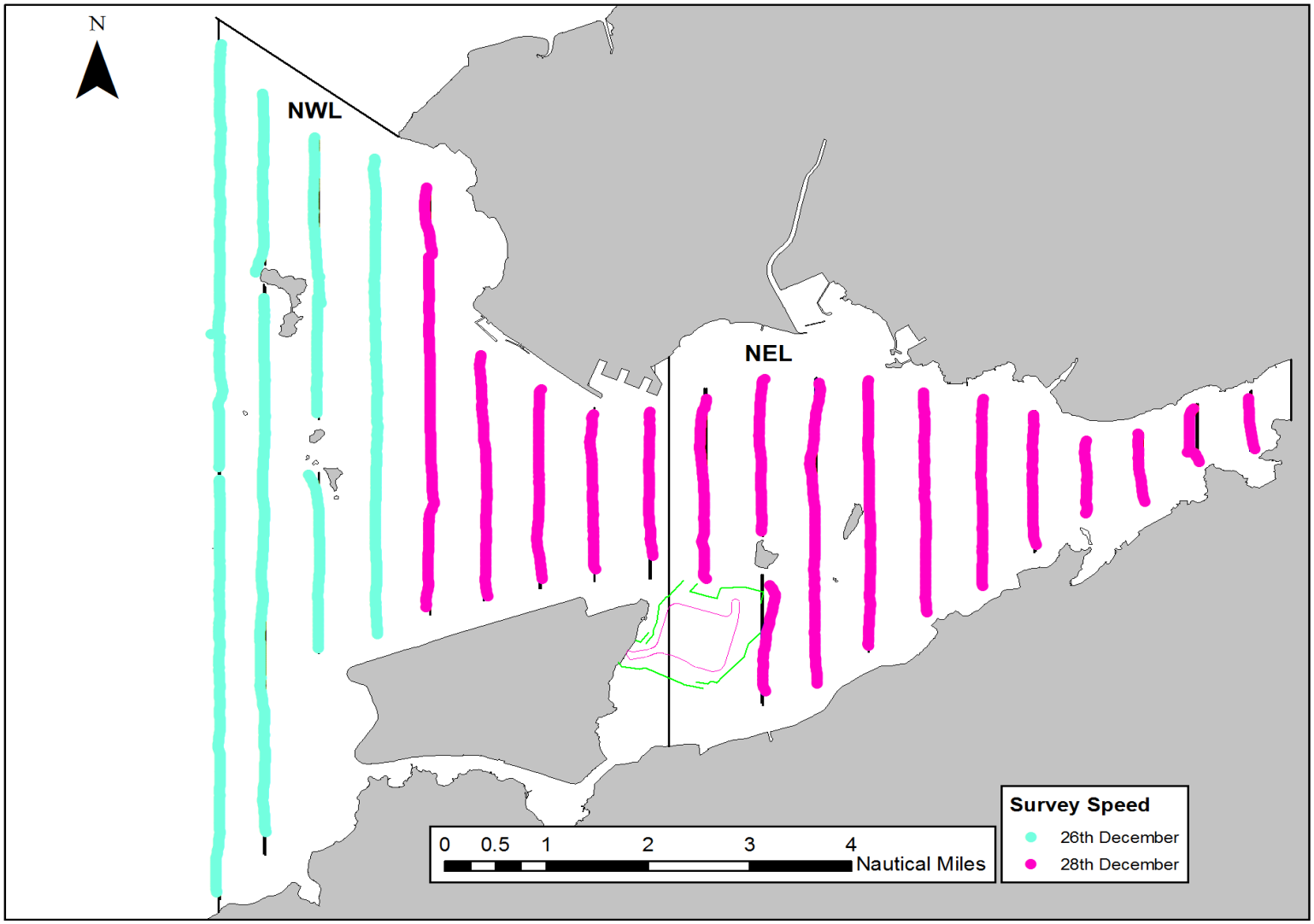
Figure 4



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: January 2014

Impact Dolphin Monitoring Survey
Efforts on 19 and 21 December 2013

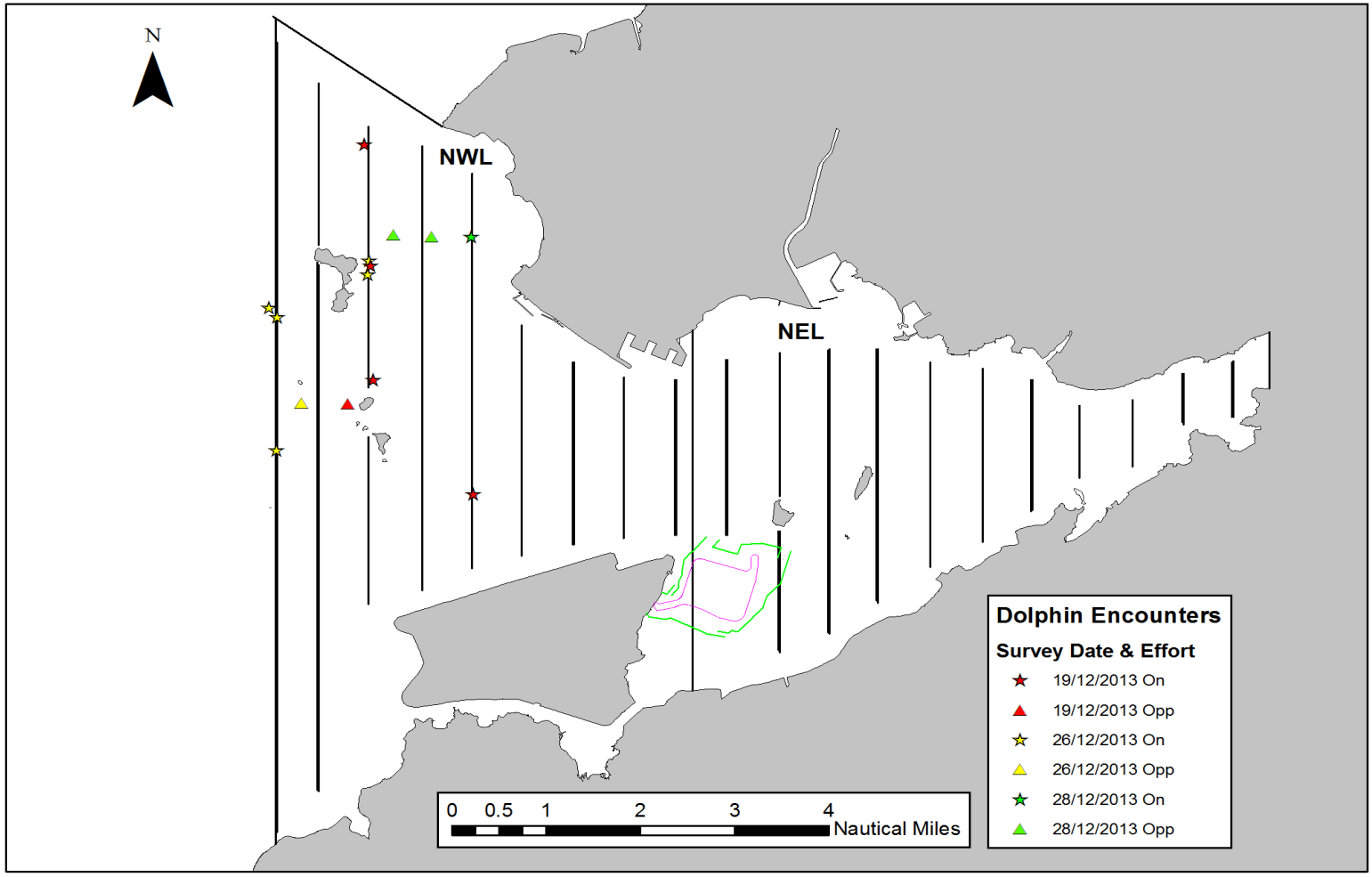
Figure 5a



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: January 2014

Impact Dolphin Monitoring Survey
Efforts on 26 and 28 December 2013

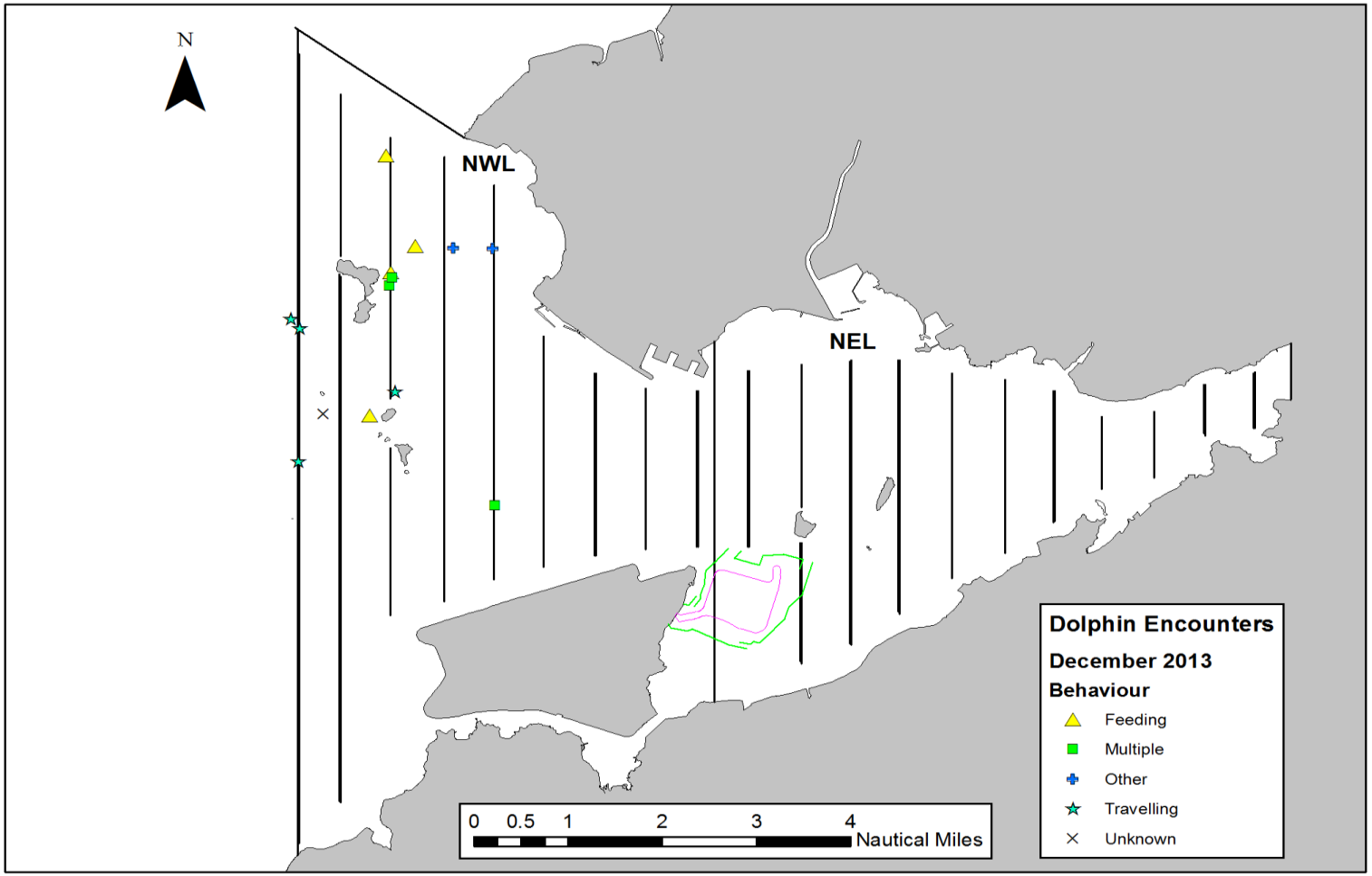
Figure 5b



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: January 2014

Impact Dolphin Monitoring Survey
Sightings in December 2013

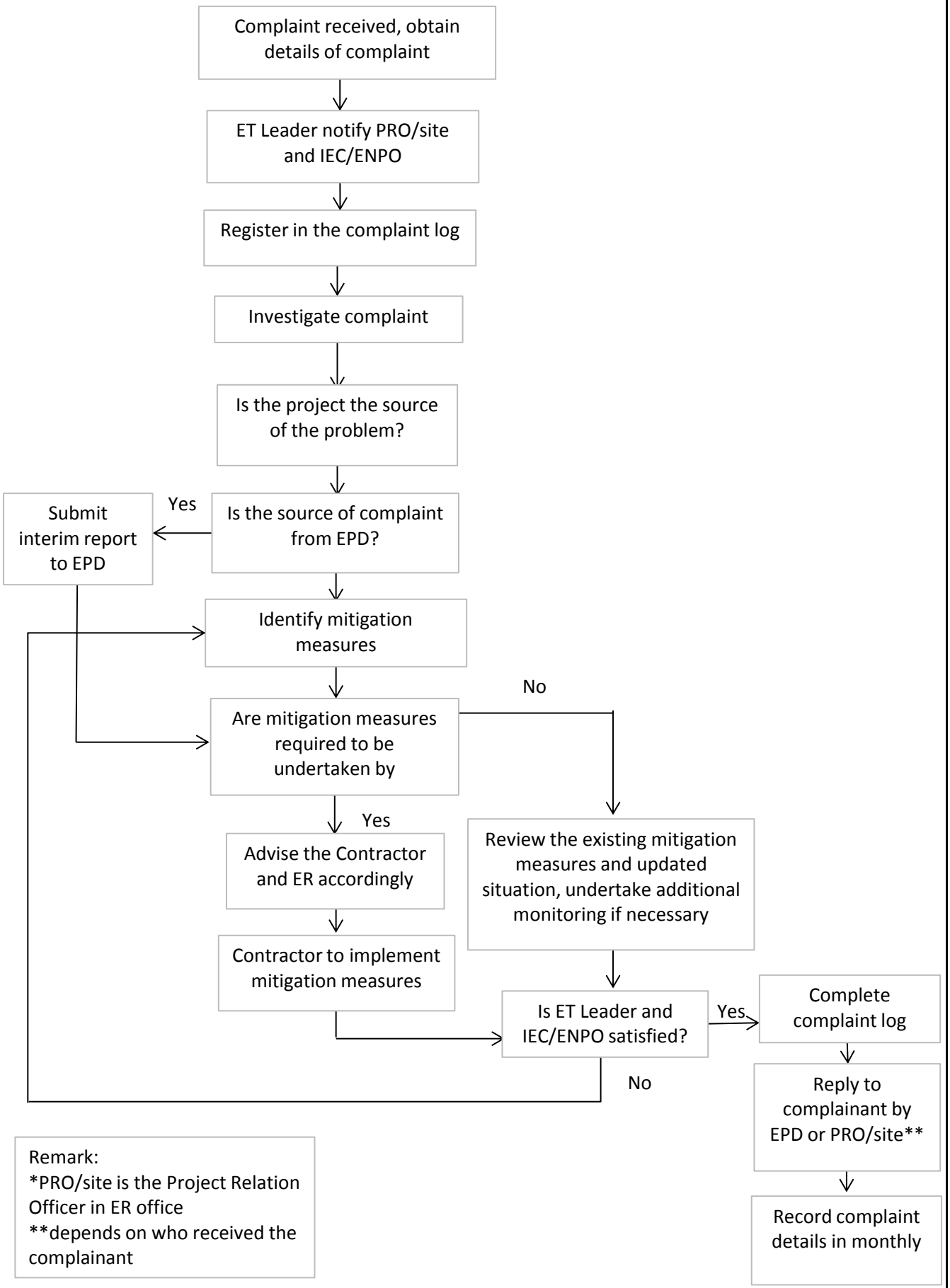
Figure 5c



HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: 60249820 Date: January 2014

Impact Dolphin Monitoring Survey
Behaviour Map in December 2013

Figure 5d

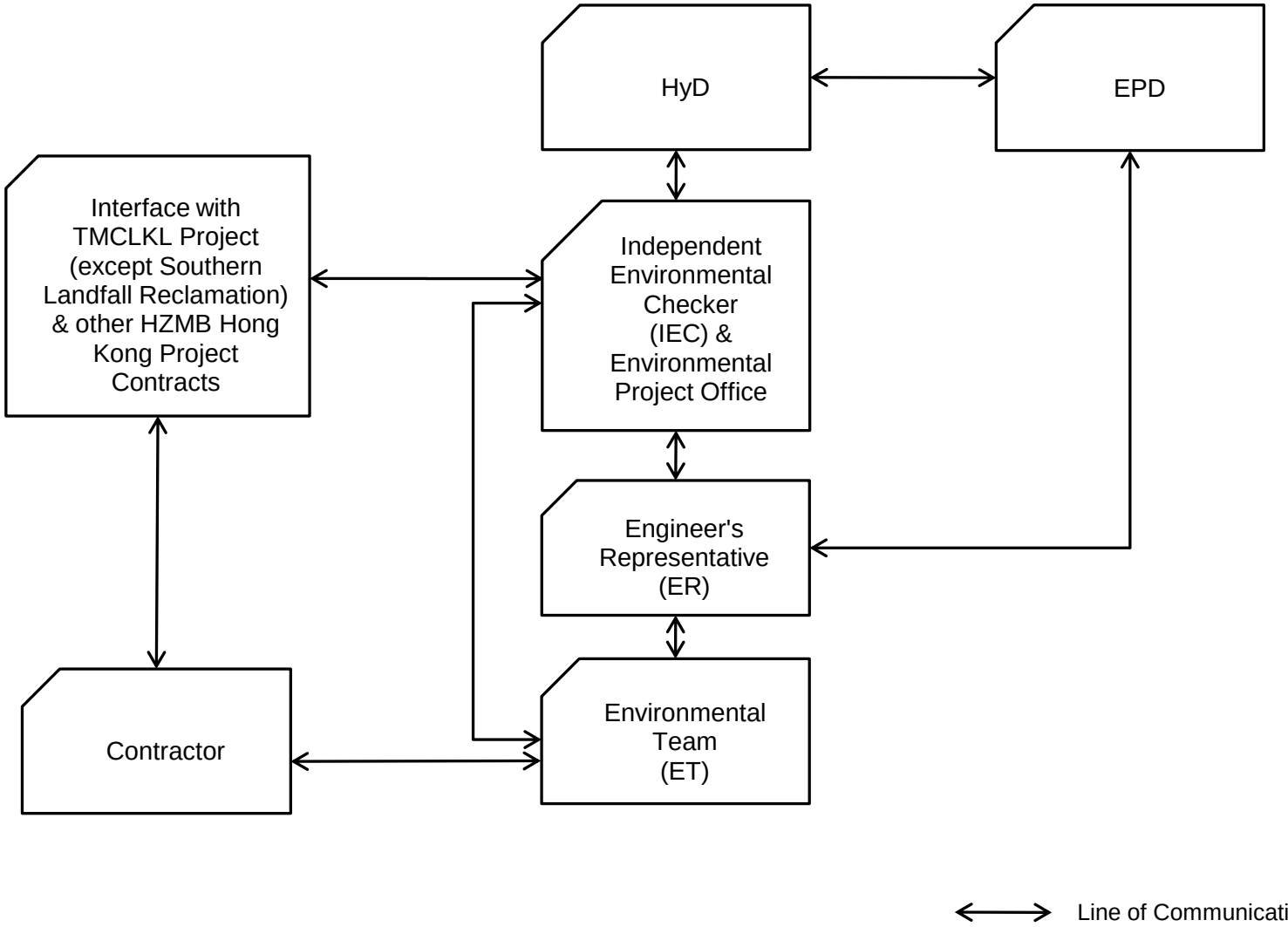


HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

AECOM

Environmental Complaint Handling Procedure

Project No.: 60249820 **Date: July 2012** **Figure 6**



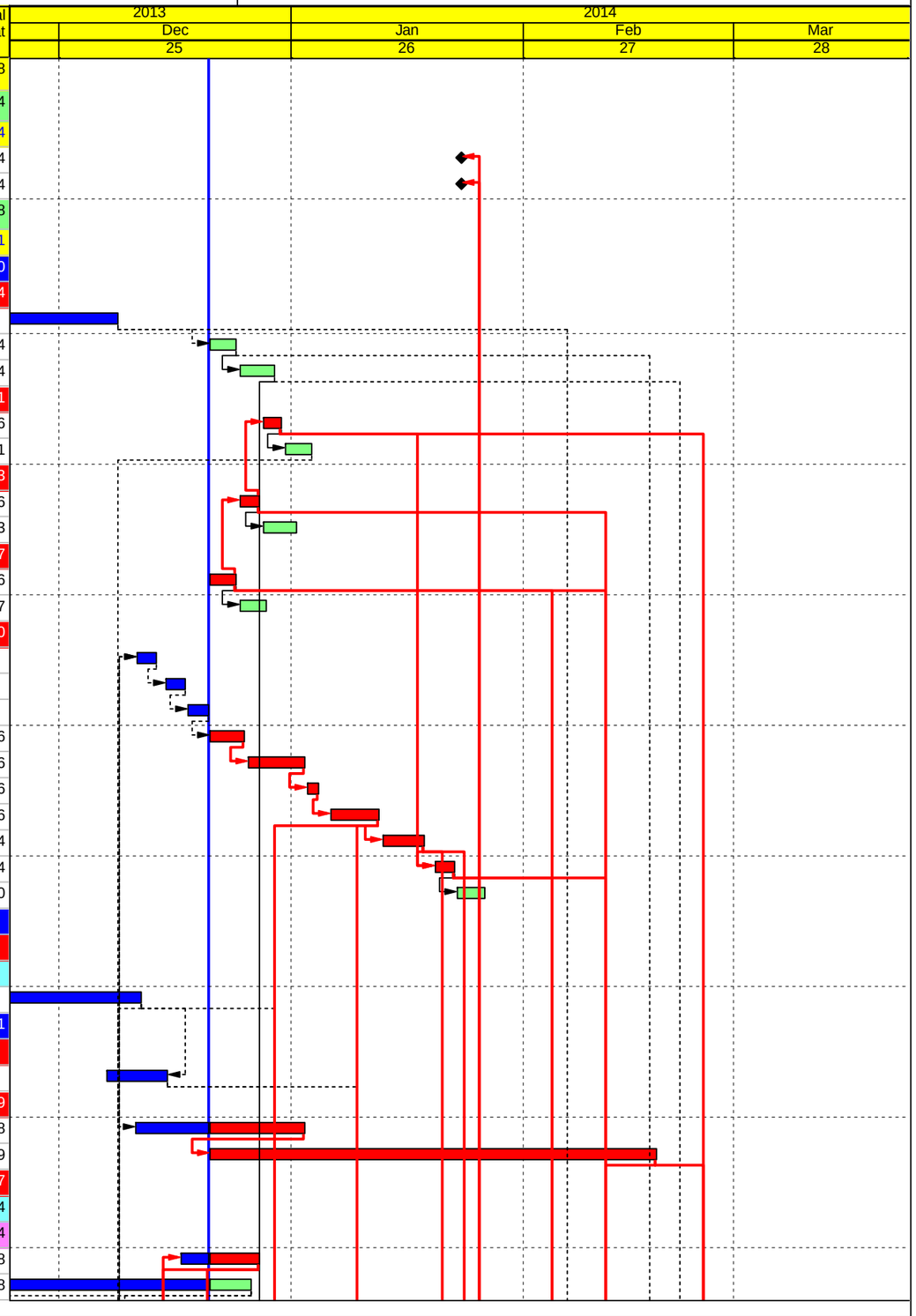
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
--RECLAMATION WORKS
Project No.: 60249820 Date: April 2013

Project Organisation for Environmental Works

AECOM

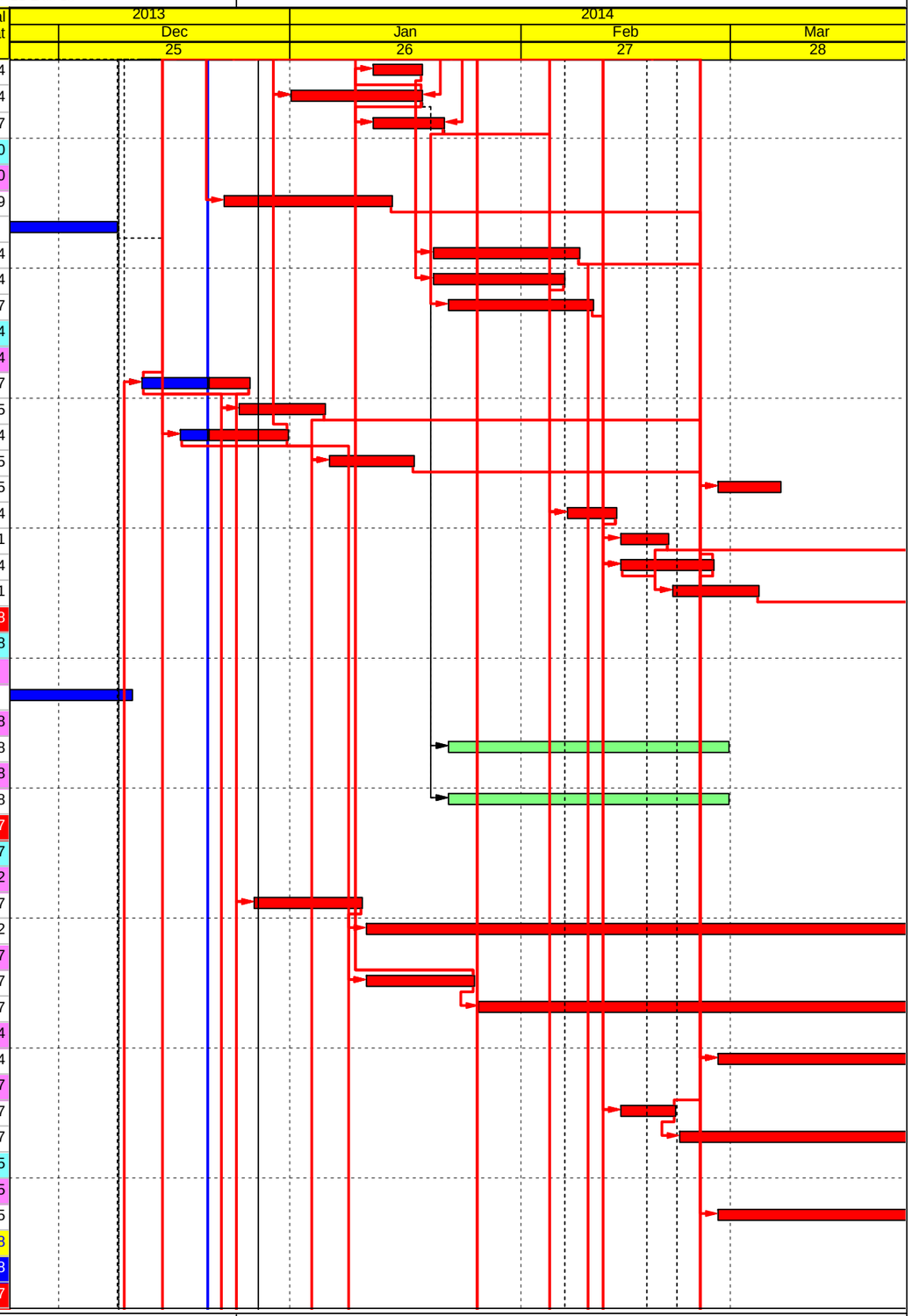
Appendix A

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
25th Monthly Progress Report Status as on 21 Dec 2013		1048	30-Nov-11 A	12-Oct-14	938
Contract Key Dates		0	23-Jan-14	23-Jan-14	-34
Vacation of Site		0	23-Jan-14	23-Jan-14	-34
G1290	Works Area WA2 (Zone B)	0		23-Jan-14*	-34
G1320	Works Area WA4 (Zone A)	0		23-Jan-14*	-34
Work Zone, as defined in PS Clause 1.03(6)		671	11-Dec-12 A	12-Oct-14	938
Portion A		285	10-Oct-13 A	21-Jul-14	1021
Optimizing Rubble Mound Seawalls		67	16-Nov-13 A	26-Jan-14	30
Seawall Portion A at C118 - C121, 170m		41	16-Nov-13 A	29-Dec-13	14
RFA1-008	PA at C121 - C118 Rockfill (Cat1) for platform upto +2.5mPD 15,810m3	8	16-Nov-13 A	09-Dec-13 A	
RFA1-009	PA at C121 - C118 Rockfill (Cat1) upto +6.0mPD & geotextile laying 6,460m3	3	21-Dec-13	24-Dec-13	14
RFA1-010	PA at C121 - C118 UnderLayer (Cat0) 0mPD 10,200m3	5	25-Dec-13	29-Dec-13	14
Seawall Portion A at C122 - C124, 130m		7	28-Dec-13	03-Jan-14	51
RFA2-009	PA at C122 - C124 Rockfill (Cat1) upto +6.0mPD & geotextile laying 4,940m3	3	28-Dec-13	30-Dec-13	-86
RFA2-010	PA at C122 - C124 UnderLayer 0mPD 7,800m3	4	31-Dec-13	03-Jan-14	51
Seawall Portion A at C125 - C128, 170m		8	25-Dec-13	01-Jan-14	43
RFA3-009	PA at C125 - C128 Rockfill (Cat1) upto +6.0mPD & geotextile laying 6,460m3	3	25-Dec-13	27-Dec-13	-86
RFA3-010	PA at C125 - C128 UnderLayer 0mPD 10,200m3	5	28-Dec-13	01-Jan-14	43
Seawall Portion A at C129 - C131, 130m		7	21-Dec-13	28-Dec-13	47
RFA4-009	PA at C129 - C131 Rockfill (Cat1) upto +6.0mPD & geotextile laying 4,940m3	3	21-Dec-13	24-Dec-13	-86
RFA4-010	PA at C129 - C131 UnderLayer 0mPD 7,800m3	4	25-Dec-13	28-Dec-13	47
Seawall Portion A at C132 - C134, 115m		43	11-Dec-13 A	26-Jan-14	20
RFA5-001	PA at C132 - C134 Geotextile Type 1 above stone blanket 9,730m2	2	11-Dec-13 A	14-Dec-13 A	
RFA5-002	PA at C132 - C134 sound survey	2	15-Dec-13 A	18-Dec-13 A	
RFA5-003	PA at C132 - C134 settlement markers install	2	18-Dec-13 A	21-Dec-13 A	
RFA5-004	PA at C132 - C134 Filter Layer (Cat0 Fill 1m) under the Rubble Mound 6,900m3	4	21-Dec-13	25-Dec-13	-106
RFA5-005	PA at C132 - C134 Rockfill (Cat1) upto -3.0mPD 15,295m3	8	26-Dec-13	02-Jan-14	-106
RFA5-006	PA at C132 - C134 Sand Blanket behind upto -4.0mPD	2	03-Jan-14	04-Jan-14	-106
RFA5-007	PA at C132 - C134 Rockfill (Cat1) , filter layer & geotextile +2.5mPD 12,765m3	7	06-Jan-14	12-Jan-14	-106
RFA5-008	PA at C132 - C134 Rockfill (Cat1) for platform upto +2.5mPD 10,695m3	6	13-Jan-14	18-Jan-14	-104
RFA5-009	PA at C132 - C134 Rockfill (Cat1) upto +6.0mPD & geotextile laying 4370m3	3	20-Jan-14	22-Jan-14	-104
RFA5-010	PA at C132 - C134 UnderLayer 0mPD 7,800m3	4	23-Jan-14	26-Jan-14	20
Reclamation		40	14-Oct-13 A	12-Dec-13 A	
Portion A Sand Blanket		40	14-Oct-13 A	12-Dec-13 A	
Land Portion A		40	14-Oct-13 A	12-Dec-13 A	
SABRA0	Sand Blankets 163,971m3 PA Edge Area C130 to C134 4,000m3/day	40	14-Oct-13 A	12-Dec-13 A	
Portion A		285	10-Oct-13 A	21-Jul-14	1021
Temporary Bund		7	07-Dec-13 A	15-Dec-13 A	
TB0050	Construction of Southern side Temp Seawall to C134 ((3+19)*4/2)=44m2x300m 13,200r	7	07-Dec-13 A	15-Dec-13 A	
Temporary Pier		70	11-Dec-13 A	18-Feb-14	-119
TP0010	Construction of Temporary Piers	30	11-Dec-13 A	02-Jan-14	-118
TP0020	Construction of Conveyors for public fill	60	21-Dec-13	18-Feb-14	-119
Reclamation		123	05-Nov-13 A	07-Mar-14	1157
Portion A Marine Fill upto +2.5mPD		72	05-Nov-13 A	21-Jan-14	1114
Land Portion A		72	05-Nov-13 A	21-Jan-14	1114
MFA0-0	Marine Fill Type A Sand 100% at PA Edge Area at C118 - C121 281,136m3 30,000m3/d	10	17-Dec-13 A	27-Dec-13	-18
MFA0-0	Marine Fill Type A Sand 100% at PA Main Area 330,000m3 30,000m3/day PCB West	11	05-Nov-13 A	26-Dec-13	1138



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
MFA0-(	Marine Fill Type A Sand 100% at PA Edge Area at C122 - C126 210,010m3 30,000m3/d	7	12-Jan-14	18-Jan-14	-64
MFA0-(	Marine Fill Type A Sand 100% at PA Edge Area at C127 - C134 265,005m3 16,000m3/d	17	01-Jan-14	18-Jan-14	-114
MFA0-(	Marine Fill Type A Sand 100% at PA 265,005m3 30,000m3/day other areas	9	12-Jan-14	21-Jan-14	-107
Portion A Land Band Drain		81	12-Nov-13 A	10-Feb-14	-40
Land Portion A		81	12-Nov-13 A	10-Feb-14	-40
VBDA0-	Vertical Band Drains 20,000nrs by land plant at PA C118 - C121 Other areas 900nrs/day	22	23-Dec-13	14-Jan-14	-19
VBDA0-	Vertical Band Drains 35,000nrs by land plant at PA PCB West 1,500nrs/day	24	12-Nov-13 A	09-Dec-13 A	
VBDA0-	Vertical Band Drains 59,137nrs by land plant at PA C122 - C126 Edge 3000nrs/day	15	20-Jan-14	08-Feb-14	-64
VBDA0-	Vertical Band Drains 18,333nrs by land plant at PA 1500nrs/day CLP substation	13	20-Jan-14	06-Feb-14	-114
VBDA0-	Vertical Band Drains 29,137nrs by land plant at PA Other areas 3000nrs/day	15	22-Jan-14	10-Feb-14	-107
Portion A Earthwork Fill upto +5.5mPD		86	12-Dec-13 A	07-Mar-14	-44
Land Portion A		86	12-Dec-13 A	07-Mar-14	-44
EFA0-0	Earthwork Fill Type D Sand 100% at PA (PCB East) 283,185m3 30,000m3/day	12	12-Dec-13 A	26-Dec-13	-107
EFA0-0	Compaction at PA (PCB East)	12	25-Dec-13	05-Jan-14	-85
EFA0-0	Earthwork Fill Type D Sand 100% at PA (PCB West) 283,185m3 30,000m3/day	12	17-Dec-13 A	31-Dec-13	-114
EFA0-0	Compaction at PA (PCB West)	12	06-Jan-14	17-Jan-14	-85
EFA0-0	Earthwork Fill Type D Sand 100% at PA at C122 - C126 Edge Area 146,046m3 20,000r	8	27-Feb-14	07-Mar-14	-55
EFA0-0	Earthwork Fill Type D Sand 100% at PA at C127 - C134 Edge Area 120,000m3 30,000r	7	07-Feb-14	13-Feb-14	-114
EFA0-0	Compaction at PA at C127 - C134 Edge Area CLP substation	7	14-Feb-14	20-Feb-14	-41
EFA0-0	Earthwork Fill Type D Sand 100% at PA other area 335,949m3 30,000m3/day	12	14-Feb-14	26-Feb-14	-114
EFA0-1	Compaction at PA at C127 - C134 other area	12	21-Feb-14	04-Mar-14	-41
Portion A Instrumentation		115	10-Oct-13 A	28-Feb-14	18
Portion A Instrumentation - SD		115	10-Oct-13 A	28-Feb-14	18
SD-24 C123		30	10-Oct-13 A	11-Dec-13 A	
CTSD-(	Installation of SD-24 (C123) PA	30	10-Oct-13 A	11-Dec-13 A	
SD-25 C128		30	22-Jan-14	28-Feb-14	18
CTSD-(	Installation of SD-25 (C128) PA	30	22-Jan-14	28-Feb-14	18
SD-26 C133		30	22-Jan-14	28-Feb-14	18
CTSD-(	Installation of SD-26 (C133) PA	30	22-Jan-14	28-Feb-14	18
Portion A Surcharge		207	27-Dec-13	21-Jul-14	-87
Main Reclamation Areas		207	27-Dec-13	21-Jul-14	-87
PCB East		165	27-Dec-13	09-Jun-14	-62
SURA0	Sand Surcharge Laying upto +11.5mPD & compaction upto +8.5mPD at PA PCB East 22	14	27-Dec-13	10-Jan-14	-107
SURA0	Surcharge Period at PA PCB East 6mth (8-2-1=5mths)	150	11-Jan-14	09-Jun-14	-62
PCB West		165	11-Jan-14	24-Jun-14	-67
SURA0	Sand Surcharge Laying upto +11.5mPD & compaction upto +8.5mPD at PA PCB West 2	14	11-Jan-14	25-Jan-14	-107
SURA0	Surcharge Period at PA PCB West 6mth (8-2-1=5mths)	150	26-Jan-14	24-Jun-14	-67
at C122 - C126 other than PCB Area		30	27-Feb-14	31-Mar-14	-114
SURA0	Surcharge Laying upto +11.5mPD & compaction upto +8.5mPD on Main Area at PA 589,	30	27-Feb-14	31-Mar-14	-114
at C127 - C134 for Power Substation Area		158	14-Feb-14	21-Jul-14	-87
SURA0	Surcharge Laying upto +11.5mPD & compaction upto +8.5mPD on Main Area at PA CLP	7	14-Feb-14	21-Feb-14	-77
SURA0	Surcharge Period on Main Area at PA CLP substation 6mth (8-2-1=5mths)	150	22-Feb-14	21-Jul-14	-87
Edge Areas		60	27-Feb-14	27-Apr-14	-65
at C134 - C126		60	27-Feb-14	27-Apr-14	-65
SUEA0-	Pause Period on Edge Area at PA 2mths	60	27-Feb-14	27-Apr-14	-65
Portion B, C & E		551	10-Apr-13 A	12-Oct-14	938
Portion B, C & E		551	10-Apr-13 A	12-Oct-14	938
Seawall		292	14-Jun-13 A	30-Apr-14	1027



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

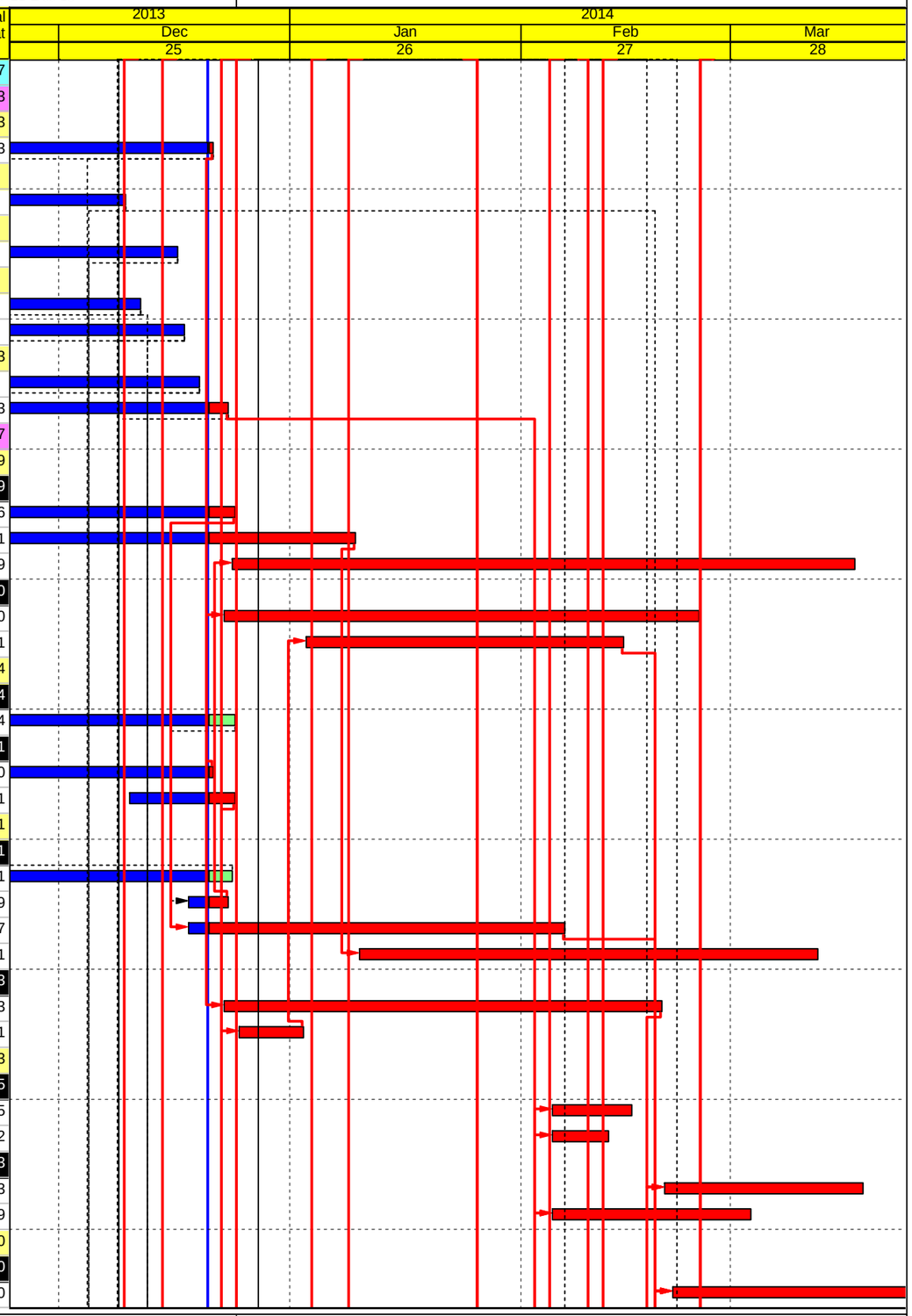
Contract No. HY/2010/02 Hong Kong - Zhuhai - Macao Bridge

Hong Kong Boundary Corssing Facilities - Reclamation Works

EMandA Monthly Report Programme

Data Date :21-Dec-13

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Ground Treatment		292	14-Jun-13 A	30-Apr-14	1027
Stone Columns for Rubble Mound Seawall by Marine Plant		180	14-Jun-13 A	23-Dec-13	-13
Portion C2a C113 - C117 5Cells 3,258Nos FTB16		106	14-Jun-13 A	21-Dec-13	-63
SC0A-	PC2A Stone Columns outermost C113 - C117 5cells 1,684nrs (19nrs/day) FTB17 from 1	106	14-Jun-13 A	21-Dec-13	-63
Portion B K13 - K15 3Cells 1,104Nos. AP4		87	22-Aug-13 A	10-Dec-13 A	
SC0B-	PB Stone Columns K013 - K015 3cells 712nrs/1,104nrs (10nrs/day) FTB-AP4 from 21Ju	87	22-Aug-13 A	10-Dec-13 A	
Portion B K16 - K20 5cells 1,950Nos FTB20		66	10-Oct-13 A	17-Dec-13 A	
SC0B-	PB Stone Columns K016 - K020 4cells 1,246nrs/1,950nrs (19nrs/day) FTB20	66	10-Oct-13 A	17-Dec-13 A	
Portion B K21 - K23 3Cells 1,144Nos. AP1		134	14-Jun-13 A	18-Dec-13 A	
SC0B-	PB Stone Columns K021 - K023 3cells 505nrs/1144nrs from 14Jun to 15Aug2013	103	14-Jun-13 A	12-Dec-13 A	
SC0B-	PB Stone Columns outermost K021 - K023 3cells 496nrs/1144nrs (19nrs/day) from 16Au	26	08-Oct-13 A	18-Dec-13 A	
Portion B K24 - K27 4Cells 1,568Nos. AP2 & FTB19		180	14-Jun-13 A	23-Dec-13	-13
SC0B-	PB Stone Columns K024 - K027 5Cells 850nrs/1568nrs FTB-AP2 from 14Jun to 15Aug2	103	14-Jun-13 A	20-Dec-13 A	
SC0B-	PB Stone Columns outermost K024 - K027 5Cells 718nrs/1568nrs (19nrs/day) from 16A	38	15-Nov-13 A	23-Dec-13	-13
Stone Columns Outside cellular Structures by Marine Plant		215	05-Sep-13 A	30-Apr-14	1027
Seawall Portion B at K028 - K044 17cells 3478nrs		146	07-Oct-13 A	17-Mar-14	-99
Beside of front cellular walls K028-K044 1,739nrs		146	07-Oct-13 A	17-Mar-14	-99
SCOI	PB Stone Columns beside K028 - K044 17cells 259nrs (10nrs/day) FTB-AP1	26	07-Oct-13 A	24-Dec-13	-26
SCOI	PB Stone Columns beside K028 - K044 17cells 740nrs (10nrs/day) FTB-AP2	74	07-Nov-13 A	09-Jan-14	-41
SCOI	PB Stone Columns beside K028 - K044 17cells 740nrs (10nrs/day) FTB-AP3	74	24-Dec-13*	17-Mar-14	-99
Outermost of front cellular wall K028-K044 1,739nrs		56	23-Dec-13	24-Feb-14	-80
SCOI	PB Stone Columns outermost K028 - K044 17cells 1064nrs (19nrs/day) FTB19	56	23-Dec-13	24-Feb-14	-80
SCOI	PB Stone Columns outermost K028 - K044 17cells 675nrs (19nrs/day) FTB18	36	03-Jan-14	14-Feb-14	-71
Seawall Portion B at K045 - K051 7cells 1432nrs		102	05-Sep-13 A	24-Dec-13	24
Beside of front cellular walls K045-K051 716nrs		36	09-Oct-13 A	24-Dec-13	24
SCOI	PB Stone Columns beside K045 - K051 7cells 358nrs (10nrs/day) FTB-AP3	36	09-Oct-13 A	24-Dec-13	24
Outermost of front cellular walls K045-K051 716nrs		102	05-Sep-13 A	24-Dec-13	-71
SCOI	PB Stone Columns outermost K045 - K051 7cells 475nrs (19nrs/day) FTB19	29	05-Sep-13 A	21-Dec-13	-80
SCOI	PB Stone Columns outermost K045 - K051 7cells 241nrs (19nrs/day) FTB18	13	10-Dec-13 A	24-Dec-13	-71
Seawall Portion E2 at K052 - C062 11cells 2,252nrs		165	12-Sep-13 A	12-Mar-14	1071
Beside of front cellular walls K052-C062 1,126nrs		165	12-Sep-13 A	12-Mar-14	1071
SCOI	PE2 Stone Columns beside K052 - K062 11cells 220nrs (10nrs/day) FTB-AP2	24	12-Sep-13 A	24-Dec-13	1141
SCOI	PE2 Stone Columns beside K052 - K062 11cells 50nrs (10nrs/day) FTB-AP3	5	18-Dec-13 A	23-Dec-13	-99
SCOI	PE2 Stone Columns beside K052 - K062 11cells 428nrs (10nrs/day) FTB-AP1	43	18-Dec-13 A	06-Feb-14	-47
SCOI	PE2 Stone Columns beside K052 - K062 11cells 428nrs (10nrs/day) FTB-AP2 (+110nrs)	54	10-Jan-14	12-Mar-14	-1
Outermost of front cellular wall K052-C062 1,126nrs		51	23-Dec-13	19-Feb-14	-63
SCOI	PE2 Stone Columns outermost K052 - K062 11cells 955nrs (19nrs/day) FTB17	51	23-Dec-13	19-Feb-14	-63
SCOI	PE2 Stone Columns outermost K052 - K062 11cells 171nrs (19nrs/day) FTB18	9	25-Dec-13	02-Jan-14	-71
Seawall Portion E1 at C068 - C091 24cells 6,428nrs		39	05-Feb-14	18-Mar-14	-63
Beside of front cellular walls C068-C091 3,146nrs		11	05-Feb-14	15-Feb-14	-35
SCOI	PE1 Stone Columns beside C083 - C076 8cells 110nrs FTB-AP2 before arc construction	11	05-Feb-14	15-Feb-14	-35
SCOI	PE1 Stone Columns beside C091 - C084 8cells 80nrs FTB-AP4 before arc construction	8	05-Feb-14	12-Feb-14	-32
Outermost of front cellular wall C068-C091 3,282nrs		39	05-Feb-14	18-Mar-14	-63
SCOI	PE1 Stone Columns outermost C084 - C077 8cells 475nrs (19nrs/day) FTB17 before ar	25	20-Feb-14	18-Mar-14	-63
SCOI	PE1 Stone Columns outermost C091 - C085 7cells 475nrs (19nrs/day) FTB19 before ar	25	05-Feb-14	03-Mar-14	-49
Seawall Portion C at C103 - C112 10cells @197nrs/cell 1970nrs		63	21-Feb-14	30-Apr-14	-60
Beside of front cellular walls C103-C112 985nrs		63	21-Feb-14	30-Apr-14	-60
SCOI	PC2a Stone Columns beside C112 - C103 10cells 630nrs (10nrs/day) FTB-AP1	63	21-Feb-14	30-Apr-14	-60



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

25th Monthly Progress Report Status as on 21 Dec 2013

China Harbour Engineering Co., Ltd

Contract No. HY/2010/02 Hong Kong - Zhuhai - Macao Bridge

Hong Kong Boundary Corssing Facilities - Reclamation Works

EMandA Monthly Report Programme

Data Date :21-Dec-13

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SCO(	PC2a Stone Columns beside C112 - C103 10cells 355nrs (10nrs/day) FTB-AP4 (+80nrs	44	21-Feb-14	10-Apr-14	-41
Outermost of front cellular walls C103-C112 985nrs		52	21-Feb-14	18-Apr-14	-49
SCO(	PC2a Stone Columns outermost C112 - C103 10cells 985nrs (19nrs/day) FTB18	52	21-Feb-14	18-Apr-14	-49
Stone Columns Inside cells by Land Plant 2,640nrs		156	27-Sep-13 A	19-Mar-14	-46
Seawall Portion B at K028 - K051 24cells 1,920nrs		156	27-Sep-13 A	19-Mar-14	-46
SCIB0	PB Stone Columns inside cells & 2rows K028 - K040 13cells 1,040nrs (8nrs/day/plant x 2	65	27-Sep-13 A	14-Jan-14	-46
SCIB0	PB Stone Columns inside cells & 2rows K041 - K051 11cells 880nrs (8nrs/day/plant x 2pl	55	14-Jan-14	19-Mar-14	-46
Cellular Structures		254	11-Jul-13 A	16-Apr-14	-69
Cellular Main Cells 89cells		100	16-Oct-13 A	04-Feb-14	-49
Full Guide Frames Method 89cells		100	16-Oct-13 A	04-Feb-14	-49
Portion C & E C112 to C063 50cells		100	16-Oct-13 A	04-Feb-14	-49
CSE1	PE1 Cellular Structure C080, C082, C086, C089, C085, C063, C77 & C064 8cells Type_	33	16-Oct-13 A	19-Dec-13 A	
CSE1	PE1 Cellular Structure C076, C073, C070, C067, C075 & C072 6cells Type_C 26050m3	33	06-Nov-13 A	24-Dec-13	-41
CSE1	PE1 Cellular Structure C074, C069, C071 & C068 4cells Type_C 16,717m3	33	27-Dec-13	04-Feb-14	-49
Connecting Arcs		254	11-Jul-13 A	16-Apr-14	-69
Portion B between K028 to K051 24arcs		140	11-Jul-13 A	28-Dec-13	-60
CA00E	PB Connecting Arc structure K028 - K040 11pair arcs Type_C 22,117m3 3day/pair	76	11-Jul-13 A	11-Dec-13 A	
CA00E	PB Final Backfill Cellular Cells K028 - K040 Type C	22	14-Sep-13 A	21-Dec-13	-112
CA00E	PB Connecting Arc structure K041 - K051 11pair arcs Type_C 23,144m3 3day/pair	33	10-Oct-13 A	25-Dec-13	-87
CA00E	PB Final Backfill cellular cells K041 - K051 Type C	30	06-Nov-13 A	28-Dec-13	-60
Portion C2a between C112 to C103 9arcs		37	08-Jan-14	21-Feb-14	-60
CAC2(	PC2a Connecting Arc structure C112-C107 5pair arcs Type_C 16,956m3 3days/pair	20	08-Jan-14	29-Jan-14	-86
CAC2(	PC2a Final backfill cellular cells C112-C107 5arcs Type_C 19,500m3	20	14-Jan-14	09-Feb-14	-58
CAC2(	PC2a Connecting Arc structure C106-C103 4pair arcs Type_C 14,356m3 4days/pair	16	29-Jan-14	20-Feb-14	-86
CAC2(	PC2a Final backfill cellular cells C106-C103 Type_C 13,161m3	16	04-Feb-14	21-Feb-14	-60
Portion C2c between C103 to C091 12arcs		51	20-Feb-14	16-Apr-14	-69
CAC2(	PC2c Connecting Arc structure C102 to C091 12pair arcs Type_C 44,356m3 4ays/pair	48	20-Feb-14	13-Apr-14	-86
CAC2(	PC2c Final backfill cellular cells C102 to C091 Type_C 40,669m3	48	23-Feb-14	16-Apr-14	-69
Portion E2 between K051 to C067 16arcs		39	25-Dec-13	09-Feb-14	-8
CAE2-	PE2 Connecting Arc structure K052 to C062 11pair arcs Type_C 25,709m3 3days/pair	33	25-Dec-13	29-Jan-14	-87
CAE2-	PE2 Final backfill cellular cells K052 to C062 Type C	33	31-Dec-13	09-Feb-14	-8
Capping Beams		96	21-Dec-13	08-Apr-14	-112
Portion B between K028 to K040 Capping Beams		96	21-Dec-13	08-Apr-14	-112
CB025	PB Capping Beams structure K028 - K040 13cells	52	21-Dec-13*	19-Feb-14	-112
CB025	PB Capping Beams structure K041 - K051 11cells	44	20-Feb-14	08-Apr-14	-112
Optimizing Rubble Mound Seawalls		75	07-Dec-13 A	01-Mar-14	74
Seawall Portion C2a at C117 - C113		75	07-Dec-13 A	01-Mar-14	74
RFC2a-	PC2a at C117 - C113 Geotextile Type 1 above stone blanket 17,800m2	2	07-Dec-13 A	09-Dec-13 A	
RFC2a-	PC2a at C117 - C113 sound survey	2	10-Dec-13 A	14-Dec-13 A	
RFC2a-	PC2a at C117 - C113 settlement markers install	2	14-Dec-13 A	17-Dec-13 A	
RFC2a-	PC2a at C117 - C113 Filter Layer (Cat0 Fill 1m) under the Rubble Mound 23,430m3	6	30-Dec-13	04-Jan-14	14
RFC2a-	PC2a at C117 - C113 Rockfill (Cat1) upto -3.0mPD 27,930m3	14	06-Jan-14	20-Jan-14	14
RFC2a-	PC2a at C117 - C113 Sand Blanket behind upto -4.0mPD	2	21-Jan-14	22-Jan-14	14
RFC2a-	PC2a at C117 - C113 Rockfill (Cat1), filter layer & geotextile +2.5mPD 21,060m3	12	23-Jan-14	08-Feb-14	14
RFC2a-	PC2a at C117 - C113 Rockfill (Cat1) for platform upto +2.5mPD 19,530m3	10	09-Feb-14	19-Feb-14	34
RFC2a-	PC2a at C117 - C113 Rockfill (Cat1 Fill) upto +6.0mPD & geotextile laying 7,980m3	4	20-Feb-14	23-Feb-14	57
RFC2a-	PC2a at C117 - C113 UnderLayer (0mPD 12,600m3	6	24-Feb-14	01-Mar-14	74
Seawall Portion B at K013 - K017		50	07-Dec-13 A	04-Feb-14	15

Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

25th Monthly Progress Report Status as on 21 Dec 2013

China Harbour Engineering Co., Ltd

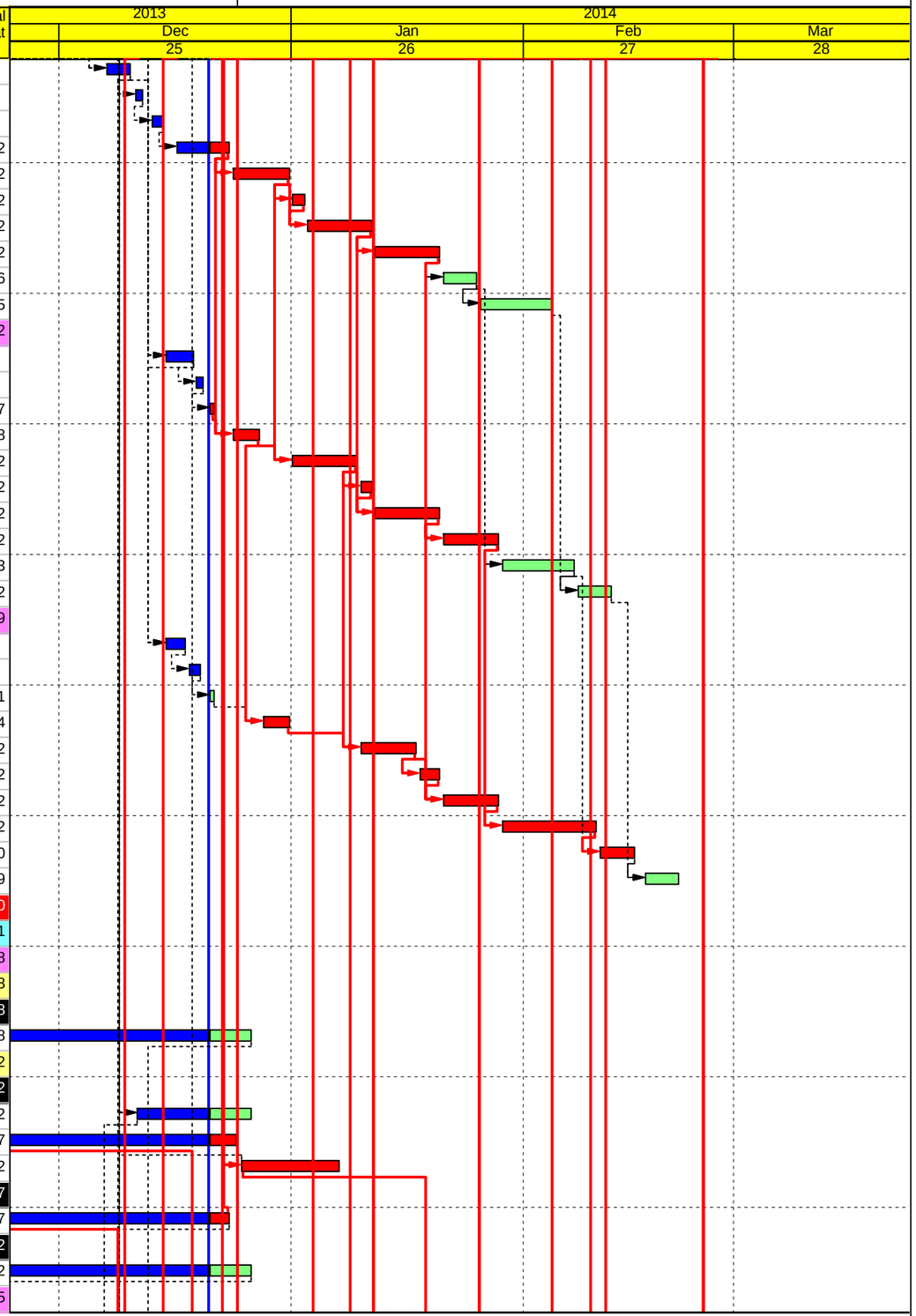
Contract No. HY/2010/02 Hong Kong - Zhuhai - Macao Bridge

Hong Kong Boundary Corssing Facilities - Reclamation Works

EMandA Monthly Report Programme

Data Date :21-Dec-13

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
RFB1-C	PB at K013 - K017 Geotextile Type 1 above stone blanket 17,800m2	2	07-Dec-13 A	10-Dec-13 A	
RFB1-C	PB at K013 - K017 sound survey	1	11-Dec-13 A	12-Dec-13 A	
RFB1-C	PB at K013 - K017 settlement markers install	1	13-Dec-13 A	15-Dec-13 A	
RFB1-C	PB at K013 - K017 Filter Layer (Cat0 Fill 1m) under the Rubble Mound 8830m3	4	16-Dec-13 A	23-Dec-13	-12
RFB1-C	PB at K013 - K017 Rockfill (Cat1) upto -3.0mPD 6,660m3	8	24-Dec-13	31-Dec-13	-12
RFB1-C	PB at K013 - K017 Sand Blanket behind upto -4.0mPD	2	01-Jan-14	02-Jan-14	-12
RFB1-C	PB at K013 - K017 Rockfill (Cat1) , filter layer & geotextile +2.5mPD 5,040m3	8	03-Jan-14	11-Jan-14	-12
RFB1-C	PB at K013 - K017 Rockfill (Cat1) platform upto +2.5mPD 4,680m3	8	12-Jan-14	20-Jan-14	-12
RFB1-C	PB at K013 - K017 Rockfill (Cat1 Fill) upto +6.0mPD & geotextile laying 1,620m3	5	21-Jan-14	25-Jan-14	6
RFB1-C	PB at K013 - K017 UnderLayer 0mPD	5	26-Jan-14	04-Feb-14	15
Seawall Portion B at K018 - K022		52	15-Dec-13 A	12-Feb-14	12
RFB2-C	PB at K018 - K022 Geotextile Type 1 above stone blanket 17,800m2	2	15-Dec-13 A	19-Dec-13 A	
RFB2-C	PB at K018 - K022 sound survey	1	19-Dec-13 A	20-Dec-13 A	
RFB2-C	PB at K018 - K022 settlement markers install	1	21-Dec-13	21-Dec-13	-7
RFB2-C	PB at K018 - K022 Filter Layer (Cat0 Fill 1m) under the Rubble Mound 8835m3	4	24-Dec-13	27-Dec-13	-8
RFB2-C	PB at K018 - K022 Rockfill (Cat1) upto -3.0mPD 6660m3	8	01-Jan-14	09-Jan-14	-12
RFB2-C	PB at K018 - K022 Sand Blanket behind upto -4.0mPD	2	10-Jan-14	11-Jan-14	-12
RFB2-C	PB at K018 - K022 Rockfill (Cat1) , filter layer & geotextile +2.5mPD 5040m3	8	12-Jan-14	20-Jan-14	-12
RFB2-C	PB at K018 - K022 Rockfill (Cat1) for platform upto +2.5mPD 4680m3	8	21-Jan-14	28-Jan-14	-12
RFB2-C	PB at K018 - K022 Rockfill (Cat1) upto +6.0mPD & geotextile laying 1620m3	5	29-Jan-14	07-Feb-14	3
RFB2-C	PB at K018 - K022 UnderLayer 0mPD	5	08-Feb-14	12-Feb-14	12
Seawall Portion B at K023 - K027		60	15-Dec-13 A	21-Feb-14	9
RFB3-C	PB at K023 - K027 Geotextile Type 1 above stone blanket 17,800m2	2	15-Dec-13 A	18-Dec-13 A	
RFB3-C	PB at K023 - K027 sound survey	1	18-Dec-13 A	20-Dec-13 A	
RFB3-C	PB at K023 - K027 settlement markers install	1	21-Dec-13	21-Dec-13	1
RFB3-C	PB at K023 - K027 Filter Layer (Cat0 Fill 1m) under the Rubble Mound 8835m3	4	28-Dec-13	31-Dec-13	-4
RFB3-C	PB at K023 - K027 Rockfill (Cat1) upto -3.0mPD 6660m3	8	10-Jan-14	17-Jan-14	-12
RFB3-C	PB at K023 - K027 Sand Blanket behind upto -4.0mPD	2	18-Jan-14	20-Jan-14	-12
RFB3-C	PB at K023 - K027 Rockfill (Cat1) , filter layer & geotextile +2.5mPD 5040m3	8	21-Jan-14	28-Jan-14	-12
RFB3-C	PB at K023 - K027 Rockfill (Cat1) for platform upto +2.5mPD 4680m3	8	29-Jan-14	10-Feb-14	-12
RFB3-C	PB at K023 - K027 Rockfill (Cat1) upto +6.0mPD & geotextile laying 1620m3	5	11-Feb-14	15-Feb-14	0
RFB3-C	PB at K023 - K027 UnderLayer 0mPD	5	17-Feb-14	21-Feb-14	9
Reclamation		349	10-Apr-13 A	24-Mar-14	1140
Ground Treatment		348	10-Apr-13 A	23-Mar-14	1141
Geotextile		252	10-Apr-13 A	07-Jan-14	1128
Existing Seabed Below -5mPD		157	10-Apr-13 A	26-Dec-13	1138
Land Portion C2b		157	10-Apr-13 A	26-Dec-13	1138
GER(	PC2b Geotextile for sand blanket	157	10-Apr-13 A	26-Dec-13	1138
Existing Seabed above -5mPD		113	07-Sep-13 A	07-Jan-14	62
Land Portion B		85	07-Oct-13 A	07-Jan-14	62
GERI	PB Geotextile for sand blanket at K013 - K027	13	11-Dec-13 A	26-Dec-13	72
GERI	PB Geotextile for sand blanket at K028 - K040	12	07-Oct-13 A	24-Dec-13	-67
GERI	PB Geotextile for sand blanket at K041 - K051	12	25-Dec-13	07-Jan-14	-2
Land Portion C1a		20	07-Sep-13 A	23-Dec-13	-77
GER(	PC1a Geotextile for sand blanket	20	07-Sep-13 A	23-Dec-13*	-77
Land Portion C1b		15	10-Oct-13 A	26-Dec-13	72
GER(	PC1b Geotextile for sand blanket East	15	10-Oct-13 A	26-Dec-13	72
Sand Blankets		222	08-Jul-13 A	08-Mar-14	1075



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

25th Monthly Progress Report Status as on 21 Dec 2013

China Harbour Engineering Co., Ltd

Contract No. HY/2010/02 Hong Kong - Zhuhai - Macao Bridge

Hong Kong Boundary Corssing Facilities - Reclamation Works

EMandA Monthly Report Programme

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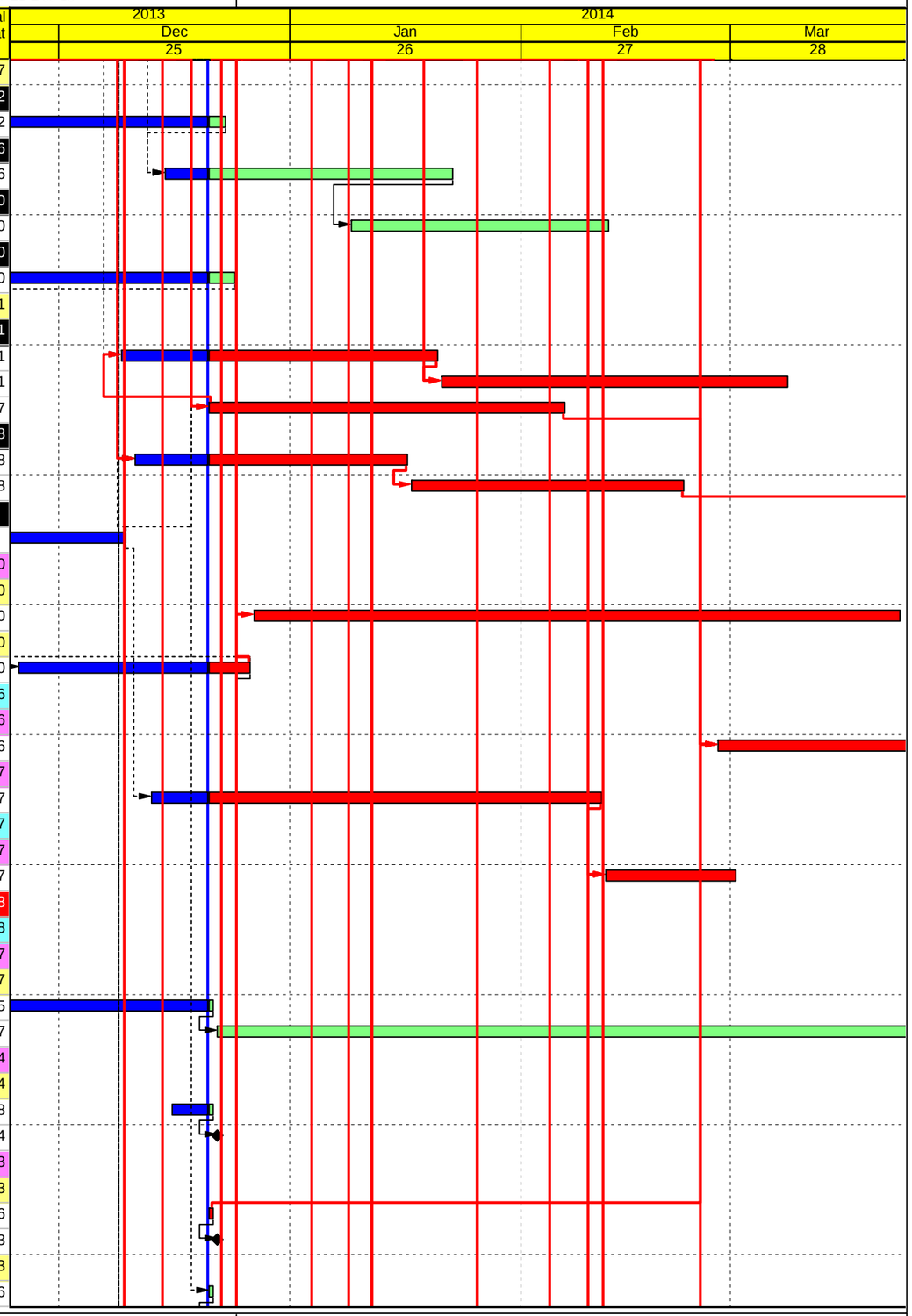
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Existing Seabed below -5mPD		200	08-Jul-13 A	12-Feb-14	1097
Land Portion C2a		36	01-Oct-13 A	23-Dec-13	1142
SABF	Sand Blankets at PC2a 36,000m3 1,000m3/day West	36	01-Oct-13 A	23-Dec-13	1142
Land Portion C2b		38	15-Dec-13 A	22-Jan-14	16
SABF	Sand Blankets at PC2b 75,500m3 2,000m3/day	38	15-Dec-13 A	22-Jan-14	16
Land Portion E2 Northern Part		29	09-Jan-14	12-Feb-14	20
SABF	Sand Blankets at PE2 142,000m3 5,000m3/day North	29	09-Jan-14	12-Feb-14	20
Land Portion E1		72	08-Jul-13 A	24-Dec-13	1140
SABF	Sand Blankets at PE1 15,000m3 5,000m3/day	72	08-Jul-13 A	24-Dec-13	1140
Existing Seabed Above -5mPD		128	18-Oct-13 A	08-Mar-14	-21
Land Portion B		80	09-Dec-13 A	08-Mar-14	-21
SABF	Sand Blankets at PB Edge K013 - K027 171,900m3 5,000m3/day	35	09-Dec-13 A	20-Jan-14	-21
SABF	Sand Blankets at PB Edge K028 - K051 200,550m3 5,000m3/day	40	21-Jan-14	08-Mar-14	-21
SABF	Sand Blankets at PB Main K028 - K051 200,550m3 5,000m3/day	40	21-Dec-13	06-Feb-14	-67
Land Portion C1a		65	11-Dec-13 A	22-Feb-14	-58
SABF	Sand Blankets at PC1a 145,000m3 5,000m3/day	29	11-Dec-13 A	16-Jan-14	-58
SABF	Sand Blankets at PC1a 237,000m3 8,000m3/day	30	17-Jan-14	22-Feb-14	-58
Land Portion C1b		36	18-Oct-13 A	10-Dec-13 A	
SABF	Sand Blankets at PC1b 75,500m3 2,000m3/day East	36	18-Oct-13 A	10-Dec-13 A	
Vertical Band Drains by Marine Plant		106	25-Nov-13 A	23-Mar-14	-100
Land Portion C2a		77	27-Dec-13	23-Mar-14	-100
VBDC:	Vertical Band Drains 115,258nrs by marine plant at PC2a (1,500nrs/day)	77	27-Dec-13*	23-Mar-14	-100
Land Portion E1		30	25-Nov-13 A	26-Dec-13	-100
VBDE:	Vertical Band Drains 35,987nrs by marine plant at PE1 (1,500nrs/day)	30	25-Nov-13 A	26-Dec-13	-100
Marine Fill		90	13-Dec-13 A	24-Mar-14	-86
Land Portion B		24	27-Feb-14	24-Mar-14	-86
MFB3-(	Marine Fill Type A Sand 100% at PB Main at K028 - K051 710,283m3 30,000m3/day	24	27-Feb-14*	24-Mar-14	-86
Land Portion C1b		48	13-Dec-13 A	11-Feb-14	-67
MFC1b	Marine Fill Type A Sand 100% at PC1b west 477,472m3 10,000m3/day	48	13-Dec-13 A	11-Feb-14	-67
Vertical Band Drains by Land Plant		17	12-Feb-14	01-Mar-14	-67
Land Portion C1b		17	12-Feb-14	01-Mar-14	-67
VBDC1	Vertical Band Drains 49,130nrs by land plant at PC1b west 3,000nrs/day	17	12-Feb-14	01-Mar-14	-67
Geotechnical Instrumentation Works		367	10-Oct-13 A	12-Oct-14	938
Geotechnical Instrumentation Works for Seawalls		334	12-Nov-13 A	12-Oct-14	938
Cluster Type SA 2nrs Piezometer, Extensometer and Settlement Marker Cluster inside Cells		334	12-Nov-13 A	12-Oct-14	107
SA-2 C113 Portion C2a		334	12-Nov-13 A	12-Oct-14	107
CTSA:	Installation of SA-2 C113 (within 10days after filling C113) PC2a	10	12-Nov-13 A	21-Dec-13	85
CTSA:	Monitoring of SA-2 C113 PC2a by weekly for subsequent 10mths	295	22-Dec-13	12-Oct-14	107
Cluster Type SB 2nrs Inclinometer Cluster inside cells		6	16-Dec-13 A	22-Dec-13	64
SB-2 C112 Portion C2a		6	16-Dec-13 A	22-Dec-13	64
CTSB:	Installation of SB-2 C112 PC2a	6	16-Dec-13 A	21-Dec-13	48
CTSB:	Commencement of Monitoring of SB-2 C112 PC2a	0	22-Dec-13		64
Cluster Type SC 3nrs Strain Guage and Inclinometer Cluster inside cells		1	21-Dec-13	22-Dec-13	1233
SC-1 K044 Portion B		1	21-Dec-13	22-Dec-13	1233
CTSC	Installation of SC-1 K044 PB	1	21-Dec-13	21-Dec-13	-26
CTSC	Commencement of Monitoring of SC-1 K044 PB	0	22-Dec-13		1233
SC-2 C074 Portion E1		1	21-Dec-13	22-Dec-13	1233
CTSC:	Installation of SC-2 C074 PE1	1	21-Dec-13	21-Dec-13	1006



Remaining Level of Effort
Actual Level of Effort
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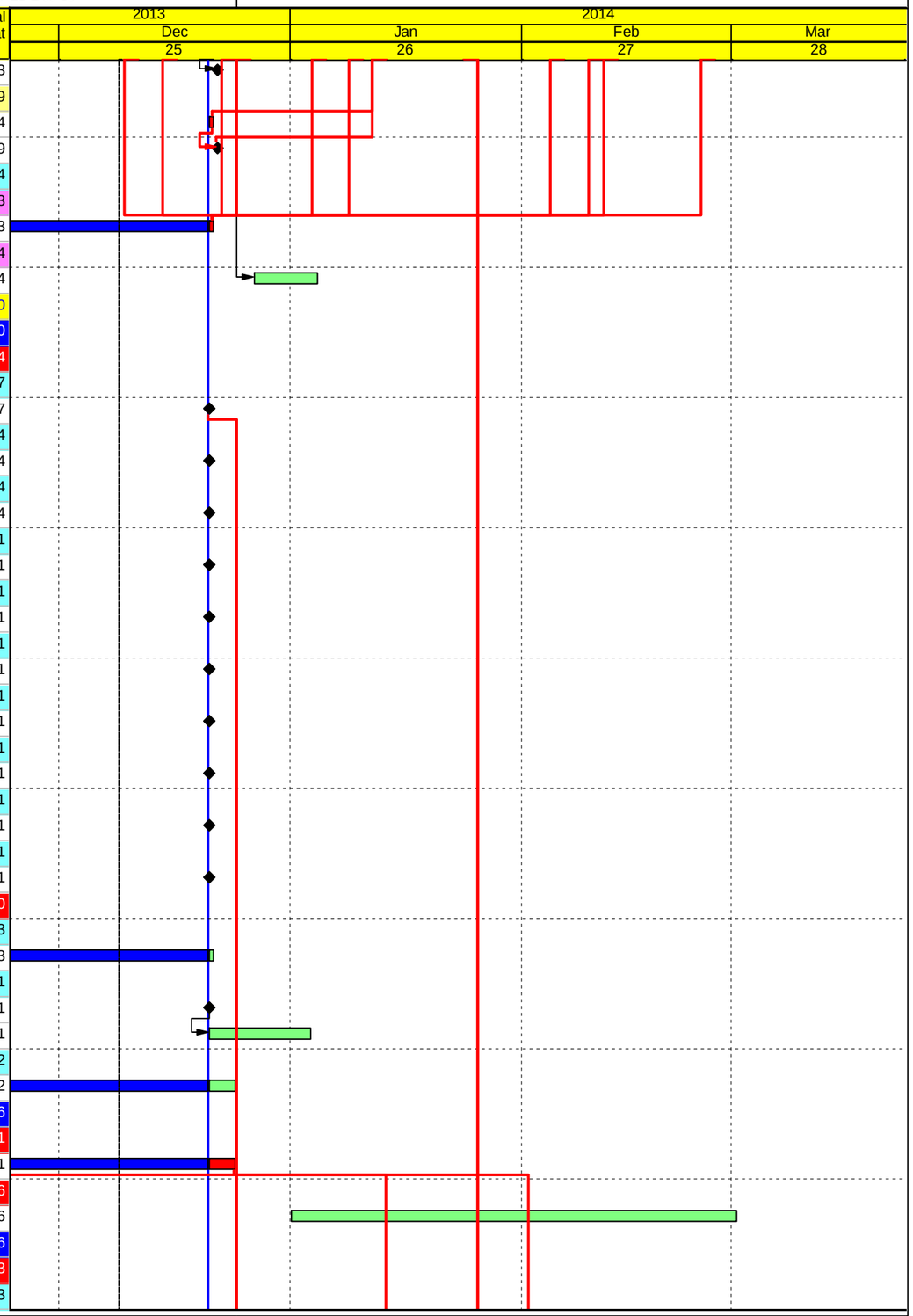
Milestone

25th Monthly Progress Report Status as on 21 Dec 2013

China Harbour Engineering Co., Ltd

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
CTSC:	Commencement of Monitoring of SC-2 C074 PE1	0	22-Dec-13		1233
SC-3 C108 Portion C2a		1	21-Dec-13	22-Dec-13	-39
CTSC:	Installation of SC-3 C108 PC2a	1	21-Dec-13	21-Dec-13	-34
CTSC:	Commencement of Monitoring of SC-3 C108 PC2a	0	22-Dec-13		-39
Geotechnical Instrumentation Works for Reclamation RA & RB		70	10-Oct-13 A	04-Jan-14	184
RA		7	10-Oct-13 A	21-Dec-13	-93
CTRA-(	Installation of RA 5sets at PA	7	10-Oct-13 A	21-Dec-13*	-93
RB		7	27-Dec-13	04-Jan-14	184
SMT1-1	Installation of RB at PE1	7	27-Dec-13	04-Jan-14	184
Portion D		619	11-Dec-12 A	21-Aug-14	990
Submission		389	11-Dec-12 A	03-Jan-14	1220
Design Submission		0	21-Dec-13	21-Dec-13	1234
Settlement Assessment for Reclamation with land-based Drain		0	21-Dec-13	21-Dec-13	-77
PD-DGN	Settlement Assessment for Reclamation with Land based band drain	0		21-Dec-13*	-77
Stability Analysis and Settlement Assessment for Vertical Seawall w No Dredging		0	21-Dec-13	21-Dec-13	1234
PD-DGN	Stability Analysis and settlement assessment for vertical seawall with no dredging	0		21-Dec-13*	1234
Stability Analysis and Settlement Assessment for Sloping Seawall w No Dredging		0	21-Dec-13	21-Dec-13	1234
PD-DGN	Stability Analysis and Settlement Assessment for Sloping seawall with no dredging	0		21-Dec-13*	1234
Settlement Assessment for Culverts C1 - C4 w No Dredging		0	21-Dec-13	21-Dec-13	171
PD-DGN	Settlement assessment for box culverts C1 - C4 with no dredging	0		21-Dec-13*	171
Structural Analysis for Culverts C1 - C4 w Precast Method		0	21-Dec-13	21-Dec-13	171
PD-DGN	Structural analysis for Box Culverts C1 - C4 with Precast Method	0		21-Dec-13*	171
Drainage Impact Assessment & Temporary Diversion (stg2 - for construction of box culver		0	21-Dec-13	21-Dec-13	171
PD-DGN	Drainage Impact Assessment and Temporary Diversion (stage 2 - for construction of box	0		21-Dec-13*	171
Settlement Assessment for Box Culvert EC1		0	21-Dec-13	21-Dec-13	171
PD-DGN	Settlement Assessment for Box culvert EC1 Submission 1st	0		21-Dec-13*	171
Structural Analysis for Box Culvert EC1 w Precast & Cast in-situ Method		0	21-Dec-13	21-Dec-13	171
PD-DGN	Structural Analysis for Box culvert EC1 with Precast and Cast in-situ Method	0		21-Dec-13*	171
Detailed General Arrangement & RC drawings for C1 to C4 w Precast Method		0	21-Dec-13	21-Dec-13	171
PD-DGN	Detailed General Arrangement and RC drawings for Box culverts C1 to C4 with Precast	0		21-Dec-13*	171
Detailed General Arrangement & RC drawings for EC1 w Precast & Cast insitu Methods		0	21-Dec-13	21-Dec-13	171
PD-DGN	Detailed General Arrangement and RC drawings for Box Culverts EC1 with Precast and	0		21-Dec-13*	171
Method Statement Submission		389	11-Dec-12 A	03-Jan-14	1220
Seawall		288	11-Dec-12 A	21-Dec-13	1233
PD-MTD	MTD for Temporary Seawall Construction - Approval	288	11-Dec-12 A	21-Dec-13	1233
Extension Culvert EC1		14	21-Dec-13	03-Jan-14	231
PD-MTD	MTD for culvert EC1 - Preparation & Submission	0	21-Dec-13		231
PD-MTD	MTD for culvert EC1- Approval	14	21-Dec-13	03-Jan-14	231
Float & Sink installation of Culvert C1 - C4		288	11-Dec-12 A	24-Dec-13	192
PD-MTD	MTD for Float & Sink of culvert C1 - C4 - Approval	288	11-Dec-12 A	24-Dec-13	192
Precast Yard for Seawall Blocks & Culverts		317	19-Apr-13 A	01-Mar-14	56
Concrete Blocks		190	19-Apr-13 A	24-Dec-13	-71
PD-PY1-(	Seawall Blocks for Temporary construction 1,190nrs	190	19-Apr-13 A	24-Dec-13	-71
Culverts		60	01-Jan-14	01-Mar-14	56
PD-PY-01	Precast Yard Setup	60	01-Jan-14*	01-Mar-14	56
Site Construction		284	11-Nov-13 A	21-Aug-14	-96
Seawall Construction		96	11-Nov-13 A	14-Feb-14	-73
20130628		96	11-Nov-13 A	14-Feb-14	-73



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Contract No. HY/2010/02 Hong Kong - Zhuhai - Macao Bridge

Hong Kong Boundary Corssing Facilities - Reclamation Works

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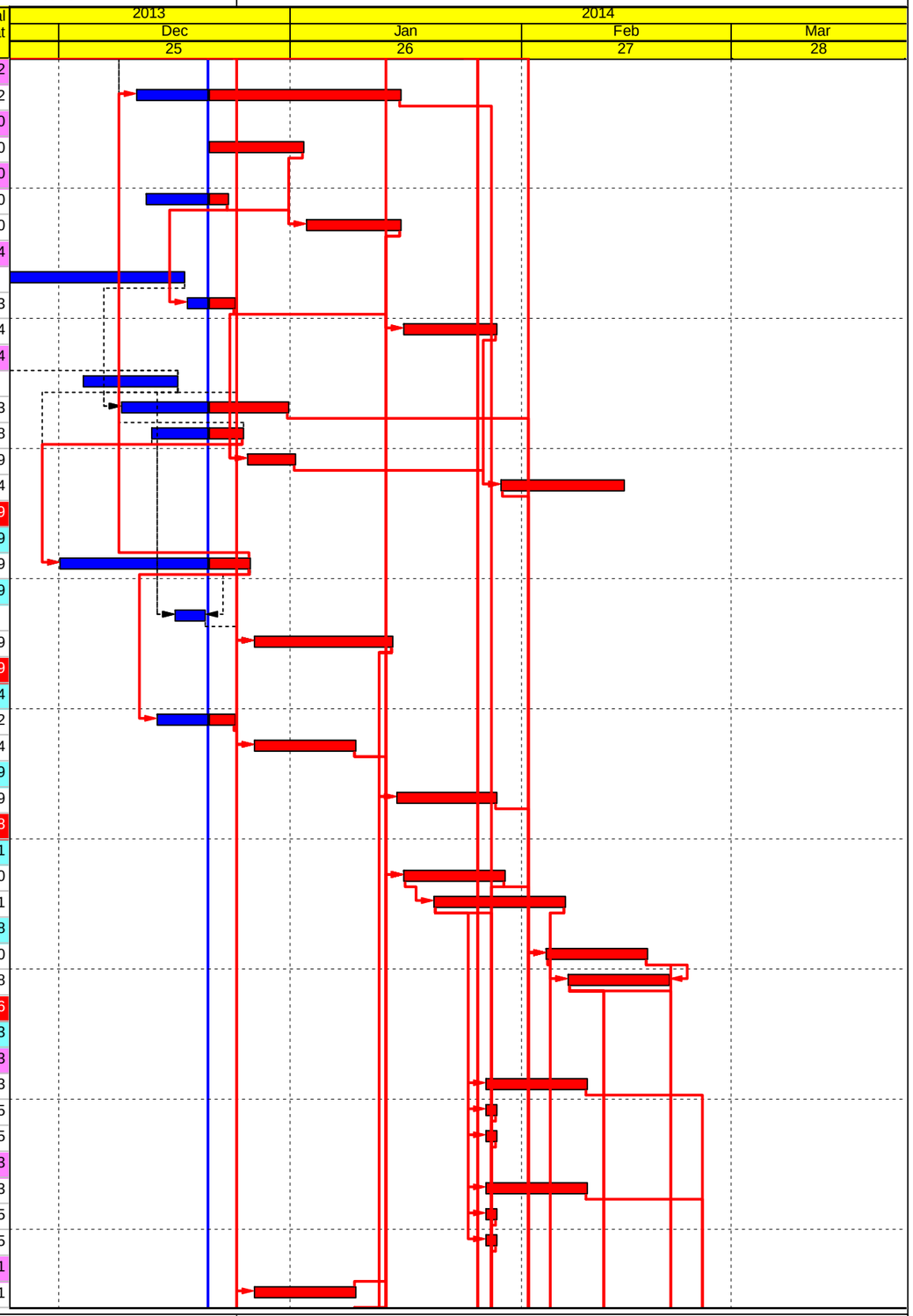
Data Date :21-Dec-13

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
70m Zone of Airport Existing Seawall		30	11-Dec-13 A	15-Jan-14	-82
PDAS-(	Airport Existing Seawall 70m Temporary Bridge above channel	30	11-Dec-13 A	15-Jan-14	-82
Temporary Seawall CH5+915 - CH6+005 (90m)		12	21-Dec-13	02-Jan-14	-90
PDTS-1	V2 Temporary Seawall Seawall blocks installation 350nrs	12	21-Dec-13	02-Jan-14	-90
Temporary Seawall CH5+825 - CH5+915 (90m)		32	12-Dec-13 A	15-Jan-14	-90
PDTS-2	V2 Temporary Seawall Stone Aggregate 18,450m3 Front Section	6	12-Dec-13 A	23-Dec-13	-80
PDTS-2	V2 Temporary Seawall Seawall blocks installation 350nrs	12	03-Jan-14	15-Jan-14	-90
Temporary Seawall CH5+735 - CH5+825 (90m)		74	11-Nov-13 A	28-Jan-14	-64
PDTS-3	S1 Temporary Seawall Stone Aggregate 42,400m3	14	11-Nov-13 A	18-Dec-13 A	
PDTS-3	V2 Temporary Seawall Stone Aggregate 18,450m3 Front Section	6	18-Dec-13 A	24-Dec-13	-43
PDTS-3	V2 Temporary Seawall Seawall blocks installation 350nrs	12	16-Jan-14	28-Jan-14	-64
Temporary Seawall CH5+650 - CH5+735 (85m)		64	04-Dec-13 A	14-Feb-14	-64
PDTS-4	S1 Temporary Seawall Rockfill type1 14,600m3	5	04-Dec-13 A	17-Dec-13 A	
PDTS-4	S1 Temporary Seawall Stone Aggregate 83,400m3	25	09-Dec-13 A	31-Dec-13	-33
PDTS-4	V2 Temporary Seawall Stone Aggregate 22,550m3 Core Section	7	13-Dec-13 A	25-Dec-13	-88
PDTS-4	V2 Temporary Seawall Stone Aggregate 22,550m3 Front Section	7	26-Dec-13	01-Jan-14	-39
PDTS-4	V2 Temporary Seawall Seawall blocks installation 350nrs	12	29-Jan-14	14-Feb-14	-64
Reclamation below +2.5mPD		42	01-Dec-13 A	14-Jan-14	-89
West Portion (South CH 0 - 225 & North CH 5900 - 6136)		18	01-Dec-13 A	26-Dec-13	-89
A1630b	PD - Marine Fill Type A Sand 100% upto + 2.5 mPD at West Portion 175,016m3 10,000r	18	01-Dec-13 A	26-Dec-13	-89
East Portion (South CH 225 - 450 & North CH 5700 - 5900)		27	16-Dec-13 A	14-Jan-14	-89
A1635	PD - Aggregate bedding at C3 & C4	4	16-Dec-13 A	20-Dec-13 A	
A1635a	PD - Marine Fill Type A sand 100% upto + 2.5 mPD at East Portion 175,016m3 10,000m	18	27-Dec-13	14-Jan-14	-89
Vertical Band Drain by Land Base		43	14-Dec-13 A	28-Jan-14	-59
West Portion (South CH 0 -225 & North CH5900 - 6136)		25	14-Dec-13 A	09-Jan-14	-84
A1631	PD - Install vertical band drain at existing seawall 70m by land Plant	4	14-Dec-13 A	24-Dec-13	-82
A1632	PD - Install vertical band drain 12,339nrs at West by Land Plant	13	27-Dec-13	09-Jan-14	-84
East Portion (North CH 225 - 450 & CH 5700 - 5900)		13	15-Jan-14	28-Jan-14	-59
A1636	PD - Install vertical band drain 12,339nrs drain at East by Land Plant	13	15-Jan-14	28-Jan-14	-59
Reclamation Above +2.5mPD		29	16-Jan-14	20-Feb-14	-58
West Portion		16	16-Jan-14	06-Feb-14	-91
A1633	PD - Earthwork Fill upto + 5.5 mPD at West Portion 122,966m3 10,000m3/day	13	16-Jan-14	29-Jan-14	-90
A1643	PD - Compaction at West Portion	13	20-Jan-14	06-Feb-14	-91
East Portion		16	04-Feb-14	20-Feb-14	-58
A1665	PD - Earthwork Fill upto + 5.5 mPD at East Portion 122,965m3 10,000m3/day	13	04-Feb-14	17-Feb-14	-60
A1695	PD - Compaction at East Portion	13	07-Feb-14	20-Feb-14	-58
Instrumentation & Monitoring Requirements		63	27-Dec-13	27-Feb-14	-56
West Portion		45	27-Dec-13	09-Feb-14	-83
Vertical Seawalls - Cluster Type DV-1 & DV-2		14	27-Jan-14	09-Feb-14	-83
DV-1020	PD - Combine Inclinometer and Extensometer 2nrs west	14	27-Jan-14	09-Feb-14	-83
DV-1030	PD - Sub-surface Settlement Marker 2nrs west	2	27-Jan-14	28-Jan-14	-95
DV-1040	PD - Settlement Marker (Type 2) 2nrs west	2	27-Jan-14	28-Jan-14	-95
Sloping Seawalls - Cluster Type DS-1 & DS-2		14	27-Jan-14	09-Feb-14	-83
DS-1020	PD - Combine Inclinometer and Extensiometer 2nrs east	14	27-Jan-14	09-Feb-14	-83
DS-1030	PD - Sub-surface Settlement Marker 2nrs east	2	27-Jan-14	28-Jan-14	-95
DS-1040	PD - Settlement Marker (Type 2) 2nrs east	2	27-Jan-14	28-Jan-14	-95
Reclamation - Cluster Type RA 3sets		14	27-Dec-13	09-Jan-14	-91
RA-1010	PD - Extensometer 3nrs	14	27-Dec-13	09-Jan-14	-91



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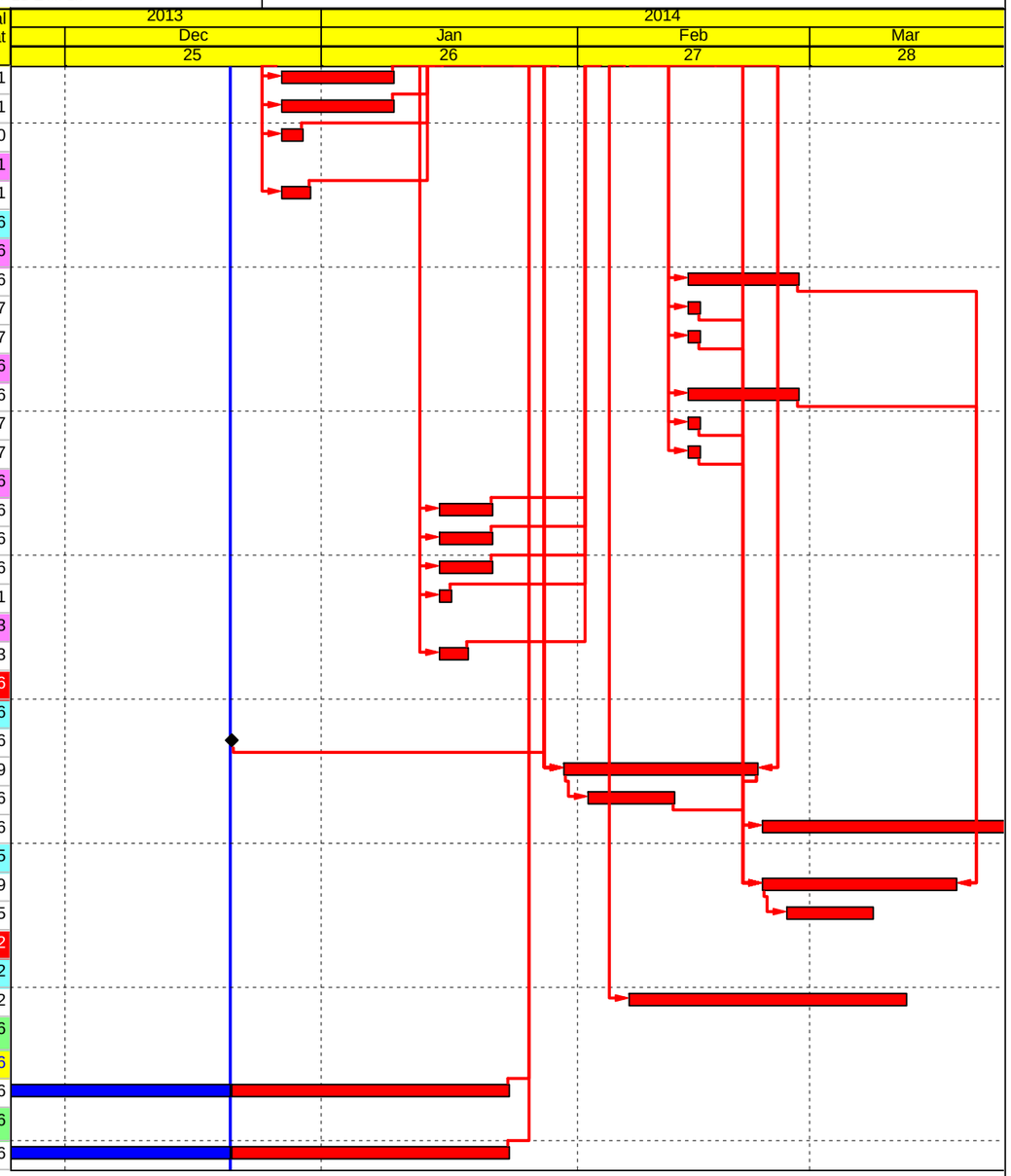
RA-1020	PD - Standpiipe / Casagrande Piezometer 3nrs	14	27-Dec-13	09-Jan-14	-91
RA-1030	PD - Double Tip Virbrating Wire Piezometer 9nrs	14	27-Dec-13	09-Jan-14	-91
RA-1050	PD - Settlement Marker (Type 2) 6nrs	3	27-Dec-13	29-Dec-13	-80
Reclamation - Cluster Type RB 4sets		4	27-Dec-13	30-Dec-13	-81
RB-1020	PD - Settlement Marker (Type 2) 4nrs west	4	27-Dec-13	30-Dec-13	-81
East Portion		44	15-Jan-14	27-Feb-14	-56
Vertical Seawalls - Cluster Type DV-3 & DV-4		14	14-Feb-14	27-Feb-14	-56
DV-1060	PD - Combine Inclinometer and Extensometer 2nrs east	14	14-Feb-14	27-Feb-14	-56
DV-1070	PD - Sub-surface Settlement Marker 2nrs east	2	14-Feb-14	15-Feb-14	-67
DV-1080	PD - Settlement Marker (Type 2) 2nrs east	2	14-Feb-14	15-Feb-14	-67
Sloping Seawalls - Cluster Type DS-3 & DS-4		14	14-Feb-14	27-Feb-14	-56
DS-1060	PD - Combine Inclinometer and Extensiometer 2nrs east	14	14-Feb-14	27-Feb-14	-56
DS-1070	PD - Sub-surface Settlement Marker 2nrs east	2	14-Feb-14	15-Feb-14	-67
DS-1080	PD - Settlement Marker (Type 2) 2nrs east	2	14-Feb-14	15-Feb-14	-67
Reclamation - Cluster Type RA 1set		7	15-Jan-14	21-Jan-14	-56
RA-1060	PD - Extensometer 1nr	7	15-Jan-14	21-Jan-14	-56
RA-1070	PD - Standpiipe / Casagrande Piezometer 1nr	7	15-Jan-14	21-Jan-14	-56
RA-1080	PD - Double Tip Virbrating Wire Piezometer 3nrs	7	15-Jan-14	21-Jan-14	-56
RA-1100	PD - Settlement Marker (Type 2) 2nrs	2	15-Jan-14	16-Jan-14	-51
Reclamation - Cluster Type RB 4sets		4	15-Jan-14	18-Jan-14	-53
RB-1040	PD - Settlement Marker (Type 2) 4nrs east	4	15-Jan-14	18-Jan-14	-53
Surcharge		244	21-Dec-13	21-Aug-14	-96
West Portion		244	21-Dec-13	21-Aug-14	-96
A1638	PD - Access Road for delivery of public fill material	0	21-Dec-13*		-56
A1640	PD - Surcharge Laying at West Portion 177,508m3 8,000m3/day	22	30-Jan-14	22-Feb-14	-89
A1650	PD - Surcharge compaction upto 8.5mPD at West Portion	11	02-Feb-14	12-Feb-14	-86
A1660	PD - Surcharge Period at West Portion 6mths	180	23-Feb-14	21-Aug-14	-96
East Portion		24	23-Feb-14	18-Mar-14	-75
A1675	PD - Surcharge Laying at East Portion 177,508m3 8,000m3/day	22	23-Feb-14	18-Mar-14	-69
A1680	PD - Surcharge Compaction upto 8.5mPD at East Portion	11	26-Feb-14	08-Mar-14	-65
Access at Portion D		34	07-Feb-14	12-Mar-14	-102
Temporary Access to Portion A		34	07-Feb-14	12-Mar-14	-102
A1080	PD Construction of Access to PA	34	07-Feb-14*	12-Mar-14	-102
Works Area WA2 (Tung Chung)		615	30-Nov-11 A	23-Jan-14	-26
Zone B		615	30-Nov-11 A	23-Jan-14	-26
A3090	Maintenance of Site	615	30-Nov-11 A	23-Jan-14	-26
Works Area WA4 (To Kau Wan)		548	23-Feb-12 A	23-Jan-14	-26
A1910	Maintenance of Site Zone A	548	23-Feb-12 A	23-Jan-14	-26



Appendix C - Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
Air Quality				
S5.5.6.1 of HKBCFEIA	A1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	All construction sites	V
S5.5.6.2 of HKBCFEIA and S4.8.1 of TKCLKLEIA	A2	Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • 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; • When there are open excavation and reinstatement works, hoarding of not less	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		on the top and the 3 sides; • 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; • All unpaved roads/exposed area shall be watered which results in dust suppression by forming moist cohesive films among the discrete grains of road surface material. • No burning of debris or other materials on the works areas is allowed; • Water spray shall be used during the handling of fill material at the site and at active cuts, excavation and fill sites where dust is likely to be created; • Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading; • During transportation by truck, materials shall not be loaded to a level higher than the side and tail boards, and shall be dampened or covered before transport. Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards; • 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		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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.		
S5.5.6.3 of HKBCFEIA and S4.8.1 of TKCLKLEIA	A3	The Contractor should undertake proper watering on all exposed spoil and associated work areas (with at least 8 times per day) throughout the construction phase.	All construction sites	V
S5.5.6.4 of HKBCFEIA and S4.11 of TKCLKLEIA	A4	Implement regular dust monitoring under EM&A programme during the construction stage.	Selected representative dust monitoring station	V
S5.5.7.1 of HKBCFEIA	A5	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 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;	All construction sites	N/A

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• 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.		
S5.5.2.7 of HKBCFEIA	A6	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.	All construction sites	N/A (Construction in process)
Construction Noise (Air borne)				
S6.4.10 of HKBCFEIA	N1	Use of good site practices to limit noise emissions by considering the following: • only well-maintained plant should be operated on-site and plant should be	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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.		
S6.4.11 of HKBCFEIA	N2	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.	All construction sites	V
S6.4.12 of HKBCFEIA	N3	Install movable noise barriers (typically density @14kg/m^2), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	For plant items listed in Appendix 6D of the EIA report at all construction sites	N/A
S6.4.13 of HKBCFEIA	N4	Select “Quiet plants” which comply with the BS 5228 Part 1 or TM standards.	For plant items listed in Appendix 6D of the	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
			EIA report at all construction sites	
S6.4.14 of HKBCFEIA	N5	Sequencing operation of construction plants where practicable.	All construction sites where practicable	V
S5.1 of TMCLKLEIA	N6	Implement a noise monitoring under EM&A programme.	Selected representative noise monitoring station	V
Waste Management (Construction Waste)				
S12.6 of TMCLKLEIA	WM1	The Contractor shall identify a coordinator for the management of waste.	All construction sites	V
S12.6 of TMCLKLEIA	WM2	The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	All construction sites	V
S12.6 of TMCLKLEIA	WM3	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.	All construction sites	V
S8.3.8 of HKBCFEIA and S12.6 of TMCLKLEIA	WM4	*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;	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• 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 the disposal of C&D materials are properly documented and verified; • 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; and • The surplus surcharge should be transferred to a fill bank.		
S8.3.9-S8.3.11 of HKBCFEIA and S12.6 of	WM5	*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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
TMCLKLEIA		hoardings should not be used, as in other projects. Metal hoarding and falsework 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 areas of the sites should be considered for such segregation and storage.		
S8.2.12-S8.3.15 of HKBCFEIA and S12.6 of TMCLKLEIA	WM6	*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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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 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 of HKBCFEIA and S12.6 of TMCLKLEIA	WM7	*Sewage* • Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.	All construction sites	V
S8.3.17 of HKBCFEIA and S12.6 of TMCLKLEIA	WM8	*General Refuse* • The site and surroundings shall be kept tidy and litter free. 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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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, 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. • Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station. • All waste containers shall be in a secure area on hardstanding.		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
Water Quality (Construction Phase)				
	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 backfilling, as well as protection measures. Details of the measures are provided below: • Reclamation filling for the Project shall not proceed until at least 200m of leading seawall at the reclamation area formed above +2.2mPD, unless otherwise agreement was obtained from EPD, except for the 300m gaps for marine access. All underwater filling works shall be carried out behind seawalls to avoid dispersion of suspended solids outside the Project limit; • Except for the filling of the cellular structures, not more than 15% public fill shall be used for reclamation filling below +2.5mPD during construction of the seawall; • After the seawall is completed except for the 300m marine access as indicated in the EPs, not more than 30% public fill shall be used for reclamation filling below +2.5mPD, unless otherwise agreement from EPD was obtained; • Upon completion of 200m leading seawall, no more than a total of 60 filling barge trips per day shall be made with a cumulative maximum daily filling rate of 60,000	During filling	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		m3 for HKBCF and TMCLKL southern landfall reclamation during the filling operation; and • Upon completion of the whole section of seawall except for the 300m marine access as indicated in the EPs, no more than a total of 190 filling barge trips per day shall be made with a cumulative maximum daily filling rate of 190,000 m3 for the remaining filling operations for HKBCF and TMCLKL southern landfall reclamation. • Floating type perimeter silt curtains shall be around the HKBCF site before the commencement of marine works. Staggered layers of silt curtain shall be provided to prevent sediment loss at navigation accesses. The length of each staggered layers shall be at least 200m; • Single layer silt curtain to be applied around the North-east airport water intake; • The silt-curtains should be maintained in good condition to ensure the sediment plume generated from filling be confined effectively within the site boundary; • The filling works shall be scheduled to spread the works evenly over a working day; • Cellular structure shall be used for seawall construction; • A layer of geotextile shall be placed on top of the seabed before any filling activities take place inside the cellular structures to form the seawall; • The conveyor belts shall be fitted with windboards and conveyor release points shall be covered with curtain to prevent any spillage of filling materials onto the		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		surrounding waters; and • An additional layer of silt curtain shall be installed near the active stone column installation points. A layer of geotextile with stone blanket on top shall be placed on the seabed prior to stone column installation works.		
S9.11.1.3 of HKBCFEIA and S6.10 of TMCLKLEIA	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	All land-based construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		deposited silt and grit shall be removed regularly, including 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		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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; • 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 offsite disposal; • the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; • waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; • all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the storm water system..		
S9.14 of HKBCFEIA	W3	Implement a water quality monitoring programme	At identified monitoring location	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
and S6.10 of TMCLKLEIA				
S6.10 of TMCLKLEIA	W4	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	All construction site areas	V
Ecology (Construction Phase)				
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E1	• Install silt curtain during the construction • Limit works fronts • Construct seawall prior to reclamation filling where practicable • Good site practices • Strict enforcement of no marine dumping • Site runoff control • Spill response plan	Seawall, reclamation area	V
S10.7 of HKBCFEIA	E2	• 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.	Land-based works areas	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E3	• Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time.	Land-based works areas	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E4	• Dolphin Exclusion Zone • Dolphin watching plan	Marine works	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E5	• Decouple compressors and other equipment on working vessels • Proposal on design and implementation of acoustic decoupling measures applied during reclamation works • Avoidance of percussive piling	Marine works	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E6	• Control vessel speed • Skipper training • Predefined and regular routes for working vessels; avoid Brothers Islands	Marine traffic	V
S10.10 of HKBCFEIA and S8.14 of TMCLKLEIA	E7	• Vessel based dolphin monitoring	Northeast and Northwest Lantau	V
Fisheries				
S11.7 of HKBCFEIA	F1	• Reduce re-suspension of sediments • Limit works fronts • Good site practices	Seawall, reclamation area	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• Strict enforcement of no marine dumping • Spill response plan		
S11.7 of HKBCFEIA	F2	• Install silt-grease trap in the drainage system collecting surface runoff	Reclamation area	V
Landscape & Visual (Construction Phase)				
S14.3.3. 3 of HKBCFEIA and S10.9 of TMCLKLEIA	LV1	*Mitigate Landscape Impacts* G1/CM4 Grass-hydroseed or sheeting bare soil surface and stock pile areas. 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 new coastline.	All construction site areas	N/A
S10.9 of TMCLKLEIA	LV2	*Mitigate Landscape Impacts* CM7 Ensure no run-off into water body adjacent to the Project Area.	All construction site areas	V
S14.3.3. 3 of HKBCFEIA	LV4	*Mitigate Visual Impacts* V1 Minimize time for construction activities during construction period.	All construction site areas	V
S10.9 of TMCLKLEIA	LV5	*Mitigate Visual Impacts* CM6 Control night-time lighting and glare by hooding all lights.	All construction site areas	V
EM&A				

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
S15.2.2 of HKBCFEIA	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	All construction site areas	V
S15.5 - S15.6 of HKBCFEIA	EM2	• An Environmental Team needs to be employed as per the EM&A Manual. • Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. • 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.	All construction site areas	V

Legend: V = implemented; x = not implemented; N/A = not applicable

Appendix D - Summary of Action and Limit Levels

Table 1 – Action and Limit Levels for 1-hour TSP

Location	Action Level	Limit Level
AMS2	374 μg/m^3	500 μg/m^3
AMS3A*	368 μg/m^3	500 μg/m^3
AMS6	360 μg/m^3	500 μg/m^3
AMS7	370 μg/m^3	500 μg/m^3

Remarks: * Action Level set out at AMS3 Ho Yu College is adopted.

Table 2 – Action and Limit Levels for 24-hour TSP

Location	Action Level	Limit Level
AMS2	176 μg/m^3	260 μg/m^3
AMS3A*	167 μg/m^3	260 μg/m^3
AMS6	173 μg/m^3	260 μg/m^3
AMS7	183 μg/m^3	260 μg/m^3

Remarks: * Action Level set out at AMS3 Ho Yu College is adopted.

Table 3 – Action and Limit Levels for Construction Noise (0700-1900 hrs of normal weekdays)

Location	Action Level	Limit Level
NMS2	When one documented complaint, related to 0700 – 1900 hours on normal weekdays, is received from any one of the sensitive receivers	75 dB(A)
NMS3A		*65 / 70 dB(A)

*Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

Table 4 – Action and Limit Levels for Water Quality

Parameters	**Action**	**Limit**
DO in mg L^{-1} (Surface, Middle & Bottom)	Surface and Middle 5.0 Bottom 4.7	Surface and Middle 4 .2 (except 5 mg/L for FCZ) Bottom 3.6
SS in mg L^{-1} (depth-averaged)	23.5 and 120% of upstream control station's SS at the same tide of the same day	34.4 and 130% of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes
Turbidity in NTU (depth-averaged)	27.5 and 120% of upstream control station's turbidity at the same tide of the same day	47.0 and130% of upstream control station's turbidity at the same tide of the same day

Notes:

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 limits occurs when monitoring result is lower than the limits.
3. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Table 5(a) Action and Limit Levels for Chinese White Dolphin Monitoring - Approach to Define Action Level (AL) and Limit Level (LL):

	North Lantau Social Cluster	
	NEL	**NWL**
Action Level	(STG < 70% of baseline) & (ANI < 70% of baseline)	(STG < 70% of baseline) & (ANI < 70% of baseline)
Limit Level	[(STG < 40% of baseline) & (ANI < 40% of baseline)] AND [(STG < 40% of baseline) & (ANI < 40% of baseline)]	

For North Lantau Social Cluster, action level will be trigger if either NEL **or** NWL fall below the criteria; limit level will be triggered if both NEL **and** NWL fall below the criteria.

Table 5(b) Derived Value of Action Level (AL) and Limit Level (LL) for Chinese White Dolphin Monitoring

	North Lantau Social Cluster	
	NEL	**NWL**
Action Level	(STG < 4.2) & (ANI < 15.5)	(STG < 6.9) & (ANI < 31.3)
Limit Level	[(STG < 2.4) & (ANI <8.9)] AND [(STG < 3.9)& (ANI < 17.9)]	

Appendix G Impact Air Quality Monitoring Results

1-hour TSP Monitoring Results at Station AMS2 - Tung Chung Development Pier

Date	Session	Weather Condition	averaged Wind Speed (m/s)*	Time (hh:mm)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
05-Dec-13	1st Hour	Sunny	1.0	10:02	83	374	500
05-Dec-13	2nd Hour	Sunny	1.0	11:02	81	374	500
05-Dec-13	3rd Hour	Sunny	1.0	12:02	82	374	500
11-Dec-13	1st Hour	Fine	1.9	11:15	82	374	500
11-Dec-13	2nd Hour	Fine	1.9	12:15	88	374	500
11-Dec-13	3rd Hour	Fine	1.9	13:15	83	374	500
17-Dec-13	1st Hour	Rainy	2.8	10:05	72	374	500
17-Dec-13	2nd Hour	Rainy	2.8	11:05	75	374	500
17-Dec-13	3rd Hour	Rainy	2.8	12:05	71	374	500
21-Dec-13	1st Hour	Sunny	1.5	11:05	78	374	500
21-Dec-13	2nd Hour	Sunny	1.5	12:05	80	374	500
21-Dec-13	3rd Hour	Sunny	1.5	13:05	80	374	500
27-Dec-13	1st Hour	Sunny	0.7	10:05	91	374	500
27-Dec-13	2nd Hour	Sunny	0.7	11:05	91	374	500
27-Dec-13	3rd Hour	Sunny	0.7	12:05	90	374	500
				Average	82		
				Min	71		
				Max	91		

1-hour TSP Monitoring Results at Station AMS3A - Site Boundary of Site Office (WA2)

Date	Session	Weather Condition	averaged Wind Speed (m/s)*	Time (hh:mm)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$) ^	Limit Level ($\mu g/m^3$)
05-Dec-13	1st Hour	Sunny	1.0	10:49	85	368	500
05-Dec-13	2nd Hour	Sunny	1.0	11:49	83	368	500
05-Dec-13	3rd Hour	Sunny	1.0	12:49	84	368	500
11-Dec-13	1st Hour	Fine	1.9	11:55	84	368	500
11-Dec-13	2nd Hour	Fine	1.9	12:55	88	368	500
11-Dec-13	3rd Hour	Fine	1.9	13:55	86	368	500
17-Dec-13	1st Hour	Cloudy	2.8	10:15	75	368	500
17-Dec-13	2nd Hour	Cloudy	2.8	11:15	76	368	500
17-Dec-13	3rd Hour	Cloudy	2.8	12:15	73	368	500
21-Dec-13	1st Hour	Sunny	1.5	11:33	81	368	500
21-Dec-13	2nd Hour	Sunny	1.5	12:33	79	368	500
21-Dec-13	3rd Hour	Sunny	1.5	13:33	80	368	500
27-Dec-13	1st Hour	Sunny	0.7	10:15	92	368	500
27-Dec-13	2nd Hour	Sunny	0.7	11:15	91	368	500
27-Dec-13	3rd Hour	Sunny	0.7	12:15	92	368	500
				Average	83		
				Min	73		
				Max	92		

Remarks:
^ Action Level set out at AMS3 Ho Yu College is adopted.

1-hour TSP Monitoring Results at Station AMS7 - Hong Kong SkyCity Marriott Hotel

Date	Session	Weather Condition	averaged Wind Speed (m/s)*	Time (hh:mm)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
05-Dec-13	1st Hour	Sunny	1.0	10:26	84	370	500
05-Dec-13	2nd Hour	Sunny	1.0	11:26	83	370	500
05-Dec-13	3rd Hour	Sunny	1.0	12:26	83	370	500
11-Dec-13	1st Hour	Fine	1.9	12:10	82	370	500
11-Dec-13	2nd Hour	Fine	1.9	13:10	83	370	500
11-Dec-13	3rd Hour	Fine	1.9	14:10	81	370	500
17-Dec-13	1st Hour	Rainy	2.8	9:50	72	370	500
17-Dec-13	2nd Hour	Rainy	2.8	10:50	73	370	500
17-Dec-13	3rd Hour	Rainy	2.8	11:50	71	370	500
21-Dec-13	1st Hour	Sunny	1.5	11:18	82	370	500
21-Dec-13	2nd Hour	Sunny	1.5	12:18	82	370	500
21-Dec-13	3rd Hour	Sunny	1.5	13:18	80	370	500
27-Dec-13	1st Hour	Sunny	0.7	9:50	89	370	500
27-Dec-13	2nd Hour	Sunny	0.7	10:50	89	370	500
27-Dec-13	3rd Hour	Sunny	0.7	11:50	88	370	500
				Average	81		
				Min	71		
				Max	89		

Appendix G Impact Air Quality Monitoring Results

24-hour TSP Monitoring Results at Station AMS2 - Tung Chung Development Pier

Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
							Initial	Final			Initial	Final		Initial	Final				
04-Dec-13	16:00	05-Dec-13	16:00	Sunny	18.3	1017.9	1.33	1.33	1.33	1912.3	2.7444	2.9173	0.1729	2669.84	2693.84	24.00	90	176	260
10-Dec-13	16:00	11-Dec-13	16:00	Fine	19.2	1017.0	1.33	1.33	1.33	1912.3	2.6727	2.9699	0.2972	2693.84	2717.84	24.00	155	176	260
16-Dec-13	16:00	17-Dec-13	16:00	Rainy	12.3	1016.4	1.33	1.33	1.33	1912.3	2.7509	2.7974	0.0465	2717.84	2741.84	24.00	24	176	260
20-Dec-13	16:00	21-Dec-13	16:00	Cloudy	14.4	1024.1	1.33	1.33	1.33	1912.3	2.7574	2.9337	0.1763	2741.84	2765.84	24.00	92	176	260
27-Dec-13	9:00	28-Dec-13	9:00	Sunny	13.0	1023.5	1.33	1.33	1.33	1912.3	2.7623	2.9402	0.1779	2765.84	2789.84	24.00	93	176	260
																Average	91		
																Min	24		
																Max	155		

24-hour TSP Monitoring Results at Station AMS3A - Site Boundary of Site Office (WA2)

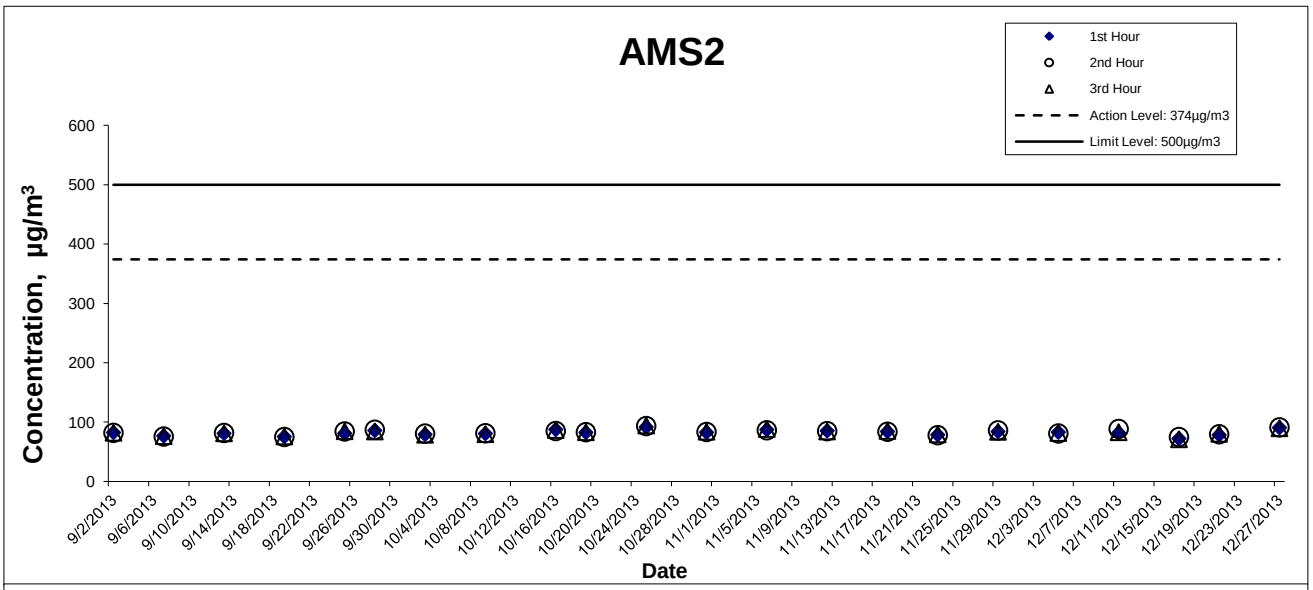
Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
							Initial	Final			Initial	Final		Initial	Final				
04-Dec-13	16:00	05-Dec-13	16:00	Sunny	18.3	1017.9	1.32	1.32	1.32	1905.1	2.7230	2.9926	0.2696	2630.30	2654.30	24.00	142	167	260
10-Dec-13	16:00	11-Dec-13	16:00	Fine	19.2	1017.0	1.32	1.32	1.32	1905.1	2.6834	3.0872	0.4038	2654.30	2678.30	24.00	**212**	167	260
16-Dec-13	16:00	17-Dec-13	16:00	Rainy	12.3	1016.4	1.32	1.32	1.32	1905.1	2.9431	3.1307	0.1876	2678.30	2702.30	24.00	98	167	260
20-Dec-13	16:00	21-Dec-13	16:00	Cloudy	14.4	1024.1	1.32	1.32	1.32	1905.1	2.7395	2.9086	0.1691	2702.30	2726.30	24.00	89	167	260
27-Dec-13	9:00	28-Dec-13	9:00	Sunny	13.0	1023.5	1.32	1.32	1.32	1905.1	2.7523	3.0566	0.3043	2726.30	2750.30	24.00	160	167	260
																Average	140		
																Min	89		
																Max	212		

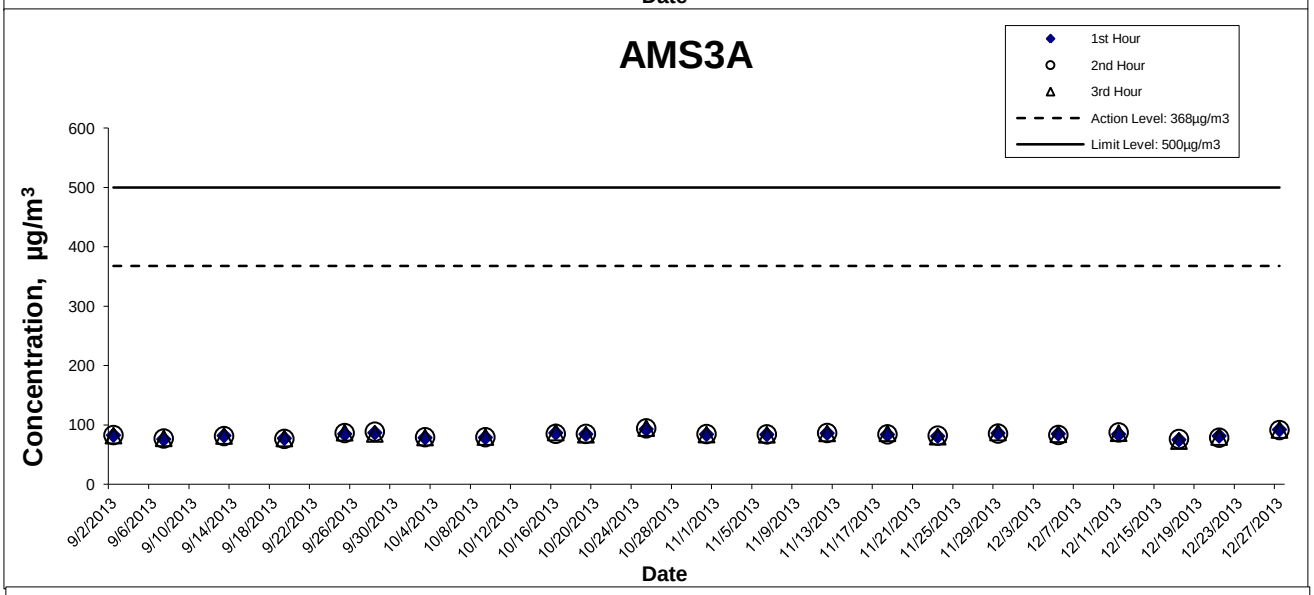
Remarks:
^ Action Level set out at AMS3 Ho Yu College is adopted.

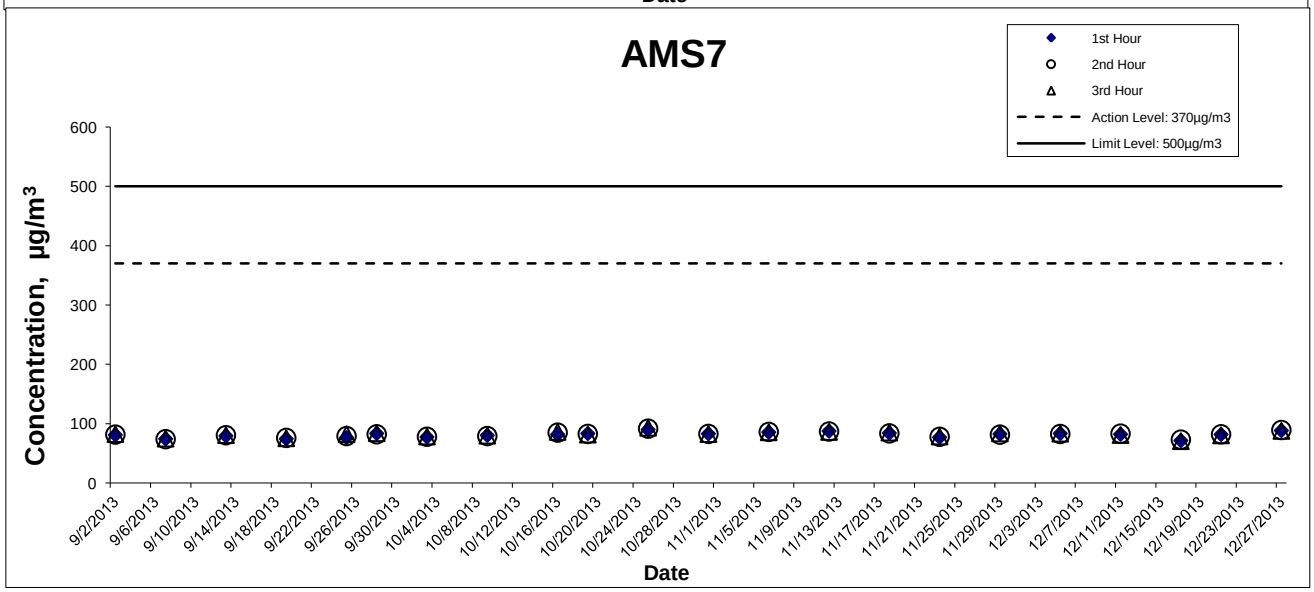
24-hour TSP Monitoring Results at Station AMS7 - Hong Kong SkyCity Marriott Hotel

Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
							Initial	Final			Initial	Final		Initial	Final				
04-Dec-13	16:00	05-Dec-13	16:00	Sunny	18.3	1017.9	1.33	1.33	1.33	1916.6	2.7277	2.9127	0.1850	2651.98	2675.98	24.00	97	183	260
10-Dec-13	16:00	11-Dec-13	16:00	Fine	19.2	1017.0	1.33	1.33	1.33	1916.6	2.6785	2.9940	0.3155	2675.98	2699.98	24.00	165	183	260
16-Dec-13	16:00	17-Dec-13	16:00	Rainy	12.3	1016.4	1.33	1.33	1.33	1916.6	2.7351	2.7717	0.0366	2699.98	2723.98	24.00	19	183	260
20-Dec-13	16:00	21-Dec-13	16:00	Cloudy	14.4	1024.1	1.33	1.33	1.33	1916.6	2.7659	2.9309	0.1650	2723.98	2747.98	24.00	86	183	260
27-Dec-13	9:00	28-Dec-13	9:00	Sunny	13.0	1023.5	1.33	1.33	1.33	1916.6	2.7486	3.1047	0.3561	2747.98	2771.98	24.00	**186**	183	260
																Average	114		
																Min	19		
																Max	186		

Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.





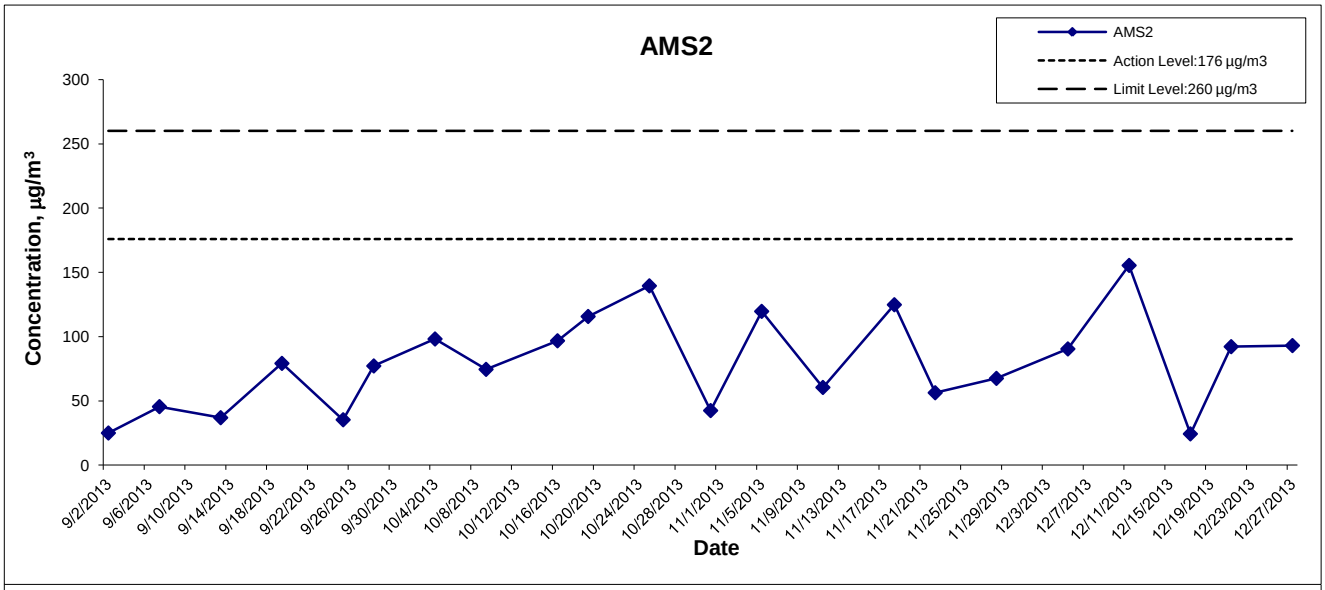


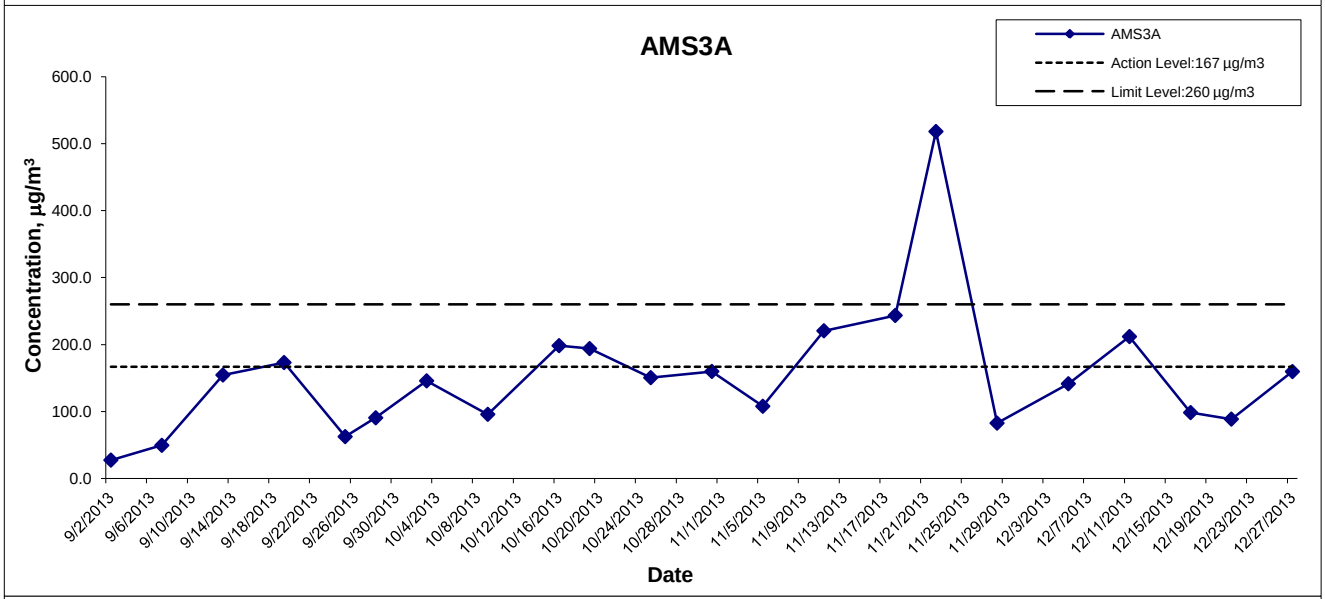
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

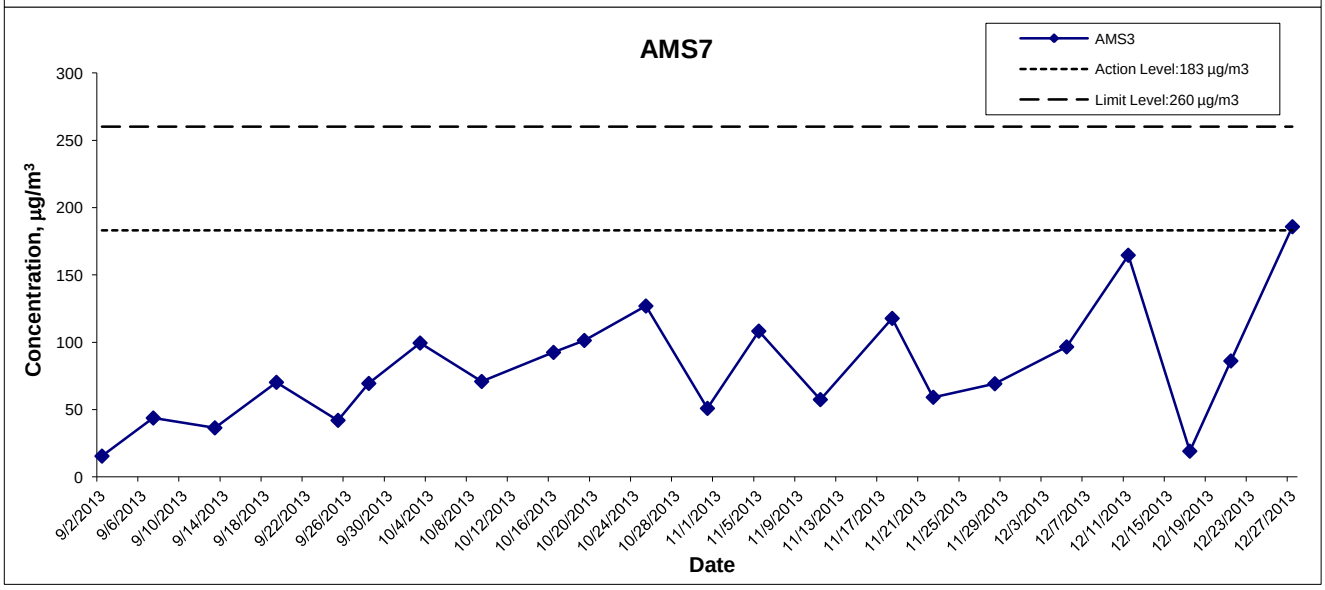
Graphical Presentation of Impact 1-hour TSP Monitoring Results

Project No.: 60249820 **Date: January 2014**

Appendix G







HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

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Graphical Presentation of Impact 24-hour TSP Monitoring Results

Project No.: 60249820 **Date: January 2014**

Appendix G

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Tung Chung Development Pier (AMS2)	Operator:	Leung Yiu Ting
Cal. Date:	22-Dec-13	Next Due Date:	22-Feb-14
Equipment No.:	A-001-78T	Serial No.	3383

Ambient Condition			
Temperature, Ta (K)	288	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.94727	Intercept, bc	0.02332
Last Calibration Date:	20-May-13	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	20-May-14	**Qstd = {[DH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	8.8	3.02	1.54	45.0	45.77
13	7.5	2.79	1.42	42.0	42.72
10	6.1	2.51	1.28	37.0	37.64
7	4.5	2.16	1.10	30.0	30.52
5	2.8	1.70	0.86	22.0	22.38

By Linear Regression of Y on X

Slope , mw = 35.4112 **Intercept, bw =** -8.0527

Correlation Coefficient* = 0.9974

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **37.34**

Remarks: _____

QC Reviewer: YT Leung Signature: _____ Date: 23-12-13

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Tung Chung Development Pier (AMS2)	Operator:	Choi Wing Ho
Cal. Date:	22-Oct-13	Next Due Date:	22-Dec-13
Equipment No.:	A-001-78T	Serial No.	3383

Ambient Condition			
Temperature, Ta (K)	298	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.94727	Intercept, bc	0.02332
Last Calibration Date:	20-May-13	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	20-May-14	**Qstd = {[DH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	9.0	3.00	1.53	46.0	46.02
13	7.4	2.72	1.39	42.0	42.01
10	6.2	2.49	1.27	37.0	37.01
7	4.5	2.12	1.08	30.0	30.01
5	2.7	1.64	0.83	23.0	23.01

By Linear Regression of Y on X

Slope , mw = **33.8945** **Intercept, bw =** **-5.6830**

Correlation Coefficient* = **0.9954**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **38.37**

Remarks:

QC Reviewer: K. H. SHEK Signature: Mike Date: 23. Oct. 13

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Site Boundary of Site Office (WA2) (AMS3A)	Operator:	Leung Yiu Ting
Cal. Date:	22-Dec-13	Next Due Date:	22-Feb-14
Equipment No.:	A-001-79T	Serial No.	3384

Ambient Condition			
Temperature, Ta (K)	288	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.94727	Intercept, bc	0.02332
Last Calibration Date:	20-May-13	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	20-May-14	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) **X-axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	8.0	2.88	1.47	46.0	46.79
13	6.6	2.61	1.33	40.0	40.69
10	5.0	2.27	1.16	32.0	32.55
7	3.9	2.01	1.02	28.0	28.48
5	2.4	1.58	0.80	18.0	18.31

By Linear Regression of Y on X

Slope , mw = 42.0602 **Intercept, bw =** -15.1612

Correlation Coefficient* = 0.9969

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **38.85**

Remarks: _____

QC Reviewer: YT Leung Signature: _____ Date: 23-12-13

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AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Site Boundary of Site Office (WA2) (AMS3A)	Operator:	Choi Wing Ho
Cal. Date:	22-Oct-13	Next Due Date:	22-Dec-13
Equipment No.:	A-001-79T	Serial No.	3384

Ambient Condition			
Temperature, Ta (K)	298	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.94727	Intercept, bc	0.02332
Last Calibration Date:	20-May-13	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	20-May-14	**Qstd = {[DH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	8.1	2.85	1.45	45.0	45.02
13	6.6	2.57	1.31	39.0	39.01
10	5.1	2.26	1.15	32.0	32.01
7	4.0	2.00	1.02	28.0	28.01
5	2.4	1.55	0.78	17.0	17.01

By Linear Regression of Y on X

Slope , mw = **41.4257** **Intercept, bw =** **-15.0585**

Correlation Coefficient* = **0.9969**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **38.78**

Remarks: _____

QC Reviewer: K. H. SHEK Signature: Mike Date: 23. Oct. 13

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Hong Kong SkyCity Marriott Hotel (AMS7)	Operator:	Leung Yiu Ting
Cal. Date:	22-Dec-13	Next Due Date:	22-Feb-14
Equipment No.:	A-001-80T	Serial No.	3385

Ambient Condition			
Temperature, Ta (K)	288	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.94727	Intercept, bc	0.02332
Last Calibration Date:	20-May-13	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	20-May-14	**Qstd = {[DH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	8.0	2.88	1.47	46.0	46.79
13	6.5	2.59	1.32	41.0	41.71
10	5.1	2.30	1.17	32.0	32.55
7	4.0	2.03	1.03	25.0	25.43
5	3.0	1.76	0.89	19.0	19.33

By Linear Regression of Y on X

Slope , mw = **49.7114** **Intercept, bw =** **-25.2864**

Correlation Coefficient* = **0.9941**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **38.67**

Remarks:

QC Reviewer: YT Leung Signature: Date: 23-12-13

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AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Hong Kong SkyCity Marriott Hotel (AMS7)	Operator:	Choi Wing Ho
Cal. Date:	22-Oct-13	Next Due Date:	22-Dec-13
Equipment No.:	A-001-80T	Serial No.	3385

Ambient Condition			
Temperature, Ta (K)	298	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.94727	Intercept, bc	0.02332
Last Calibration Date:	20-May-13	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	20-May-14	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	7.9	2.81	1.43	46.0	46.02
13	6.5	2.55	1.30	40.0	40.01
10	5.2	2.28	1.16	33.0	33.01
7	4.1	2.03	1.03	25.0	25.01
5	3.0	1.73	0.88	19.0	19.01

By Linear Regression of Y on X

Slope , mw = 50.0524 **Intercept, bw =** -25.4011

Correlation Coefficient* = 0.9963

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2}$ = **39.65**

Remarks: _____

QC Reviewer: K. H. SHEK Signature: Mike Date: 23. Oct. 13

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

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 20, 2013 Rootsmeter S/N 0438320 Ta (K) - 297
Operator Tisch Orifice I.D. - 0988 Pa (mm) - 751.84

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	1.3900	3.2	2.00
2	NA	NA	1.00	0.9720	6.4	4.00
3	NA	NA	1.00	0.8670	7.9	5.00
4	NA	NA	1.00	0.8270	8.7	5.50
5	NA	NA	1.00	0.6800	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
0.9884	0.7110	1.4090
0.9842	1.0125	1.9926
0.9821	1.1327	2.2278
0.9811	1.1863	2.3365
0.9759	1.4352	2.8179

Qstd slope (m) = 1.94727
intercept (b) = 0.02332
coefficient (r) = 0.99998

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

Va	(x axis) Qa	(y axis)
0.9957	0.7163	0.8889
0.9915	1.0201	1.2570
0.9894	1.1412	1.4054
0.9884	1.1952	1.4740
0.9832	1.4459	1.7777

Qa slope (m) = 1.21935
intercept (b) = 0.01471
coefficient (r) = 0.99998

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}

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3***
Equipment No.:	***A.005.07a***
Sensitivity Adjustment Scale Setting:	***557 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *557* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *557* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-13*	*12:30 - 13:30*	*28.1*	*78*	*0.04714*	*1887*	*31.45*
2	*18-05-13*	*13:30 - 14:30*	*28.1*	*78*	*0.04932*	*1970*	*32.83*
3	*18-05-13*	*14:30 - 15:30*	*28.2*	*77*	*0.05156*	*2056*	*34.27*
4	*18-05-13*	*15:30 - 16:30*	*28.1*	*78*	*0.05083*	*2026*	*33.77*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9978*

Validity of Calibration Record: *17 May 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3***
Equipment No.:	***A.005.08a***
Sensitivity Adjustment Scale Setting:	***702 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *702* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *702* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-13*	*12:30 - 13:30*	*28.1*	*78*	*0.04714*	*1764*	*29.40*
2	*18-05-13*	*13:30 - 14:30*	*28.1*	*78*	*0.04932*	*1846*	*30.77*
3	*18-05-13*	*14:30 - 15:30*	*28.2*	*77*	*0.05156*	*1935*	*32.25*
4	*18-05-13*	*15:30 - 16:30*	*28.1*	*78*	*0.05083*	*1899*	*31.65*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0016*
Correlation coefficient: *0.9976*

Validity of Calibration Record: *17 May 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3***
Equipment No.:	***A.005.09a***
Sensitivity Adjustment Scale Setting:	***797 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o:	*12500*
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *797* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *797* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-13*	*12:30 - 13:30*	*28.1*	*78*	*0.04714*	*1885*	*31.42*
2	*18-05-13*	*13:30 - 14:30*	*28.1*	*78*	*0.04932*	*1965*	*32.75*
3	*18-05-13*	*14:30 - 15:30*	*28.2*	*77*	*0.05156*	*2059*	*34.32*
4	*18-05-13*	*15:30 - 16:30*	*28.1*	*78*	*0.05083*	*2024*	*33.73*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9973*

Validity of Calibration Record: *17 May 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: _____ Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3***
Equipment No.:	***A.005.10a***
Sensitivity Adjustment Scale Setting:	***753 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o:	*12500*
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *753* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *753* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-13*	*12:30 - 13:30*	*28.1*	*78*	*0.04714*	*1886*	*31.43*
2	*18-05-13*	*13:30 - 14:30*	*28.1*	*78*	*0.04932*	*1968*	*32.80*
3	*18-05-13*	*14:30 - 15:30*	*28.2*	*77*	*0.05156*	*2061*	*34.35*
4	*18-05-13*	*15:30 - 16:30*	*28.1*	*78*	*0.05083*	*2026*	*33.77*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9983*

Validity of Calibration Record: *17 May 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: _____ Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3***
Equipment No.:	***A.005.11a***
Sensitivity Adjustment Scale Setting:	***799 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o:	*12500*
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *799* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *799* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-13*	*12:15 - 13:15*	*28.1*	*78*	*0.04685*	*1871*	*31.18*
2	*18-05-13*	*13:15 - 14:15*	*28.1*	*78*	*0.04941*	*1979*	*32.98*
3	*18-05-13*	*14:15 - 15:15*	*28.2*	*77*	*0.05127*	*2055*	*34.25*
4	*18-05-13*	*15:15 - 16:15*	*28.1*	*78*	*0.05060*	*2021*	*33.68*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9976*

Validity of Calibration Record: *17 May 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3B***
Equipment No.:	***A.005.13a***
Sensitivity Adjustment Scale Setting:	***643 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *643* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *643* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-13*	*12:15 - 13:15*	*28.1*	*78*	*0.04685*	*1867*	*31.12*
2	*18-05-13*	*13:15 - 14:15*	*28.1*	*78*	*0.04941*	*1975*	*32.92*
3	*18-05-13*	*14:15 - 15:15*	*28.2*	*77*	*0.05127*	*2048*	*34.13*
4	*18-05-13*	*15:15 - 16:15*	*28.1*	*78*	*0.05060*	*2017*	*33.62*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9986*

Validity of Calibration Record: *17 May 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3B***
Equipment No.:	***A.005.14a***
Sensitivity Adjustment Scale Setting:	***786 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *786* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *786* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-13*	*12:15 - 13:15*	*28.1*	*78*	*0.04685*	*2005*	*33.42*
2	*18-05-13*	*13:15 - 14:15*	*28.1*	*78*	*0.04941*	*2121*	*35.35*
3	*18-05-13*	*14:15 - 15:15*	*28.2*	*77*	*0.05127*	*2194*	*36.57*
4	*18-05-13*	*15:15 - 16:15*	*28.1*	*78*	*0.05060*	*2167*	*36.12*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0014*
Correlation coefficient: *0.9987*

Validity of Calibration Record: *17 May 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 20 May 2013

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HOKLAS 028
CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 13CA0325 01-01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2285692 N009.04	,	2250420
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	25-Mar-2013

Date of test: 26-Mar-2013

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	22-Jun-2013	CIGISMEC
Signal generator	DS 360	33873	29-May-2013	CEPREI
Signal generator	DS 360	61227	29-May-2013	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 26-Mar-2013 **Company Chop:** SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 13CA0325 01-03 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-73
Serial/Equipment No.:	10186482 / N.004.09
Adaptors used:	-

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	25-Mar-2013

Date of test: 26-Mar-2013

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	29-May-2013	SCL
Preamplifier	B&K 2673	2239857	17-Dec-2013	CEPREI
Measuring amplifier	B&K 2610	2346941	17-Dec-2013	CEPREI
Signal generator	DS 360	61227	29-May-2013	CEPREI
Digital multi-meter	34401A	US36087050	10-Dec-2013	CEPREI
Audio analyzer	8903B	GB41300350	29-May-2013	CEPREI
Universal counter	53132A	MY40003662	29-May-2013	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on **page 2** of this certificate.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 26-Mar-2013 **Company Chop:** SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1327504
Date of Issue: 22/10/2013
Client: AECOM ASIA COMPANY LIMITED

Equipment Type: Multimeter
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12D100972
Equipment No.: W.026.36
Date of Calibration: 08 October, 2013 Date of next Calibration: 08 January, 2014

Parameters:

Conductivity

Method Ref: APHA (21st edition), 2510B

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	141.0	-4.0
6667	6232	-6.5
12890	12570	-2.5
58670	55110	-6.1
	Tolerance Limit (±%)	10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.55	3.44	-0.11
5.70	5.76	0.06
7.20	7.29	0.09
	Tolerance Limit (±mg/L)	0.20

pH Value

Method Ref: APHA 21st Ed. 4500H:B

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.10	0.10
7.0	7.06	0.06
10.0	10.03	0.03
	Tolerance Limit (±pH unit)	0.20

Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.07	--
10	9.99	-0.1
20	20.05	0.3
30	30.64	2.1
	Tolerance Limit (±%)	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1327504
Date of Issue: 22/10/2013
Client: AECOM ASIA COMPANY LIMITED

Description: Multimeter
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12D100972
Equipment No.: W.026.36
Date of Calibration: 08 October, 2013 Date of next Calibration: 08 January, 2014

Parameters:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
14.0	14.11	0.1
25.0	25.14	0.1
36.5	36.69	0.2
	Tolerance Limit (±°C)	2.0

Turbidity

Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.2	5.0
10	10.5	5.0
20	19.6	-2.0
50	48.2	-3.6
100	99.8	-0.2
	Tolerance Limit (±%)	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

ork Order: HK1331508
Date of Issue: 18/11/2013
Client: AECOM ASIA COMPANY LIMITED

Equipment Type: YSI Sonde
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 14 November, 2013 Date of next Calibration: 14 February, 2014

Parameters:

Conductivity

Method Ref: APHA (21st edition), 2510B

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	150.5	2.5
6667	6460	-3.1
12890	12710	-1.4
58670	58120	-0.9
	Tolerance Limit (±%)	10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.49	3.51	0.02
5.05	5.11	0.06
7.59	7.54	-0.05
	Tolerance Limit (±mg/L)	0.20

pH Value

Method Ref: APHA 21st Ed. 4500H:B

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	3.94	-0.06
7.0	6.98	-0.02
10.0	9.99	-0.01
	Tolerance Limit (±pH unit)	0.20

Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.01	--
10	9.77	-2.3
20	19.40	-3.0
30	29.73	-0.9
	Tolerance Limit (±%)	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard
General Manager - Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1331508
Date of Issue: 18/11/2013
Client: AECOM ASIA COMPANY LIMITED

Equipment Type: YSI Sonde
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 14 November, 2013 Date of next Calibration: 14 February, 2014

Parameters:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
16.5	16.42	-0.1
26.0	26.51	0.5
38.0	38.22	0.2
	Tolerance Limit (±°C)	2.0

Turbidity

Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0	--
4	3.8	-5.0
10	9.9	-1.0
20	19.2	-4.0
50	48.0	-4.0
100	99.1	-0.9
	Tolerance Limit (±%)	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard
General Manager
Greater China & Hong Kong

Hong Kong Boundary Crossing Facilities – Reclamation Works
Impact Monitoring Schedule for Dec 13

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Dec	02-Dec	03-Dec	04-Dec	05-Dec	06-Dec	07-Dec
	Mid-Flood 6:49 Mid-Ebb 12:25		Mid-Flood 8:33 Mid-Ebb 14:03	24-hour TSP 1-hour TSP Noise	Mid-Flood 10:13 Mid-Ebb 15:41	
08-Dec	09-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec
	Mid-Flood 12:57 Mid-Ebb 19:01		Mid-Ebb 7:41 Mid-Flood 14:45 24-hour TSP 1-hour TSP Noise		Mid-Ebb 10:03 Mid-Flood 16:06	
15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec
	Mid-Flood 7:13 Mid-Ebb 12:28	24-hour TSP 1-hour TSP Noise	Mid-Flood 8:26 Mid-Ebb 13:36	Dolphin Monitoring	Mid-Flood 9:30 Mid-Ebb 14:40	24-hour TSP 1-hour TSP Dolphin Monitoring
22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec
	Mid-Flood 11:10 Mid-Ebb 16:36		Mid-Flood 12:37 Mid-Ebb 18:47	Dolphin Monitoring	Mid-Ebb 7:27 Mid-Flood 14:11 24-hour TSP 1-hour TSP Noise	Dolphin Monitoring
29-Dec	30-Dec					
	Mid-Ebb 11:19 Mid-Flood 16:35					

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)
*

Hong Kong Boundary Crossing Facilities – Reclamation Works
Tentative Impact Monitoring Schedule for Jan 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Jan	02-Jan	03-Jan	04-Jan
			Mid-Flood 7:39 Mid-Ebb 13:04	24-hour TSP 1-hour TSP Noise	Mid-Flood 9:09 Mid-Ebb 14:38	
05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan
	Mid-Flood 11:20 Mid-Ebb 17:12 Dolphin Monitoring	24-hour TSP 1-hour TSP Noise Dolphin Monitoring	Mid-Flood 12:54 Mid-Ebb 19:29	Dolphin Monitoring	Mid-Ebb 8:11 Mid-Flood 14:29	
12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
	Mid-Ebb 11:36 Mid-Flood 16:43 24-hour TSP 1-hour TSP Noise Dolphin Monitoring		Mid-Flood 7:36 Mid-Ebb 12:44		Mid-Flood 8:30 Mid-Ebb 13:44	24-hour TSP 1-hour TSP
19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan
	Mid-Flood 9:46 Mid-Ebb 15:21		Mid-Flood 10:51 Mid-Ebb 16:48		Mid-Flood 12:14 Mid-Ebb 18:59 24-hour TSP 1-hour TSP Noise	
26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	01-Feb
	Mid-Ebb 10:09 Mid-Flood 15:13		Mid-Ebb 12:04 Mid-Flood 17:12 24-hour TSP 1-hour TSP Noise		Mid-Flood 8:04 Mid-Ebb 13:36	

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

Monitoring Periods on Monitoring Dates in December 2013

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
04/12/13	16:07:07	1.68	92.72
04/12/13	17:07:07	2.11	82.09
04/12/13	18:07:07	0.41	157.48
04/12/13	19:07:07	0.88	184.43
04/12/13	20:07:07	0.43	152.67
04/12/13	21:07:07	0.29	162.62
04/12/13	22:07:07	1.01	183.31
04/12/13	23:07:07	0.69	158.04
05/12/13	00:07:07	0.46	183.31
05/12/13	01:07:07	0.84	157.59
05/12/13	02:07:07	0.43	170.45
05/12/13	03:07:07	0.88	180.41
05/12/13	04:07:07	0.28	243.04
05/12/13	05:07:07	0.39	158.26
05/12/13	06:07:07	0.32	179.51
05/12/13	07:07:07	0.70	167.99
05/12/13	08:07:07	0.74	149.54
05/12/13	09:07:07	1.71	74.15
05/12/13	10:07:07	1.43	61.96
05/12/13	11:07:07	0.87	54.58
05/12/13	12:07:07	0.57	41.27
05/12/13	13:07:07	0.69	350.07
05/12/13	14:07:07	1.13	271.56
05/12/13	15:07:07	0.69	260.04
05/12/13	16:07:07	1.52	292.81
10/12/13	16:07:07	2.94	131.42
10/12/13	17:07:07	2.63	142.71
10/12/13	18:07:07	3.02	117.77
10/12/13	19:07:07	2.81	152.78
10/12/13	20:07:07	4.01	145.85
10/12/13	21:07:07	3.29	142.38
10/12/13	22:07:07	2.49	152.56
10/12/13	23:07:07	1.61	129.18
11/12/13	00:07:07	1.30	146.18
11/12/13	01:07:07	2.41	138.35
11/12/13	02:07:07	1.76	112.18
11/12/13	03:07:07	0.41	127.73
11/12/13	04:07:07	1.78	83.21
11/12/13	05:07:07	1.99	96.41
11/12/13	06:07:07	1.51	71.92
11/12/13	07:07:07	2.03	71.25
11/12/13	08:07:07	2.95	63.30
11/12/13	09:07:07	3.82	35.23
11/12/13	10:07:07	1.93	96.86
11/12/13	11:07:07	1.93	70.01
11/12/13	11:36:17	1.23	42.17
11/12/13	12:36:17	1.62	50.55
11/12/13	13:36:17	1.71	26.95
11/12/13	14:36:17	1.33	69.46
11/12/13	15:36:17	2.57	48.99
11/12/13	16:36:17	2.14	68.00
12/16/13	16:36:17	2.69	33.78
12/16/13	17:36:17	2.18	350.86
12/16/13	18:36:17	3.34	25.05
12/16/13	19:36:17	2.91	54.02
12/16/13	20:36:17	3.29	343.81
12/16/13	21:36:17	2.70	233.42
12/16/13	22:36:17	2.59	59.05
12/16/13	23:36:17	2.24	311.49
12/17/13	00:36:17	2.35	227.94
12/17/13	01:36:17	2.34	76.73
12/17/13	02:36:17	3.13	351.42
12/17/13	03:36:17	2.04	275.36
12/17/13	04:36:17	2.74	334.64
12/17/13	05:36:17	2.17	343.25
12/17/13	06:36:17	2.43	9.17
12/17/13	07:36:17	2.67	329.38
12/17/13	08:36:17	2.90	325.47
12/17/13	09:36:17	2.41	337.77
12/17/13	10:36:17	2.18	39.48
12/17/13	11:36:17	3.40	321.33
12/17/13	12:36:17	2.70	304.33
12/17/13	13:36:17	1.33	351.08
12/17/13	14:36:17	1.17	268.43
12/20/13	16:46:57	1.65	310.48
12/20/13	17:46:57	1.97	22.37
12/20/13	18:46:57	2.50	30.76
12/20/13	19:46:57	2.49	62.41
12/20/13	20:46:57	1.20	44.07
12/20/13	21:46:57	1.54	77.51
12/20/13	22:46:57	1.71	47.76
12/20/13	23:46:57	0.60	175.71
12/21/13	00:46:57	0.57	219.77
12/21/13	01:46:57	1.93	43.95
12/21/13	02:46:57	1.65	92.83
12/21/13	03:46:57	1.16	97.98
12/21/13	04:46:57	0.67	346.16
12/21/13	05:46:57	1.22	17.90

Monitoring Periods on Monitoring Dates in December 2013

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
12/21/13	07:46:57	0.60	121.24
12/21/13	08:46:57	0.66	20.69
12/21/13	09:46:57	1.05	353.32
12/21/13	10:46:57	2.67	13.42
12/21/13	11:46:57	2.70	18.79
12/21/13	12:46:57	0.46	321.44
12/21/13	13:43:42	0.39	89.03
12/21/13	14:43:42	2.63	353.43
12/21/13	15:43:42	1.41	352.09
12/21/13	16:43:42	1.43	327.93
12/27/13	09:43:42	5.02	31.32
12/27/13	10:43:42	3.19	46.42
12/27/13	11:43:42	3.75	57.38
12/27/13	12:43:42	2.76	61.40
12/27/13	13:43:42	2.97	38.81
12/27/13	14:43:42	0.95	57.60
12/27/13	15:43:42	3.32	12.30
12/27/13	16:43:42	1.71	9.62
12/27/13	17:43:42	3.25	17.00
12/27/13	18:43:42	2.31	17.45
12/27/13	19:43:42	2.77	11.63
12/27/13	20:43:42	1.04	151.89
12/27/13	21:43:42	6.78	160.05
12/27/13	22:43:42	6.01	187.68
12/27/13	23:43:42	5.16	186.89
12/28/13	00:43:42	5.18	182.98
12/28/13	01:43:42	5.29	184.32
12/28/13	02:43:42	4.97	237.56
12/28/13	03:43:42	5.44	187.90
12/28/13	04:43:42	5.33	185.55
12/28/13	05:43:42	5.72	249.53
12/28/13	06:43:42	5.72	9.06
12/28/13	07:43:42	4.74	266.19
12/28/13	08:43:42	4.41	240.47
12/28/13	09:43:42	4.32	323.34

Appendix I Impact Daytime Construction Noise Monitoring Results

Daytime Noise Monitoring Results at Station NMS2 - Seaview Crescent Tower 1

Date	Weather Condition	Noise Level for 30-min, dB(A)#				Averaged Wind Speed (m/s)	Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
05-Dec-13	Sunny	10:43	60	68	64	<5m/s	62.9	75	N
11-Dec-13	Fine	10:30	64	71	68	<5m/s	62.9	75	N
17-Dec-13	Cloudy	10:45	65	70	68	<5m/s	62.9	75	N
27-Dec-13	Sunny	10:35	64	70	67	<5m/s	62.9	75	N
		Min	60	68	64				
		Max	65	71	68				
		Average	--	--	67				

Daytime Noise Monitoring Results at Station NMS3A - Site Boundary of Site Office (WA2)

Date	Weather Condition	Noise Level for 30-min, dB(A)#				Averaged Wind Speed (m/s)	Baseline Noise Level, dB(A) ^	Limit Level, dB(A)**	Exceedance (Y/N)
		Time	L90	L10	Leq				
05-Dec-13	Sunny	11:15	61	68	65	<5m/s	66.3	70	N
11-Dec-13	Fine	13:45	66	72	69	<5m/s	66.3	70	N
17-Dec-13	Cloudy	10:20	64	70	67	<5m/s	66.3	70	N
27-Dec-13	Sunny	11:15	64	69	67	<5m/s	66.3	70	N
		Min	61	68	65				
		Max	66	72	69				
		Average	--	--	67				

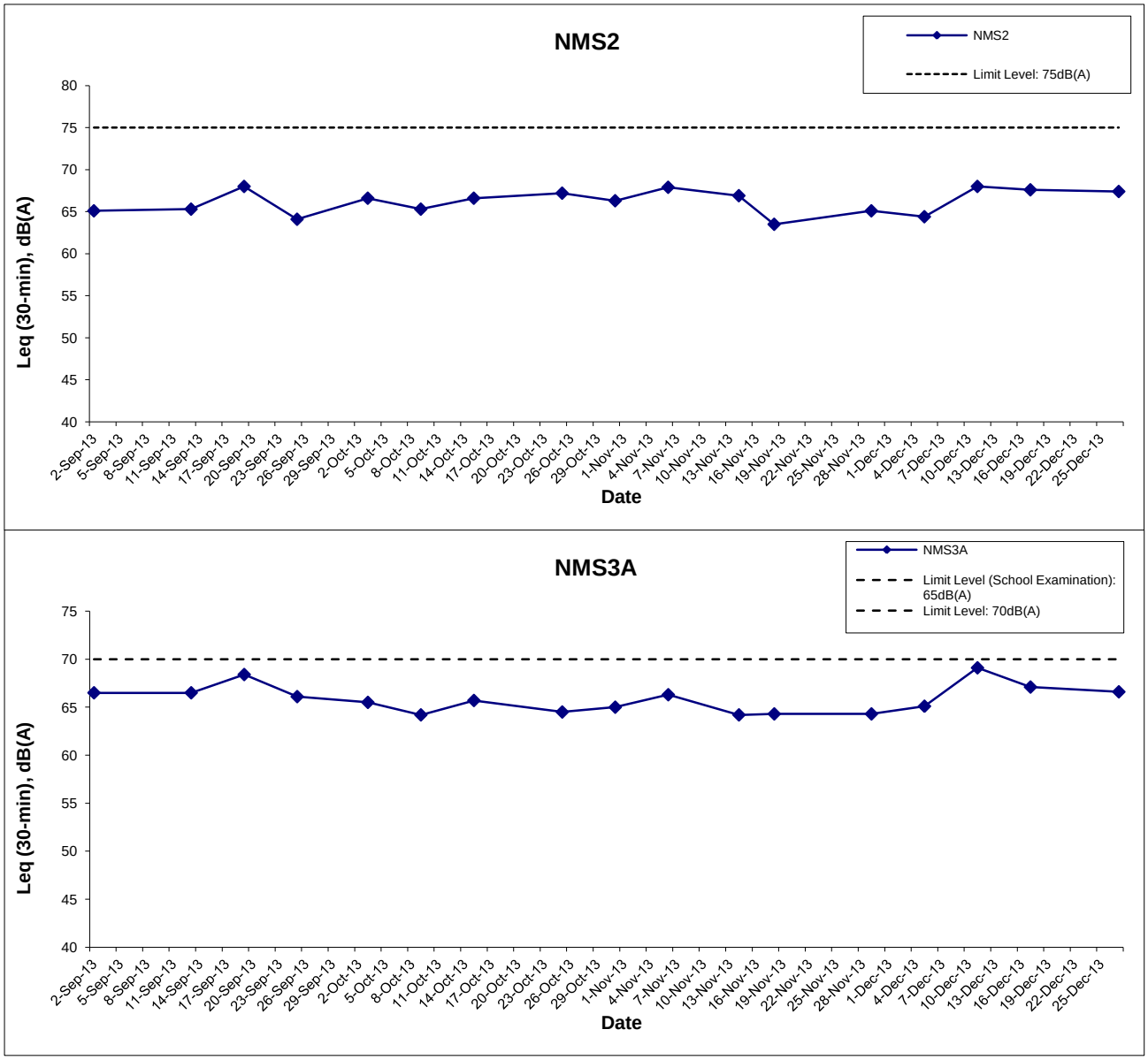
Remark:

A correction of +3dB(A) was made to the free field measurement.

* Façade measurement.

^ Averaged baseline noise level recorded at NMS3 Ho Yu College is adopted.

** Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.



Remarks: Effective from July 2012, the Limit Level at NMS3A was revised to 70dB(A). Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	11:57	6.4	Surface	1.0	20.5 20.5	20.5	8.3 8.3	8.3	32.9 32.9	32.9	97.6 97.5	97.6	7.2 7.2	7.2	7.2	4.3 4.1	4.2	4.3	9.4 9.1	9.3	9.9
					Middle	3.2	20.4 20.4	20.4	8.3 8.3	8.3	32.9 32.9	32.9	97.1 97.0	97.1	7.2 7.2	7.2		4.4 4.4	4.4		9.5 8.4	9.0	
					Bottom	5.4	20.4 20.3	20.3	8.3 8.3	8.3	32.9 32.9	32.9	97.1 96.9	97.0	7.2 7.2	7.2	7.2	4.3 4.2	4.3		10.7 11.8	11.3	
4-Dec-13	Sunny	Moderate	13:10	7.2	Surface	1.0	20.8 20.8	20.8	8.2 8.2	8.2	31.6 31.6	31.6	95.9 95.7	95.8	7.1 7.1	7.1	7.1	3.8 4.1	4.0	4.2	7.1 6.6	6.9	10.5
					Middle	3.6	20.7 20.8	20.8	8.2 8.2	8.2	31.8 31.7	31.7	95.4 95.4	95.4	7.1 7.1	7.1		4.2 4.3	4.3		10.5 12.0	11.3	
					Bottom	6.2	20.7 20.7	20.7	8.2 8.2	8.2	31.9 32.1	32.0	95.2 95.3	95.3	7.1 7.1	7.1	7.1	4.2 4.5	4.4		13.7 12.8	13.3	
6-Dec-13	Sunny	Moderate	15:04	6.9	Surface	1.0	20.4 20.4	20.4	8.2 8.2	8.2	31.3 31.3	31.3	94.2 94.1	94.2	7.1 7.1	7.1	7.1	5.0 4.8	4.9	5.3	9.5 9.3	9.4	9.5
					Middle	3.5	20.4 20.4	20.4	8.2 8.2	8.2	31.4 31.4	31.4	94.0 93.9	94.0	7.1 7.1	7.1		5.0 5.0	5.0		9.2 8.3	8.8	
					Bottom	5.9	20.4 20.3	20.4	8.2 8.2	8.2	31.8 32.0	31.9	93.9 93.9	93.9	7.0 7.0	7.0	7.0	5.9 6.1	6.0		10.3 10.0	10.2	
9-Dec-13	Sunny	Moderate	18:40	6.4	Surface	1.0	20.5 20.5	20.5	8.1 8.1	8.1	29.5 29.6	29.5	92.7 92.7	92.7	7.0 7.0	7.0	7.0	3.2 3.1	3.2	3.4	7.1 5.8	6.5	8.4
					Middle	3.2	20.4 20.5	20.5	8.1 8.1	8.1	30.0 29.9	30.0	92.6 92.8	92.7	7.0 7.0	7.0		3.1 3.2	3.2		8.8 7.5	8.2	
					Bottom	5.4	20.5 20.5	20.5	8.1 8.1	8.1	31.1 31.0	31.0	92.8 92.7	92.8	7.0 7.0	7.0	7.0	3.8 3.7	3.8		9.8 11.4	10.6	
11-Dec-13	Fine	Moderate	08:10	6.7	Surface	1.0	20.2 20.2	20.2	8.1 8.1	8.1	31.2 31.2	31.2	95.9 97.3	96.6	7.2 7.3	7.3	7.3	4.2 4.4	4.3	4.8	10.0 11.6	10.8	12.3
					Middle	3.4	20.2 20.2	20.2	8.1 8.1	8.1	31.3 31.2	31.3	98.4 95.9	97.2	7.4 7.2	7.3		5.0 4.7	4.9		11.6 12.0	11.8	
					Bottom	5.7	20.2 20.2	20.2	8.1 8.1	8.1	31.3 31.3	31.3	101.5 96.4	99.0	7.6 7.3	7.5	7.5	5.1 5.0	5.1		14.3 14.3	14.3	
13-Dec-13	Cloudy	Moderate	10:21	6.8	Surface	1.0	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	94.4 94.8	94.6	7.1 7.1	7.1	7.1	4.9 4.9	4.9	4.6	8.7 10.3	9.5	9.0
					Middle	3.4	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	94.7 95.2	95.0	7.1 7.1	7.1		4.5 4.6	4.6		8.5 9.0	8.8	
					Bottom	5.8	20.1 20.0	20.0	8.1 8.1	8.1	32.3 32.4	32.4	94.4 95.6	95.0	7.1 7.2	7.1	7.1	4.3 4.2	4.3		9.1 8.2	8.7	
16-Dec-13	Rainy	Moderate	12:00	6.3	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	33.0 33.0	33.0	94.8 94.7	94.8	7.2 7.1	7.1	7.1	6.7 6.9	6.8	6.9	13.1 12.5	12.8	13.3
					Middle	3.2	19.6 19.6	19.6	8.2 8.2	8.2	33.0 33.0	33.0	94.7 94.7	94.7	7.1 7.1	7.1		6.9 6.9	6.9		13.4 13.5	13.5	
					Bottom	5.3	19.6 19.6	19.6	8.2 8.2	8.2	33.0 33.0	33.0	94.5 94.5	94.5	7.1 7.1	7.1	7.1	7.0 6.7	6.9		13.8 13.4	13.6	
18-Dec-13	Sunny	Moderate	13:04	6.5	Surface	1.0	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	94.6 94.5	94.6	7.3 7.3	7.3	7.3	6.5 6.7	6.6	6.6	14.0 12.9	13.5	12.9
					Middle	3.3	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	94.3 94.5	94.4	7.2 7.3	7.2		6.6 6.6	6.6		12.4 12.5	12.5	
					Bottom	5.5	18.7 18.7	18.7	8.2 8.2	8.2	32.9 32.9	32.9	94.1 94.3	94.2	7.2 7.2	7.2	7.2	6.5 6.6	6.6		12.6 12.8	12.7	
20-Dec-13	Sunny	Moderate	14:22	6.5	Surface	1.0	17.9 17.9	17.9	8.2 8.2	8.2	31.4 31.4	31.4	95.8 95.9	95.9	7.5 7.5	7.5	7.5	4.7 4.6	4.7	5.4	6.9 7.0	7.0	7.1
					Middle	3.3	17.9 17.9	17.9	8.2 8.2	8.2	31.6 31.7	31.6	95.9 95.6	95.8	7.5 7.5	7.5		5.6 5.7	5.7		5.9 6.3	6.1	
					Bottom	5.5	17.9 17.9	17.9	8.2 8.2	8.2	31.7 32.0	31.8	95.9 95.4	95.7	7.5 7.5	7.5	7.5	5.8 5.5	5.7		8.6 7.5	8.1	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	15:58	7.0	Surface	1.0	17.6 17.6	17.6	8.3 8.3	8.3	30.2 30.2	30.2	96.9 96.7	96.8	7.7 7.7	7.7	7.7	3.0 2.9	3.0	3.7	6.9 6.0	6.5	6.8
					Middle	3.5	17.6 17.6	17.6	8.3 8.3	8.3	30.3 31.4	30.8	96.5 96.3	96.4	7.7 7.6	7.6		3.5 3.7	3.6		6.0 4.8	5.4	
					Bottom	6.0	17.6 17.6	17.6	8.3 8.3	8.3	32.0 32.0	32.0	96.5 95.8	96.2	7.6 7.5	7.6	7.6	4.7 4.5	4.6		7.9 8.9	8.4	
25-Dec-13	Sunny	Moderate	18:01	6.9	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	32.4 32.4	32.4	94.8 94.6	94.7	7.4 7.4	7.4	7.4	4.7 4.7	4.7	4.9	8.0 7.4	7.7	7.8
					Middle	3.5	17.9 17.9	17.9	8.2 8.2	8.2	32.6 32.6	32.6	94.7 94.4	94.6	7.4 7.4	7.4		4.9 4.8	4.9		7.5 7.8	7.7	
					Bottom	5.9	18.1 18.1	18.1	8.2 8.2	8.2	32.7 32.8	32.8	94.8 95.3	95.1	7.4 7.4	7.4	7.4	5.0 5.2	5.1		8.0 8.2	8.1	
27-Dec-13	Sunny	Moderate	07:44	6.6	Surface	1.0	17.6 17.8	17.7	8.1 8.1	8.1	33.2 33.3	33.2	96.5 95.4	96.0	7.5 7.4	7.5	7.5	2.1 2.2	2.2	2.2	8.7 8.0	8.4	8.8
					Middle	3.3	17.9 17.9	17.9	8.1 8.0	8.1	33.4 33.4	33.4	95.8 97.5	96.7	7.4 7.6	7.5		2.2 2.1	2.2		9.8 8.6	9.2	
					Bottom	5.6	17.9 17.8	17.9	8.0 8.1	8.0	33.4 33.4	33.4	98.9 96.4	97.7	7.7 7.5	7.6	7.6	2.3 2.2	2.3		8.2 9.5	8.9	
30-Dec-13	Sunny	Moderate	11:44	6.7	Surface	1.0	16.9 16.9	16.9	8.2 8.2	8.2	33.9 33.9	33.9	99.6 100.9	100.3	7.9 8.0	7.9	7.9	2.5 2.5	2.5	2.5	8.0 9.5	8.8	9.0
					Middle	3.4	16.9 16.9	16.9	8.2 8.2	8.2	34.0 34.0	34.0	99.5 101.4	100.5	7.9 8.0	7.9		2.6 2.4	2.5		9.3 9.1	9.2	
					Bottom	5.7	16.9 17.0	17.0	8.2 8.2	8.2	34.0 34.0	34.0	100.1 102.8	101.5	7.9 8.1	8.0	8.0	2.5 2.6	2.6		9.1 8.8	9.0	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	07:00	6.5	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	33.0 33.0	33.0	97.8 97.2	97.5	7.3 7.2	7.3	7.3	14.6 14.6	14.6	14.7	17.7 18.0	17.9	17.6
					Middle	3.3	20.3 20.3	20.3	8.2 8.2	8.2	33.0 33.0	33.0	97.2 97.9	97.6	7.2 7.3	7.3		15.0 14.7	14.9		15.4 14.7	15.1	
					Bottom	5.5	20.3 20.3	20.3	8.2 8.2	8.2	33.0 33.0	33.0	97.2 98.3	97.8	7.2 7.3	7.3	7.3	14.6 14.5	14.6		20.0 19.5	19.8	
4-Dec-13	Sunny	Moderate	08:45	7.0	Surface	1.0	20.5 20.5	20.5	8.2 8.2	8.2	32.6 32.5	32.6	97.0 97.6	97.3	7.2 7.3	7.2	7.2	16.0 16.3	16.2	16.4	29.3 28.5	28.9	**29.7**
					Middle	3.5	20.5 20.5	20.5	8.2 8.2	8.2	32.6 32.6	32.6	96.7 97.1	96.9	7.2 7.2	7.2		16.0 16.5	16.3		29.4 28.6	29.0	
					Bottom	6.0	20.5 20.5	20.5	8.2 8.2	8.2	32.6 32.6	32.6	97.0 96.6	96.8	7.2 7.2	7.2	7.2	16.7 16.5	16.6		31.8 30.5	31.2	
6-Dec-13	Sunny	Moderate	10:35	7.0	Surface	1.0	20.3 20.2	20.3	8.2 8.2	8.2	32.2 32.2	32.2	96.1 95.2	95.7	7.2 7.1	7.2	7.2	13.2 13.5	13.4	14.6	12.9 11.2	12.1	12.7
					Middle	3.5	20.2 20.2	20.2	8.2 8.2	8.2	32.3 32.4	32.3	94.9 95.9	95.4	7.1 7.2	7.1		13.8 14.2	14.0		12.8 13.8	13.3	
					Bottom	6.0	20.2 20.2	20.2	8.2 8.2	8.2	32.3 32.4	32.3	95.4 98.9	97.2	7.1 7.4	7.3	7.3	16.3 16.6	16.5		12.0 13.6	12.8	
9-Dec-13	Sunny	Moderate	13:10	6.5	Surface	1.0	20.6 20.6	20.6	8.1 8.1	8.1	30.8 30.8	30.8	95.5 96.0	95.8	7.2 7.2	7.2	7.2	4.7 4.9	4.8	5.5	6.1 5.5	5.8	6.0
					Middle	3.3	20.4 20.5	20.5	8.1 8.1	8.1	30.9 30.9	30.9	95.9 95.0	95.5	7.2 7.1	7.2		5.8 5.9	5.9		6.6 6.1	6.4	
					Bottom	5.5	20.4 20.3	20.4	8.1 8.1	8.1	30.9 30.9	30.9	95.3 96.7	96.0	7.2 7.3	7.2	7.2	5.7 5.8	5.8		5.6 6.2	5.9	
11-Dec-13	Sunny	Moderate	14:14	6.7	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	31.1 31.1	31.1	94.2 94.3	94.3	7.1 7.1	7.1	7.1	5.5 5.6	5.6	7.0	14.8 15.2	15.0	16.1
					Middle	3.4	20.3 20.3	20.3	8.2 8.2	8.2	31.2 31.2	31.2	93.4 93.3	93.4	7.0 7.0	7.0		7.8 8.2	8.0		15.4 15.8	15.6	
					Bottom	5.7	20.3 20.3	20.3	8.2 8.2	8.2	31.2 31.2	31.2	93.8 93.8	93.8	7.1 7.1	7.1	7.1	7.5 7.2	7.4		17.8 17.8	17.8	
13-Dec-13	Fine	Moderate	15:31	6.9	Surface	1.0	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	97.2 97.4	97.3	7.3 7.3	7.3	7.3	3.3 3.7	3.5	5.4	4.7 5.1	4.9	5.8
					Middle	3.5	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	96.9 96.6	96.8	7.3 7.3	7.3		4.7 4.5	4.6		6.3 6.6	6.5	
					Bottom	5.9	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.4	32.4	97.1 96.5	96.8	7.3 7.2	7.3	7.3	8.4 8.0	8.2		6.5 5.4	6.0	
16-Dec-13	Rainy	Moderate	07:24	6.7	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	33.3 33.3	33.3	96.6 97.6	97.1	7.3 7.3	7.3	7.3	11.4 11.2	11.3	11.3	14.7 14.5	14.6	14.9
					Middle	3.4	19.8 19.8	19.8	8.2 8.2	8.2	33.3 33.3	33.3	96.7 98.0	97.4	7.3 7.4	7.3		11.2 11.3	11.3		13.3 12.3	12.8	
					Bottom	5.7	19.8 19.8	19.8	8.2 8.2	8.2	33.3 33.3	33.3	97.0 99.4	98.2	7.3 7.5	7.4	7.4	11.2 11.1	11.2		17.2 17.3	17.3	
18-Dec-13	Sunny	Moderate	09:12	6.6	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	32.8 32.8	32.8	98.0 96.1	97.1	7.6 7.4	7.5	7.6	11.7 11.5	11.6	12.4	23.4 22.4	22.9	22.6
					Middle	3.3	18.3 18.3	18.3	8.2 8.2	8.2	32.9 32.8	32.8	99.4 96.5	98.0	7.7 7.5	7.6		12.5 12.4	12.5		22.1 22.8	22.5	
					Bottom	5.6	18.3 18.3	18.3	8.2 8.2	8.2	32.9 32.9	32.9	101.4 96.8	99.1	7.8 7.5	7.7	7.7	12.9 13.5	13.2		21.4 23.2	22.3	
20-Dec-13	Sunny	Moderate	09:29	6.7	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	32.5 32.5	32.5	97.0 97.9	97.5	7.6 7.7	7.7	7.7	7.9 7.8	7.9	8.4	13.0 13.7	13.4	13.4
					Middle	3.4	17.5 17.5	17.5	8.2 8.2	8.2	32.5 32.6	32.6	97.0 98.4	97.7	7.6 7.7	7.7		8.4 8.2	8.3		13.0 13.0	13.0	
					Bottom	5.7	17.5 17.5	17.5	8.2 8.2	8.2	32.6 32.5	32.6	99.3 97.3	98.3	7.8 7.7	7.7	7.7	8.9 8.9	8.9		13.8 13.8	13.8	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	11:18	7.0	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.0 32.1	32.1	98.8 97.4	98.1	7.8 7.7	7.8	7.8	4.4 4.3	4.4	5.5	7.1 7.2	7.2	8.6
					Middle	3.5	17.2 17.2	17.2	8.2 8.2	8.2	32.1 32.2	32.2	99.2 97.2	98.2	7.9 7.7	7.8		6.3 5.7	6.0		8.6 8.8	8.7	
					Bottom	6.0	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	97.6 101.0	99.3	7.7 8.0	7.9	7.9	6.0 6.2	6.1		9.6 9.9	9.8	
25-Dec-13	Sunny	Moderate	12:53	6.9	Surface	1.0	18.0 18.0	18.0	8.2 8.2	8.2	32.7 32.7	32.7	95.8 95.8	95.8	7.5 7.5	7.5	7.5	3.5 3.4	3.5	3.7	6.2 7.4	6.8	7.0
					Middle	3.5	18.0 18.0	18.0	8.2 8.2	8.2	32.7 32.8	32.7	95.6 95.6	95.6	7.5 7.4	7.4		3.6 3.7	3.7		7.6 6.3	7.0	
					Bottom	5.9	18.1 18.1	18.1	8.2 8.1	8.2	32.8 32.8	32.8	95.7 95.9	95.8	7.4 7.4	7.4	7.4	3.9 4.0	4.0		6.6 7.9	7.3	
27-Dec-13	Sunny	Moderate	13:47	6.5	Surface	1.0	17.7 17.7	17.7	8.2 8.2	8.2	33.2 33.2	33.2	96.6 96.5	96.6	7.5 7.5	7.5	7.5	2.5 2.4	2.5	2.6	6.3 5.7	6.0	6.5
					Middle	3.3	17.8 17.8	17.8	8.2 8.2	8.2	33.2 33.2	33.2	96.5 96.4	96.5	7.5 7.5	7.5		2.5 2.6	2.6		7.4 5.7	6.6	
					Bottom	5.5	17.8 17.8	17.8	8.2 8.2	8.2	33.3 33.3	33.3	96.6 96.5	96.6	7.5 7.5	7.5	7.5	2.7 2.7	2.7		6.7 7.2	7.0	
30-Dec-13	Sunny	Moderate	16:04	6.4	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	34.0 34.0	34.0	100.8 100.8	100.8	8.0 8.0	8.0	8.0	2.5 2.5	2.5	2.5	7.3 8.0	7.7	6.6
					Middle	3.2	16.9 16.9	16.9	8.3 8.3	8.3	34.0 34.0	34.0	100.5 100.5	100.5	7.9 7.9	7.9		2.5 2.6	2.6		7.6 6.0	6.8	
					Bottom	5.4	16.8 16.9	16.9	8.3 8.3	8.3	34.1 34.0	34.0	100.3 100.5	100.4	7.9 7.9	7.9	7.9	2.4 2.5	2.5		5.4 5.2	5.3	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS4 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	11:34	16.0	Surface	1.0	20.5 20.5	20.5	8.3 8.3	8.3	32.9 32.9	32.9	97.4 97.3	97.4	7.2 7.2	7.2	7.2	4.5 4.6	4.6		9.1 10.0	9.6	
					Middle	8.0	20.3 20.3	20.3	8.3 8.3	8.3	32.9 32.9	32.9	96.5 96.7	96.6	7.2 7.2	7.2		5.2 5.4	5.3	5.5	10.4 9.9	10.2	10.2
					Bottom	15.0	20.3 20.3	20.3	8.3 8.3	8.3	32.9 32.9	32.9	96.7 96.7	96.7	7.2 7.2	7.2	7.2	6.5 6.5	6.5		11.4 9.9	10.7	
4-Dec-13	Sunny	Moderate	12:58	18.1	Surface	1.0	20.8 20.8	20.8	8.2 8.2	8.2	31.6 31.8	31.7	95.9 95.4	95.7	7.1 7.1	7.1	7.1	4.0 4.0	4.0		8.0 6.5	7.3	
					Middle	9.1	20.7 20.7	20.7	8.2 8.2	8.2	32.0 32.0	32.0	95.0 95.4	95.2	7.1 7.1	7.1		4.8 4.5	4.7	4.5	7.8 7.1	7.5	7.4
					Bottom	17.1	20.7 20.7	20.7	8.2 8.2	8.2	32.2 32.2	32.2	95.0 95.1	95.1	7.1 7.1	7.1	7.1	4.9 4.5	4.7		8.2 6.8	7.5	
6-Dec-13	Sunny	Moderate	14:46	18.3	Surface	1.0	20.4 20.4	20.4	8.2 8.2	8.2	31.3 31.3	31.3	94.4 94.3	94.4	7.1 7.1	7.1	7.1	5.3 5.6	5.5		8.7 10.4	9.6	
					Middle	9.2	20.4 20.4	20.4	8.2 8.2	8.2	31.9 32.0	31.9	94.2 94.1	94.2	7.1 7.0	7.0		7.1 6.9	7.0	6.8	10.9 10.3	10.6	10.4
					Bottom	17.3	20.2 20.3	20.3	8.2 8.2	8.2	32.1 32.1	32.1	93.7 93.8	93.8	7.0 7.0	7.0	7.0	7.7 8.0	7.9		10.8 10.9	10.9	
9-Dec-13	Sunny	Moderate	18:15	16.9	Surface	1.0	20.5 20.5	20.5	8.1 8.1	8.1	29.6 29.6	29.6	93.1 93.1	93.1	7.0 7.0	7.0	7.0	3.3 3.4	3.4		5.4 6.8	6.1	
					Middle	8.5	20.5 20.4	20.5	8.1 8.1	8.1	31.1 31.3	31.2	93.0 92.8	92.9	7.0 7.0	7.0		3.6 3.5	3.6	3.9	6.1 7.8	7.0	6.6
					Bottom	15.9	20.4 20.4	20.4	8.1 8.1	8.1	31.4 31.2	31.3	92.5 92.6	92.6	6.9 7.0	6.9	6.9	4.6 4.5	4.6		6.6 6.8	6.7	
11-Dec-13	Fine	Moderate	08:32	18.2	Surface	1.0	20.2 20.2	20.2	8.1 8.1	8.1	31.3 31.2	31.2	94.5 94.7	94.6	7.1 7.1	7.1	7.1	4.4 4.3	4.4		10.0 11.6	10.8	
					Middle	9.1	20.2 20.2	20.2	8.1 8.1	8.1	31.3 31.3	31.3	94.0 94.0	94.0	7.1 7.1	7.1		5.4 5.2	5.3	5.2	13.4 13.2	13.3	12.8
					Bottom	17.2	20.2 20.2	20.2	8.1 8.1	8.1	31.3 31.3	31.3	94.1 94.1	94.1	7.1 7.1	7.1	7.1	5.9 5.7	5.8		13.9 14.9	14.4	
13-Dec-13	Cloudy	Moderate	10:40	18.3	Surface	1.0	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	94.9 95.0	95.0	7.1 7.1	7.1	7.1	4.7 4.4	4.6		7.9 8.5	8.2	
					Middle	9.2	20.0 20.0	20.0	8.1 8.1	8.1	32.4 32.4	32.4	95.3 94.9	95.1	7.2 7.1	7.1		3.8 3.5	3.7	4.1	9.4 7.8	8.6	8.8
					Bottom	17.3	20.0 20.0	20.0	8.1 8.1	8.1	32.4 32.4	32.4	94.2 94.7	94.5	7.1 7.1	7.1	7.1	3.7 4.0	3.9		10.2 8.7	9.5	
16-Dec-13	Rainy	Moderate	11:39	16.3	Surface	1.0	19.7 19.7	19.7	8.2 8.2	8.2	33.0 33.0	33.0	94.5 94.4	94.5	7.1 7.1	7.1	7.1	7.8 7.6	7.7		12.1 11.8	12.0	
					Middle	8.2	19.7 19.7	19.7	8.2 8.2	8.2	33.0 33.0	33.0	94.3 94.3	94.3	7.1 7.1	7.1		8.0 7.7	7.9	7.8	11.5 11.4	11.5	12.6
					Bottom	15.3	19.7 19.7	19.7	8.2 8.2	8.2	33.0 33.0	33.0	94.1 94.3	94.2	7.1 7.1	7.1	7.1	7.7 7.6	7.7		14.3 14.2	14.3	
18-Dec-13	Sunny	Moderate	12:42	16.9	Surface	1.0	18.8 18.8	18.8	8.2 8.2	8.2	32.9 32.9	32.9	94.3 94.3	94.3	7.2 7.2	7.2	7.2	8.5 8.4	8.5		14.2 13.6	13.9	
					Middle	8.5	18.8 18.8	18.8	8.2 8.2	8.2	32.9 32.9	32.9	94.1 93.9	94.0	7.2 7.2	7.2		8.3 8.6	8.5	8.5	13.2 13.8	13.5	14.0
					Bottom	15.9	18.8 18.8	18.8	8.2 8.2	8.2	32.9 32.9	32.9	94.1 93.9	94.0	7.2 7.2	7.2	7.2	8.5 8.6	8.6		14.2 15.1	14.7	
20-Dec-13	Sunny	Moderate	13:53	16.7	Surface	1.0	17.9 17.9	17.9	8.2 8.2	8.2	31.6 31.5	31.6	95.7 96.3	96.0	7.5 7.6	7.5	7.5	4.8 4.7	4.8		6.4 6.0	6.2	
					Middle	8.4	17.8 17.8	17.8	8.2 8.2	8.2	32.3 32.1	32.2	96.0 95.4	95.7	7.5 7.5	7.5		5.7 5.7	5.7	5.4	5.6 5.0	5.3	6.0
					Bottom	15.7	17.7 17.8	17.8	8.2 8.2	8.2	32.5 32.2	32.4	97.1 95.7	96.4	7.6 7.5	7.6	7.6	5.7 5.6	5.7		7.1 6.0	6.6	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS4 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	15:40	18.4	Surface	1.0	17.6 17.6	17.6	8.3 8.3	8.3	30.3 30.3	30.3	97.0 97.0	97.0	7.7 7.7	7.7	7.6	2.6 2.6	2.6	3.9	7.1 6.5	6.8	6.9
					Middle	9.2	17.6 17.7	17.7	8.3 8.3	8.3	32.0 32.2	32.1	96.0 95.8	95.9	7.6 7.5	7.5		4.4 4.6	4.5		6.5 6.8	6.7	
					Bottom	17.4	17.6 17.7	17.7	8.3 8.3	8.3	32.2 32.2	32.2	95.7 96.1	95.9	7.5 7.5	7.5	7.5	4.6 4.8	4.7		7.2 7.4	7.3	
25-Dec-13	Sunny	Moderate	17:43	18.3	Surface	1.0	17.7 17.8	17.8	8.2 8.2	8.2	32.3 32.3	32.3	96.3 96.3	96.3	7.6 7.5	7.5	7.5	4.6 4.3	4.5	4.8	8.3 7.7	8.0	7.5
					Middle	9.2	17.9 17.7	17.8	8.2 8.2	8.2	32.6 32.4	32.5	96.1 95.6	95.9	7.5 7.5	7.5		4.7 4.8	4.8		7.4 7.0	7.2	
					Bottom	17.3	18.1 18.1	18.1	8.2 8.2	8.2	32.8 32.8	32.8	95.9 96.0	96.0	7.5 7.5	7.5	7.5	4.9 5.1	5.0		7.9 6.9	7.4	
27-Dec-13	Sunny	Moderate	08:13	17.0	Surface	1.0	17.7 17.7	17.7	8.1 8.1	8.1	33.2 33.3	33.2	94.5 94.3	94.4	7.4 7.4	7.4	7.4	2.1 2.1	2.1	2.1	7.9 6.3	7.1	7.1
					Middle	8.5	18.0 18.0	18.0	8.1 8.1	8.1	33.5 33.5	33.5	94.3 94.3	94.3	7.3 7.3	7.3		2.1 2.1	2.1		7.7 7.2	7.5	
					Bottom	16.0	18.0 17.9	17.9	8.1 8.1	8.1	33.5 33.5	33.5	94.7 94.7	94.7	7.3 7.4	7.3	7.3	2.1 2.2	2.2		6.7 6.8	6.8	
30-Dec-13	Sunny	Moderate	12:10	17.3	Surface	1.0	16.9 16.9	16.9	8.2 8.2	8.2	33.9 33.9	33.9	98.5 98.6	98.6	7.8 7.8	7.8	7.8	3.5 3.7	3.6	3.6	8.1 8.0	8.1	8.2
					Middle	8.7	17.0 16.9	17.0	8.2 8.2	8.2	34.0 34.0	34.0	98.0 98.4	98.2	7.7 7.8	7.7		3.6 3.5	3.6		6.3 6.6	6.5	
					Bottom	16.3	16.9 17.0	16.9	8.2 8.2	8.2	34.0 34.0	34.0	98.6 99.1	98.9	7.8 7.8	7.8	7.8	3.6 3.6	3.6		10.4 9.7	10.1	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS4 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	07:28	16.6	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	33.0 33.0	33.0	96.5 96.4	96.5	7.2 7.2	7.2	7.2	13.2 13.1	13.2	13.7	16.1 15.7	15.9	17.2
					Middle	8.3	20.3 20.3	20.3	8.2 8.2	8.2	33.0 33.0	33.0	96.2 95.8	96.0	7.2 7.1	7.1		13.2 13.5	13.4		17.2 16.7	17.0	
					Bottom	15.6	20.3 20.3	20.3	8.2 8.2	8.2	30.5 33.0	31.8	94.9 96.2	95.6	7.2 7.2	7.2	7.2	14.5 14.7	14.6		17.8 19.7	18.8	
4-Dec-13	Sunny	Moderate	08:56	18.1	Surface	1.0	20.5 20.5	20.5	8.2 8.2	8.2	32.6 32.6	32.6	96.0 96.3	96.2	7.1 7.2	7.2	7.2	17.0 17.1	17.1	17.4	30.5 28.3	29.4	**31.9**
					Middle	9.1	20.5 20.5	20.5	8.2 8.2	8.2	32.6 32.6	32.6	95.9 96.0	96.0	7.1 7.1	7.1		17.5 17.4	17.5		33.4 32.0	32.7	
					Bottom	17.1	20.5 20.5	20.5	8.2 8.2	8.2	32.6 32.6	32.6	95.8 95.9	95.9	7.1 7.1	7.1	7.1	17.6 17.6	17.6		33.6 33.8	33.7	
6-Dec-13	Sunny	Moderate	10:55	18.1	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	32.2 32.2	32.2	94.8 94.8	94.8	7.1 7.1	7.1	7.1	14.0 13.5	13.8	14.0	11.5 11.8	11.7	12.1
					Middle	9.1	20.2 20.2	20.2	8.2 8.2	8.2	32.3 32.3	32.3	93.8 94.0	93.9	7.0 7.0	7.0		13.2 13.9	13.6		12.4 12.2	12.3	
					Bottom	17.1	20.2 20.2	20.2	8.2 8.2	8.2	32.3 32.3	32.3	94.0 94.0	94.0	7.0 7.0	7.0	7.0	14.5 14.7	14.6		11.8 12.6	12.2	
9-Dec-13	Sunny	Moderate	13:37	17.4	Surface	1.0	20.6 20.6	20.6	8.1 8.1	8.1	30.8 30.8	30.8	94.4 94.6	94.5	7.1 7.1	7.1	7.1	6.6 6.5	6.6	6.6	4.8 5.3	5.1	4.9
					Middle	8.7	20.3 20.3	20.3	8.1 8.1	8.1	30.9 30.9	30.9	93.4 93.2	93.3	7.0 7.0	7.0		6.5 6.5	6.5		5.0 5.3	5.2	
					Bottom	16.4	20.3 20.3	20.3	8.1 8.1	8.1	31.0 30.9	31.0	93.9 93.5	93.7	7.1 7.0	7.1	7.1	6.8 6.4	6.6		4.2 4.6	4.4	
11-Dec-13	Sunny	Moderate	13:54	18.1	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	31.1 31.1	31.1	94.3 94.3	94.3	7.1 7.1	7.1	7.1	5.8 5.7	5.8	7.9	16.6 16.7	16.7	17.3
					Middle	9.1	20.3 20.3	20.3	8.2 8.2	8.2	31.2 31.2	31.2	93.1 93.1	93.1	7.0 7.0	7.0		9.1 8.8	9.0		17.8 17.4	17.6	
					Bottom	17.1	20.3 20.3	20.3	8.2 8.2	8.2	31.2 31.2	31.2	93.8 93.7	93.8	7.1 7.1	7.1	7.1	9.1 8.7	8.9		17.5 17.5	17.5	
13-Dec-13	Fine	Moderate	15:09	18.1	Surface	1.0	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	97.3 97.0	97.2	7.3 7.3	7.3	7.3	3.5 3.6	3.6	4.4	6.7 5.1	5.9	6.0
					Middle	9.1	20.1 20.1	20.1	8.1 8.1	8.1	32.4 32.4	32.4	96.8 96.7	96.8	7.3 7.3	7.3		5.0 5.4	5.2		7.3 5.1	6.2	
					Bottom	17.1	20.1 20.1	20.1	8.1 8.1	8.1	32.4 32.4	32.4	96.9 97.1	97.0	7.3 7.3	7.3	7.3	4.4 4.2	4.3		5.6 6.0	5.8	
16-Dec-13	Rainy	Moderate	07:56	17.0	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	33.2 33.2	33.2	95.6 95.7	95.7	7.2 7.2	7.2	7.2	9.5 9.2	9.4	10.7	15.1 14.5	14.8	16.2
					Middle	8.5	19.8 19.8	19.8	8.2 8.2	8.2	33.3 33.3	33.3	95.4 95.7	95.6	7.2 7.2	7.2		11.2 11.4	11.3		15.9 15.9	15.9	
					Bottom	16.0	19.8 19.8	19.8	8.2 8.2	8.2	33.3 33.3	33.3	95.7 95.5	95.6	7.2 7.2	7.2	7.2	11.2 11.5	11.4		17.8 18.2	18.0	
18-Dec-13	Sunny	Moderate	09:31	17.3	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	32.8 32.8	32.8	94.9 95.2	95.1	7.3 7.4	7.4	7.4	12.3 12.0	12.2	12.2	19.7 20.2	20.0	20.7
					Middle	8.7	18.3 18.3	18.3	8.2 8.2	8.2	32.9 32.9	32.9	95.0 94.8	94.9	7.3 7.3	7.3		12.1 12.2	12.2		21.3 20.7	21.0	
					Bottom	16.3	18.3 18.3	18.3	8.2 8.2	8.2	32.9 32.9	32.9	95.0 94.7	94.9	7.4 7.3	7.3	7.3	12.1 12.2	12.2		21.6 20.6	21.1	
20-Dec-13	Sunny	Moderate	09:55	17.2	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	32.5 32.5	32.5	96.2 96.0	96.1	7.6 7.6	7.6	7.6	11.4 11.4	11.4	11.5	16.7 15.9	16.3	16.4
					Middle	8.6	17.5 17.5	17.5	8.2 8.2	8.2	32.6 32.6	32.6	96.0 95.7	95.9	7.6 7.5	7.5		11.3 11.6	11.5		16.8 16.8	16.8	
					Bottom	16.2	17.5 17.5	17.5	8.2 8.2	8.2	32.5 32.6	32.6	95.9 96.3	96.1	7.5 7.6	7.6	7.6	11.5 11.9	11.7		16.0 16.0	16.0	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS4 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	11:37	18.5	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.0 31.9	32.0	96.5 96.9	96.7	7.7 7.7	7.7	7.7	6.5 6.1	6.3	7.9	7.5 7.8	7.7	7.9
					Middle	9.3	17.3 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	96.1 96.0	96.1	7.6 7.6	7.6		7.9 8.8	8.4		6.6 7.2	6.9	
					Bottom	17.5	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	96.1 96.1	96.1	7.6 7.6	7.6	7.6	9.0 8.7	8.9		8.3 9.6	9.0	
25-Dec-13	Sunny	Moderate	13:12	18.4	Surface	1.0	18.0 17.9	18.0	8.2 8.2	8.2	32.7 32.7	32.7	95.3 95.1	95.2	7.4 7.4	7.4	7.4	4.1 4.1	4.1	4.3	5.9 5.8	5.9	6.3
					Middle	9.2	18.0 18.1	18.1	8.2 8.2	8.2	32.8 32.8	32.8	95.1 95.3	95.2	7.4 7.4	7.4		4.3 4.2	4.3		5.5 5.6	5.6	
					Bottom	17.4	18.1 18.1	18.1	8.2 8.2	8.2	32.9 32.8	32.9	95.2 95.5	95.4	7.4 7.4	7.4	7.4	4.5 4.3	4.4		7.7 7.1	7.4	
27-Dec-13	Sunny	Moderate	13:20	17.0	Surface	1.0	17.7 17.7	17.7	8.2 8.2	8.2	33.2 33.2	33.2	96.9 96.7	96.8	7.6 7.5	7.6	7.6	6.2 6.1	6.2	6.5	7.4 6.1	6.8	6.7
					Middle	8.5	17.8 17.8	17.8	8.2 8.2	8.2	33.3 33.3	33.3	96.4 96.6	96.5	7.5 7.5	7.5		6.5 6.3	6.4		6.9 5.2	6.1	
					Bottom	16.0	17.8 17.8	17.8	8.2 8.2	8.2	33.3 33.3	33.3	96.6 96.9	96.8	7.5 7.6	7.5	7.5	6.8 6.7	6.8		6.8 7.8	7.3	
30-Dec-13	Sunny	Moderate	15:39	16.4	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	34.0 34.0	34.0	100.0 100.6	100.3	7.9 7.9	7.9	7.9	2.7 2.8	2.8	4.4	8.2 7.8	8.0	7.1
					Middle	8.2	16.8 16.8	16.8	8.3 8.3	8.3	34.1 34.0	34.1	98.6 99.8	99.2	7.8 7.9	7.8		4.2 4.1	4.2		6.2 6.4	6.3	
					Bottom	15.4	16.8 16.8	16.8	8.3 8.3	8.3	34.1 34.1	34.1	99.4 98.6	99.0	7.9 7.8	7.8	7.8	6.0 6.4	6.2		6.8 7.2	7.0	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	12:17	13.8	Surface	1.0	21.4 21.4	21.4	8.0 7.9	8.0	33.2 33.2	33.2	92.2 94.5	93.4	6.7 6.9	6.8	6.9	4.2 4.4	4.3	5.2	5.4 4.9	5.2	7.0
					Middle	6.9	21.3 21.4	21.4	7.9 7.9	7.9	33.2 33.2	33.2	92.1 96.3	94.2	6.7 7.0	6.9		4.6 4.8	4.7		6.6 8.5	7.6	
					Bottom	12.8	21.3 21.4	21.4	7.9 7.9	7.9	33.2 33.2	33.2	99.5 92.6	96.1	7.3 6.8	7.0	7.0	6.0 7.0	6.5		8.8 7.6	8.2	
4-Dec-13	Sunny	Moderate	14:13	12.6	Surface	1.0	21.1 21.1	21.1	8.0 8.0	8.0	32.5 32.5	32.5	96.3 95.4	95.9	7.1 7.0	7.1	7.0	5.8 5.6	5.7	6.9	7.6 5.9	6.8	7.2
					Middle	6.3	21.0 20.9	20.9	8.0 8.0	8.0	32.6 32.6	32.6	94.3 94.1	94.2	7.0 6.9	6.9		6.6 6.6	6.6		6.4 5.4	5.9	
					Bottom	11.6	20.9 20.9	20.9	8.0 7.9	8.0	32.7 32.7	32.7	93.3 94.3	93.8	6.9 7.0	6.9	6.9	8.5 8.2	8.4		9.8 8.2	9.0	
6-Dec-13	Sunny	Moderate	15:47	12.9	Surface	1.0	20.7 20.7	20.7	7.9 7.9	7.9	32.3 32.3	32.3	92.4 92.2	92.3	6.9 6.8	6.8	6.8	6.5 6.7	6.6	7.9	8.0 8.0	8.0	7.5
					Middle	6.5	20.7 20.7	20.7	7.9 7.9	7.9	32.5 32.5	32.5	91.7 91.7	91.7	6.8 6.8	6.8		8.5 8.7	8.6		6.5 6.7	6.6	
					Bottom	11.9	20.7 20.7	20.7	7.9 7.9	7.9	32.5 32.6	32.5	92.0 92.0	92.0	6.8 6.8	6.8	6.8	8.2 8.9	8.6		8.2 7.7	8.0	
9-Dec-13	Sunny	Moderate	18:42	13.6	Surface	1.0	20.7 20.7	20.7	8.0 8.0	8.0	31.8 31.9	31.9	93.1 92.8	93.0	6.9 6.9	6.9	6.9	3.5 3.3	3.4	4.6	3.9 3.4	3.7	4.9
					Middle	6.8	20.6 20.6	20.6	8.0 8.0	8.0	32.3 32.3	32.3	91.7 91.9	91.8	6.8 6.8	6.8		4.8 5.2	5.0		5.6 4.7	5.2	
					Bottom	12.6	20.6 20.6	20.6	8.0 7.9	8.0	32.3 32.4	32.3	92.6 93.3	93.0	6.9 6.9	6.9	6.9	5.2 5.5	5.4		5.3 6.2	5.8	
11-Dec-13	Fine	Moderate	07:24	12.8	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	31.5 31.5	31.5	91.3 92.2	91.8	6.9 6.9	6.9	6.9	3.2 3.3	3.3	3.3	13.0 12.8	12.9	13.8
					Middle	6.4	20.5 20.6	20.6	7.9 7.9	7.9	32.2 32.3	32.3	91.1 92.8	92.0	6.8 6.9	6.8		3.2 3.2	3.2		13.6 13.4	13.5	
					Bottom	11.8	20.6 20.7	20.6	7.9 7.9	7.9	32.6 32.6	32.6	92.2 95.0	93.6	6.8 7.0	6.9	6.9	3.4 3.3	3.4		15.3 14.5	14.9	
13-Dec-13	Cloudy	Moderate	09:37	12.6	Surface	1.0	20.2 20.4	20.3	7.9 7.9	7.9	32.4 32.6	32.5	92.4 91.0	91.7	6.9 6.8	6.8	6.8	2.8 2.8	2.8	2.8	4.1 3.9	4.0	4.3
					Middle	6.3	20.6 20.6	20.6	7.9 7.9	7.9	33.1 33.1	33.1	91.4 92.9	92.2	6.8 6.9	6.8		2.9 2.7	2.8		4.7 4.2	4.5	
					Bottom	11.6	20.6 20.6	20.6	7.9 7.9	7.9	33.1 33.1	33.1	91.8 94.2	93.0	6.8 7.0	6.9	6.9	2.9 2.8	2.9		4.7 4.3	4.5	
16-Dec-13	Rainy	Moderate	12:12	13.0	Surface	1.0	20.1 20.1	20.1	8.0 8.0	8.0	33.1 33.1	33.1	97.6 97.2	97.4	7.6 7.5	7.6	7.6	4.7 4.7	4.7	4.9	4.7 5.0	4.9	5.5
					Middle	6.5	20.1 20.1	20.1	8.0 8.0	8.0	33.0 33.1	33.1	97.6 96.7	97.2	7.6 7.5	7.5		5.0 4.9	5.0		6.0 5.5	5.8	
					Bottom	12.0	20.1 20.1	20.1	8.0 8.0	8.0	33.1 33.1	33.1	97.2 96.4	96.8	7.5 7.5	7.5	7.5	5.0 5.2	5.1		5.9 5.9	5.9	
18-Dec-13	Sunny	Moderate	13:33	13.4	Surface	1.0	19.7 19.7	19.7	8.0 8.0	8.0	33.2 33.2	33.2	91.9 91.4	91.7	6.9 6.9	6.9	6.9	4.3 4.6	4.5	4.7	8.1 7.6	7.9	8.8
					Middle	6.7	19.7 19.7	19.7	8.0 8.0	8.0	33.2 33.2	33.2	91.4 92.0	91.7	6.9 6.9	6.9		4.8 4.8	4.8		7.6 7.2	7.4	
					Bottom	12.4	19.7 19.7	19.7	8.0 8.0	8.0	33.2 33.2	33.2	91.4 92.3	91.9	6.9 6.9	6.9	6.9	4.8 4.9	4.9		10.8 11.3	11.1	
20-Dec-13	Sunny	Moderate	14:33	13.3	Surface	1.0	19.3 19.3	19.3	8.0 8.0	8.0	33.3 33.3	33.3	94.8 95.5	95.2	7.2 7.2	7.2	7.2	3.4 3.3	3.4	3.4	6.4 5.8	6.1	6.4
					Middle	6.7	19.7 19.6	19.6	8.0 8.0	8.0	33.6 33.6	33.6	96.1 94.8	95.5	7.2 7.1	7.2		3.3 3.4	3.4		7.6 6.8	7.2	
					Bottom	12.3	19.7 19.7	19.7	8.0 8.0	8.0	33.5 33.6	33.6	98.8 95.1	97.0	7.4 7.1	7.3	7.3	3.5 3.3	3.4		5.8 6.0	5.9	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	16:42	12.7	Surface	1.0	18.7 18.7	18.7	8.0 8.0	8.0	32.9 32.9	32.9	92.5 93.2	92.9	7.1 7.2	7.1	7.1	3.3 3.1	3.2	3.4	4.4 5.8	5.1	5.6
					Middle	6.4	18.9 18.9	18.9	8.0 8.0	8.0	33.3 33.2	33.3	92.1 92.2	92.2	7.0 7.0	7.0		3.5 3.4	3.5		6.6 5.2	5.9	
					Bottom	11.7	19.0 19.0	19.0	8.0 8.0	8.0	33.5 33.5	33.5	93.2 92.8	93.0	7.1 7.1	7.1		3.4 3.4	3.4		5.5 6.1	5.8	
25-Dec-13	Sunny	Moderate	18:55	12.5	Surface	1.0	18.4 18.6	18.5	8.0 8.0	8.0	33.0 33.0	33.0	95.5 94.4	95.0	7.4 7.3	7.3	7.3	3.0 2.9	3.0	3.1	3.6 4.6	4.1	4.2
					Middle	6.3	18.8 18.8	18.8	8.0 8.0	8.0	33.5 33.6	33.6	94.7 95.2	95.0	7.2 7.3	7.2		3.0 3.0	3.0		4.0 4.4	4.2	
					Bottom	11.5	18.7 18.8	18.8	8.0 8.0	8.0	33.6 33.7	33.6	95.8 96.5	96.2	7.3 7.4	7.3	7.3	3.2 3.1	3.2		3.7 4.7	4.2	
27-Dec-13	Sunny	Moderate	06:56	13.4	Surface	1.0	18.6 18.6	18.6	8.0 8.0	8.0	33.8 33.8	33.8	97.5 93.4	95.5	7.5 7.1	7.3	7.3	2.4 2.2	2.3	2.3	4.6 6.0	5.3	6.5
					Middle	6.7	18.6 18.6	18.6	8.0 8.0	8.0	33.8 33.8	33.8	93.8 95.0	94.4	7.2 7.3	7.2		2.3 2.3	2.3		6.9 6.0	6.5	
					Bottom	12.4	18.6 18.6	18.6	8.0 8.0	8.0	33.8 33.8	33.8	94.3 94.1	94.2	7.2 7.2	7.2	7.2	2.4 2.3	2.4		8.4 6.9	7.7	
30-Dec-13	Sunny	Moderate	10:44	13.4	Surface	1.0	17.8 17.8	17.8	8.0 8.0	8.0	33.8 33.8	33.8	95.7 94.2	95.0	7.4 7.3	7.4	7.4	2.3 2.6	2.5	2.7	7.7 7.6	7.7	10.5
					Middle	6.7	17.8 17.7	17.8	8.0 8.0	8.0	33.8 33.8	33.8	94.0 97.4	95.7	7.3 7.6	7.4		2.9 2.9	2.9		9.9 10.1	10.0	
					Bottom	12.4	17.8 17.7	17.7	8.0 8.0	8.0	33.8 33.7	33.8	94.2 97.7	96.0	7.3 7.6	7.5	7.5	2.7 2.6	2.7		13.7 13.8	13.8	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:04	13.7	Surface	1.0	21.2 21.2	21.2	7.9 7.9	7.9	33.0 33.0	33.0	94.5 92.6	93.6	6.9 6.8	6.8	6.9	13.2 14.0	13.6	13.2	15.4 17.0	16.2	15.9
					Middle	6.9	21.2 21.2	21.2	7.9 7.9	7.9	33.0 33.0	33.0	97.1 92.6	94.9	7.1 6.8	6.9		13.5 13.4	13.5		15.4 16.4	15.9	
					Bottom	12.7	21.2 21.2	21.2	7.9 7.9	7.9	33.0 33.0	33.0	92.2 92.8	92.5	6.8 6.8	6.8	6.8	12.2 12.5	12.4		14.9 16.2	15.6	
4-Dec-13	Sunny	Moderate	08:15	13.0	Surface	1.0	20.7 20.7	20.7	7.9 8.0	8.0	32.5 32.5	32.5	96.4 95.3	95.9	7.1 7.1	7.1	7.1	14.6 13.9	14.3	14.6	10.1 10.1	10.1	11.0
					Middle	6.5	20.7 20.7	20.7	7.9 7.9	7.9	32.5 32.5	32.5	95.2 97.1	96.2	7.1 7.2	7.1		14.2 14.4	14.3		9.9 8.9	9.4	
					Bottom	12.0	20.7 20.7	20.7	7.9 7.9	7.9	32.5 32.5	32.5	98.2 95.2	96.7	7.3 7.1	7.2	7.2	15.3 15.1	15.2		14.0 12.9	13.5	
6-Dec-13	Sunny	Moderate	09:51	12.7	Surface	1.0	20.4 20.4	20.4	7.9 7.9	7.9	32.0 32.0	32.0	93.8 94.2	94.0	7.0 7.0	7.0	7.0	14.8 15.0	14.9	18.7	9.9 9.1	9.5	12.0
					Middle	6.4	20.3 20.3	20.3	7.9 7.9	7.9	32.1 32.1	32.1	93.2 94.0	93.6	7.0 7.0	7.0		20.8 20.2	20.5		13.0 13.4	13.2	
					Bottom	11.7	20.3 20.3	20.3	7.9 7.9	7.9	32.1 32.1	32.1	94.7 93.3	94.0	7.1 7.0	7.0	7.0	20.5 20.8	20.7		13.2 13.1	13.2	
9-Dec-13	Sunny	Moderate	12:23	13.6	Surface	1.0	20.4 20.5	20.4	7.9 7.9	7.9	31.4 31.3	31.4	91.1 91.5	91.3	6.8 6.9	6.8	6.8	9.2 8.8	9.0	10.8	7.9 7.3	7.6	8.4
					Middle	6.8	20.4 20.4	20.4	7.9 7.9	7.9	31.9 32.0	32.0	90.1 90.1	90.1	6.7 6.7	6.7		11.0 11.4	11.2		5.8 6.2	6.0	
					Bottom	12.6	20.4 20.4	20.4	7.9 7.9	7.9	31.9 31.9	31.9	91.4 90.7	91.1	6.8 6.8	6.8	6.8	12.3 11.8	12.1		11.3 12.1	11.7	
11-Dec-13	Sunny	Moderate	14:50	13.0	Surface	1.0	20.4 20.5	20.5	7.9 7.9	7.9	31.9 32.1	32.0	91.9 90.1	91.0	6.9 6.7	6.8	6.8	5.8 5.7	5.8	7.8	8.4 8.9	8.7	8.8
					Middle	6.5	20.7 20.7	20.7	7.9 7.9	7.9	32.6 32.7	32.7	90.2 92.3	91.3	6.7 6.8	6.8		8.7 8.5	8.6		8.4 8.6	8.5	
					Bottom	12.0	20.7 20.7	20.7	7.9 7.9	7.9	32.7 32.7	32.7	90.8 94.5	92.7	6.7 7.0	6.9	6.9	8.8 8.9	8.9		9.3 9.0	9.2	
13-Dec-13	Fine	Moderate	16:12	13.1	Surface	1.0	20.4 20.4	20.4	8.0 8.0	8.0	32.7 32.7	32.7	91.7 91.3	91.5	6.8 6.8	6.8	6.8	3.2 3.1	3.2	3.6	4.6 4.1	4.4	4.3
					Middle	6.6	20.5 20.6	20.5	8.0 8.0	8.0	33.0 33.1	33.1	90.9 90.9	90.9	6.7 6.7	6.7		3.7 3.8	3.8		5.0 4.5	4.8	
					Bottom	12.1	20.5 20.6	20.6	8.0 8.0	8.0	33.1 33.1	33.1	91.7 91.6	91.7	6.8 6.8	6.8	6.8	3.6 3.8	3.7		3.5 3.6	3.6	
16-Dec-13	Rainy	Moderate	06:39	13.0	Surface	1.0	20.2 20.2	20.2	8.0 8.0	8.0	33.0 33.0	33.0	99.1 90.5	94.8	7.4 6.8	7.1	7.0	8.6 8.8	8.7	8.9	11.2 10.3	10.8	10.9
					Middle	6.5	20.2 20.2	20.2	8.0 8.0	8.0	33.0 33.0	33.0	89.9 94.4	92.2	6.7 7.0	6.9		9.0 9.0	9.0		10.8 11.3	11.1	
					Bottom	12.0	20.2 20.2	20.2	8.0 8.0	8.0	33.0 33.0	33.0	89.9 91.1	90.5	6.7 6.8	6.7	6.7	9.0 9.0	9.0		10.0 11.5	10.8	
18-Dec-13	Sunny	Moderate	07:43	13.3	Surface	1.0	19.1 19.2	19.2	8.0 8.0	8.0	33.0 33.0	33.0	91.6 91.9	91.8	7.0 7.0	7.0	7.0	5.7 5.5	5.6	6.4	8.7 8.4	8.6	9.7
					Middle	6.7	19.2 19.2	19.2	8.0 8.0	8.0	33.0 33.0	33.0	91.5 92.1	91.8	7.0 7.0	7.0		6.2 6.4	6.3		9.8 7.9	8.9	
					Bottom	12.3	19.2 19.2	19.2	8.0 8.0	8.0	33.0 33.0	33.0	92.4 91.6	92.0	7.0 7.0	7.0	7.0	7.2 7.1	7.2		11.9 11.0	11.5	
20-Dec-13	Sunny	Moderate	09:00	13.4	Surface	1.0	18.3 18.3	18.3	7.9 7.9	7.9	32.7 32.7	32.7	94.1 93.7	93.9	7.3 7.3	7.3	7.3	6.6 6.4	6.5	6.9	9.3 8.3	8.8	8.9
					Middle	6.7	18.4 18.5	18.4	7.9 7.9	7.9	32.8 32.8	32.8	93.6 94.3	94.0	7.2 7.3	7.3		6.8 7.0	6.9		8.7 9.8	9.3	
					Bottom	12.4	18.5 18.4	18.4	7.9 7.9	7.9	32.8 32.8	32.8	95.0 93.7	94.4	7.3 7.2	7.3	7.3	7.3 7.2	7.3		9.1 8.3	8.7	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS(Mf)5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	10:23	12.7	Surface	1.0	17.8 17.9	17.8	7.9 8.0	8.0	32.1 32.0	32.1	94.2 93.3	93.8	7.4 7.3	7.4	7.3	5.6 5.6	5.6	7.0	6.0 5.8	5.9	6.3
					Middle	6.4	18.8 18.8	18.8	8.0 8.0	8.0	33.2 33.2	33.2	94.2 95.1	94.7	7.2 7.3	7.2		7.6 7.6	7.6		6.7 7.1	6.9	
					Bottom	11.7	18.8 18.9	18.8	8.0 8.0	8.0	33.5 33.4	33.4	95.4 96.7	96.1	7.3 7.4	7.3	7.3	7.6 7.8	7.7		6.1 6.0	6.1	
25-Dec-13	Sunny	Moderate	12:06	13.1	Surface	1.0	18.5 18.6	18.6	8.0 8.0	8.0	33.2 33.3	33.3	93.1 94.5	93.8	7.2 7.2	7.2	7.2	5.8 5.8	5.8	6.4	3.2 2.7	3.0	3.8
					Middle	6.6	18.7 18.7	18.7	8.0 8.0	8.0	33.5 33.5	33.5	93.0 95.1	94.1	7.1 7.3	7.2		6.5 6.6	6.6		3.8 4.5	4.2	
					Bottom	12.1	18.7 18.7	18.7	8.0 8.0	8.0	33.5 33.5	33.5	97.2 93.3	95.3	7.4 7.1	7.3	7.3	6.8 6.5	6.7		4.5 3.8	4.2	
27-Dec-13	Sunny	Moderate	14:09	13.3	Surface	1.0	18.5 18.5	18.5	8.1 8.1	8.1	33.6 33.6	33.6	93.9 95.5	94.7	7.2 7.3	7.3	7.3	2.8 3.0	2.9	4.0	6.3 4.7	5.5	6.2
					Middle	6.7	18.5 18.5	18.5	8.1 8.0	8.1	33.7 33.7	33.7	93.7 96.9	95.3	7.2 7.4	7.3		3.3 3.6	3.5		5.3 6.2	5.8	
					Bottom	12.3	18.5 18.5	18.5	8.1 8.0	8.1	33.7 33.7	33.7	94.1 102.0	98.1	7.2 7.8	7.5	7.5	5.6 5.8	5.7		6.5 8.2	7.4	
30-Dec-13	Sunny	Moderate	16:29	13.2	Surface	1.0	17.8 17.8	17.8	8.1 8.1	8.1	33.5 33.5	33.5	98.3 95.4	96.9	7.6 7.4	7.5	7.6	3.4 3.3	3.4	4.6	6.3 5.1	5.7	6.0
					Middle	6.6	17.8 17.8	17.8	8.1 8.1	8.1	33.6 33.6	33.6	95.0 100.5	97.8	7.4 7.8	7.6		4.9 4.8	4.9		5.8 6.4	6.1	
					Bottom	12.2	17.8 17.8	17.8	8.1 8.1	8.1	33.6 33.6	33.6	96.1 97.7	96.9	7.5 7.6	7.5	7.5	5.7 5.4	5.6		7.1 5.5	6.3	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	13:11	9.9	Surface	1.0	21.4 21.4	21.4	8.2 8.2	8.2	33.3 33.3	33.3	94.7 91.4	93.1	6.9 6.7	6.8	6.8	5.5 5.6	5.6	5.6	10.3 9.4	9.9	10.3
					Middle	5.0	21.4 21.4	21.4	8.2 8.2	8.2	33.3 33.3	33.3	91.4 93.5	92.5	6.7 6.8	6.7		5.5 5.6	5.6		9.5 10.8	10.2	
					Bottom	8.9	21.4 21.4	21.4	8.2 8.2	8.2	33.3 33.3	33.3	91.6 91.6	91.6	6.7 6.7	6.7	6.7	5.7 5.5	5.6		10.3 11.3	10.8	
4-Dec-13	Sunny	Moderate	14:09	10.1	Surface	1.0	21.1 21.1	21.1	8.2 8.2	8.2	33.1 33.1	33.1	100.2 93.8	97.0	7.4 6.9	7.1	7.1	3.3 3.1	3.2	3.3	7.4 6.9	7.2	7.4
					Middle	5.1	21.1 21.1	21.1	8.2 8.2	8.2	33.1 33.1	33.1	97.8 93.2	95.5	7.2 6.8	7.0		3.3 3.1	3.2		7.0 7.0	7.0	
					Bottom	9.1	21.1 21.1	21.1	8.2 8.2	8.2	33.1 33.1	33.1	96.1 93.1	94.6	7.1 6.8	6.9	6.9	3.7 3.4	3.6		8.6 7.2	7.9	
6-Dec-13	Sunny	Moderate	16:24	10.0	Surface	1.0	20.8 20.8	20.8	8.2 8.2	8.2	32.9 32.9	32.9	91.3 92.8	92.1	6.7 6.9	6.8	6.8	3.2 3.0	3.1	5.1	5.5 5.1	5.3	6.1
					Middle	5.0	20.8 20.8	20.8	8.2 8.2	8.2	33.0 33.0	33.0	92.8 90.4	91.6	6.8 6.7	6.8		5.3 5.1	5.2		5.9 7.0	6.5	
					Bottom	9.0	20.8 20.8	20.8	8.2 8.2	8.2	33.0 33.1	33.1	91.1 94.4	92.8	6.7 7.0	6.8	6.8	7.0 7.1	7.1		6.8 6.2	6.5	
9-Dec-13	Sunny	Moderate	19:49	9.9	Surface	1.0	20.7 20.7	20.7	8.2 8.1	8.2	32.4 32.4	32.4	93.4 92.1	92.8	6.9 6.8	6.9	6.9	2.3 2.3	2.3	2.3	4.5 5.4	5.0	5.6
					Middle	5.0	20.7 20.7	20.7	8.1 8.2	8.2	32.4 32.5	32.4	92.1 94.2	93.2	6.8 7.0	6.9		2.4 2.3	2.4		5.1 5.1	5.1	
					Bottom	8.9	20.7 20.7	20.7	8.1 8.2	8.2	32.5 32.5	32.5	92.4 95.4	93.9	6.9 7.1	7.0	7.0	2.3 2.3	2.3		6.2 6.9	6.6	
11-Dec-13	Fine	Moderate	06:48	9.6	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	31.9 31.9	31.9	91.8 92.4	92.1	6.9 6.9	6.9	6.9	2.3 2.3	2.3	2.1	10.9 10.4	10.7	11.2
					Middle	4.8	20.6 20.6	20.6	8.1 8.1	8.1	32.5 32.6	32.5	91.4 91.1	91.3	6.8 6.8	6.8		2.0 1.9	2.0		10.5 11.6	11.1	
					Bottom	8.6	20.6 20.7	20.7	8.1 8.1	8.1	32.9 32.9	32.9	91.5 91.0	91.3	6.8 6.7	6.8	6.8	1.9 1.9	1.9		11.7 11.9	11.8	
13-Dec-13	Cloudy	Moderate	08:57	10.1	Surface	1.0	20.6 20.6	20.6	8.2 8.2	8.2	33.3 33.3	33.3	90.0 90.0	90.0	6.7 6.7	6.7	6.7	3.1 3.0	3.1	3.3	4.5 4.8	4.7	4.9
					Middle	5.1	20.6 20.6	20.6	8.2 8.2	8.2	33.3 33.3	33.3	89.7 89.7	89.7	6.6 6.6	6.6		3.3 3.3	3.3		4.5 4.6	4.6	
					Bottom	9.1	20.6 20.6	20.6	8.2 8.2	8.2	33.3 33.3	33.3	89.6 89.6	89.6	6.6 6.6	6.6	6.6	3.7 3.5	3.6		5.3 5.5	5.4	
16-Dec-13	Rainy	Moderate	13:20	9.9	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	33.5 33.5	33.5	92.7 90.6	91.7	6.9 6.7	6.8	6.9	3.6 3.7	3.7	4.5	6.9 6.5	6.7	7.0
					Middle	5.0	20.4 20.4	20.4	8.1 8.1	8.1	33.5 33.5	33.5	90.8 94.1	92.5	6.7 7.0	6.9		4.8 4.8	4.8		5.9 6.4	6.2	
					Bottom	8.9	20.4 20.4	20.4	8.1 8.1	8.1	33.5 33.6	33.6	97.1 91.5	94.3	7.2 6.8	7.0	7.0	4.9 4.9	4.9		7.6 8.3	8.0	
18-Dec-13	Sunny	Moderate	14:23	10.2	Surface	1.0	19.9 19.8	19.9	8.2 8.2	8.2	33.6 33.6	33.6	93.3 92.0	92.7	7.0 6.9	6.9	7.0	2.5 2.5	2.5	3.1	8.0 9.2	8.6	8.4
					Middle	5.1	19.9 19.9	19.9	8.2 8.2	8.2	33.6 33.6	33.6	94.0 92.0	93.0	7.0 6.9	7.0		3.1 3.2	3.2		8.3 7.8	8.1	
					Bottom	9.2	19.9 19.9	19.9	8.2 8.2	8.2	33.7 33.6	33.7	95.4 92.3	93.9	7.1 6.9	7.0	7.0	3.7 3.6	3.7		8.5 8.6	8.6	
20-Dec-13	Sunny	Moderate	15:38	10.4	Surface	1.0	19.6 19.6	19.6	8.3 8.3	8.3	33.9 33.9	33.9	95.0 93.7	94.4	7.1 7.0	7.1	7.1	3.4 3.2	3.3	3.3	7.4 6.6	7.0	6.3
					Middle	5.2	19.6 19.6	19.6	8.3 8.3	8.3	33.9 33.9	33.9	95.9 93.5	94.7	7.2 7.0	7.1		3.2 3.3	3.3		6.3 5.6	6.0	
					Bottom	9.4	19.6 19.6	19.6	8.3 8.3	8.3	33.9 33.9	33.9	93.7 97.2	95.5	7.0 7.3	7.2	7.2	3.2 3.2	3.2		6.0 6.0	6.0	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	17:21	10.3	Surface	1.0	19.1 19.1	19.1	8.3 8.3	8.3	33.8 33.8	33.8	95.0 93.7	94.4	7.2 7.1	7.2	7.2	2.2 2.0	2.1	2.4	5.8 6.1	6.0	6.1
					Middle	5.2	19.1 19.1	19.1	8.3 8.3	8.3	33.8 33.8	33.8	93.5 96.6	95.1	7.1 7.3	7.2		2.4 2.3	2.4		5.4 4.9	5.2	
					Bottom	9.3	19.1 19.1	19.1	8.3 8.3	8.3	33.8 33.8	33.8	99.2 93.7	96.5	7.5 7.1	7.3	7.3	2.5 2.7	2.6		6.7 7.7	7.2	
25-Dec-13	Sunny	Moderate	19:17	10.1	Surface	1.0	19.0 19.0	19.0	8.2 8.2	8.2	33.9 33.9	33.9	93.7 93.6	93.7	7.1 7.1	7.1	7.1	0.9 0.8	0.9	1.1	4.3 5.6	5.0	5.0
					Middle	5.1	19.0 19.0	19.0	8.2 8.2	8.2	33.9 33.9	33.9	93.4 93.4	93.4	7.1 7.1	7.1		1.0 1.1	1.1		4.8 5.3	5.1	
					Bottom	9.1	19.0 19.0	19.0	8.2 8.2	8.2	33.9 33.9	33.9	93.2 93.3	93.3	7.1 7.1	7.1	7.1	1.1 1.2	1.2		5.3 4.7	5.0	
27-Dec-13	Sunny	Moderate	06:37	10.2	Surface	1.0	18.6 18.6	18.6	8.2 8.2	8.2	33.9 33.9	33.9	92.7 92.8	92.8	7.1 7.1	7.1	7.1	2.2 2.2	2.2	2.2	6.3 6.9	6.6	6.6
					Middle	5.1	18.7 18.7	18.7	8.2 8.2	8.2	33.9 33.9	33.9	92.4 92.7	92.6	7.1 7.1	7.1		2.2 2.2	2.2		6.3 6.9	6.6	
					Bottom	9.2	18.6 18.7	18.7	8.2 8.2	8.2	33.9 33.9	33.9	92.6 92.4	92.5	7.1 7.1	7.1	7.1	2.2 2.3	2.3		6.9 6.3	6.6	
30-Dec-13	Sunny	Moderate	10:25	10.3	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	34.1 34.1	34.1	92.6 92.7	92.7	7.2 7.2	7.2	7.2	2.4 2.3	2.4	2.5	5.3 4.7	5.0	6.2
					Middle	5.2	17.8 17.8	17.8	8.2 8.2	8.2	34.1 34.1	34.1	92.5 92.4	92.5	7.2 7.2	7.2		2.4 2.5	2.5		6.0 5.7	5.9	
					Bottom	9.3	17.8 17.8	17.8	8.2 8.2	8.2	34.1 34.1	34.1	92.3 92.4	92.4	7.2 7.2	7.2	7.2	2.6 2.5	2.6		7.4 7.9	7.7	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	05:51	10.3	Surface	1.0	21.3 21.3	21.3	8.2 8.2	8.2	33.3 33.3	33.3	91.8 91.9	91.9	6.7 6.7	6.7	6.7	8.6 8.7	8.7	10.3	16.3 15.6	16.0	17.4
					Middle	5.2	21.2 21.3	21.3	8.2 8.2	8.2	33.3 33.3	33.3	91.7 91.8	91.8	6.7 6.7	6.7		10.9 10.7	10.8		16.9 16.2	16.6	
					Bottom	9.3	21.2 21.2	21.2	8.2 8.2	8.2	33.3 33.2	33.3	91.4 91.4	91.4	6.7 6.7	6.7	6.7	11.5 11.5	11.5		19.8 19.5	19.7	
4-Dec-13	Sunny	Moderate	07:43	10.1	Surface	1.0	20.6 20.6	20.6	8.2 8.2	8.2	32.7 32.7	32.7	95.9 95.9	95.9	7.1 7.1	7.1	7.1	5.6 5.3	5.5	5.6	8.7 8.7	8.7	11.4
					Middle	5.1	20.6 20.6	20.6	8.2 8.2	8.2	32.7 32.7	32.7	95.9 95.8	95.9	7.1 7.1	7.1		5.8 5.4	5.6		11.7 10.5	11.1	
					Bottom	9.1	20.6 20.6	20.6	8.2 8.2	8.2	32.8 32.8	32.8	95.8 95.8	95.8	7.1 7.1	7.1	7.1	5.4 5.9	5.7		13.3 15.5	14.4	
6-Dec-13	Sunny	Moderate	09:17	9.9	Surface	1.0	20.4 20.4	20.4	8.1 8.1	8.1	32.4 32.4	32.4	94.3 94.3	94.3	7.0 7.0	7.0	7.0	5.7 5.9	5.8	6.4	12.3 11.2	11.8	11.1
					Middle	5.0	20.4 20.4	20.4	8.1 8.1	8.1	32.4 32.4	32.4	93.9 93.9	93.9	7.0 7.0	7.0		6.3 6.2	6.3		10.6 10.8	10.7	
					Bottom	8.9	20.4 20.4	20.4	8.1 8.1	8.1	32.4 32.4	32.4	93.7 93.6	93.7	7.0 7.0	7.0	7.0	7.0 7.1	7.1		10.1 11.6	10.9	
9-Dec-13	Sunny	Moderate	12:10	10.2	Surface	1.0	20.5 20.5	20.5	8.1 8.1	8.1	31.6 31.6	31.6	92.7 92.8	92.8	6.9 6.9	6.9	6.9	2.2 2.2	2.2	2.7	5.8 4.8	5.3	5.9
					Middle	5.1	20.4 20.4	20.4	8.1 8.1	8.1	31.8 31.8	31.8	92.0 92.2	92.1	6.9 6.9	6.9		2.5 2.6	2.6		4.8 4.7	4.8	
					Bottom	9.2	20.4 20.4	20.4	8.1 8.1	8.1	31.9 32.0	31.9	92.5 92.1	92.3	6.9 6.9	6.9	6.9	3.2 3.1	3.2		7.6 7.3	7.5	
11-Dec-13	Sunny	Moderate	15:40	9.8	Surface	1.0	20.5 20.5	20.5	8.2 8.2	8.2	32.2 32.3	32.2	92.4 93.7	93.1	6.9 7.0	6.9	6.9	1.8 1.8	1.8	1.9	10.7 10.7	10.7	12.7
					Middle	4.9	20.7 20.6	20.6	8.2 8.2	8.2	32.7 32.5	32.6	91.8 94.2	93.0	6.8 7.0	6.9		1.9 2.0	2.0		12.3 11.9	12.1	
					Bottom	8.8	20.6 20.6	20.6	8.2 8.2	8.2	32.6 32.7	32.7	96.7 92.9	94.8	7.2 6.9	7.0	7.0	2.0 1.9	2.0		15.4 15.2	15.3	
13-Dec-13	Fine	Moderate	17:06	9.9	Surface	1.0	20.6 20.6	20.6	8.1 8.1	8.1	33.2 33.2	33.2	91.4 92.1	91.8	6.8 6.8	6.8	6.8	1.6 1.6	1.6	1.7	5.2 4.6	4.9	5.4
					Middle	5.0	20.6 20.6	20.6	8.1 8.1	8.1	33.2 33.2	33.2	92.4 91.2	91.8	6.8 6.8	6.8		1.7 1.7	1.7		4.4 4.1	4.3	
					Bottom	8.9	20.6 20.6	20.6	8.1 8.1	8.1	33.2 33.2	33.2	95.2 91.5	93.4	7.0 6.8	6.9	6.9	1.9 1.9	1.9		7.6 6.6	7.1	
16-Dec-13	Rainy	Moderate	06:16	10.1	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	33.4 33.4	33.4	89.9 90.0	90.0	6.7 6.7	6.7	6.7	2.2 2.2	2.2	2.3	4.8 4.5	4.7	5.2
					Middle	5.1	20.3 20.3	20.3	8.1 8.1	8.1	33.5 33.4	33.5	89.6 89.6	89.6	6.7 6.7	6.7		2.3 2.3	2.3		5.7 5.6	5.7	
					Bottom	9.1	20.3 20.3	20.3	8.1 8.1	8.1	33.4 33.5	33.5	89.5 89.4	89.5	6.6 6.6	6.6	6.6	2.3 2.4	2.4		5.2 4.9	5.1	
18-Dec-13	Sunny	Moderate	07:42	10.5	Surface	1.0	19.3 19.4	19.4	8.1 8.2	8.1	33.4 33.4	33.4	91.7 91.3	91.5	6.9 6.9	6.9	6.9	3.4 3.5	3.5	5.5	6.3 7.6	7.0	7.4
					Middle	5.3	19.4 19.5	19.4	8.1 8.1	8.1	33.4 33.5	33.4	91.3 91.0	91.2	6.9 6.9	6.9		5.4 5.5	5.5		8.2 7.1	7.7	
					Bottom	9.5	19.5 19.5	19.5	8.1 8.1	8.1	33.5 33.5	33.5	91.6 91.4	91.5	6.9 6.9	6.9	6.9	7.5 7.6	7.6		7.2 7.7	7.5	
20-Dec-13	Sunny	Moderate	08:27	10.2	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	33.3 33.4	33.4	94.2 94.0	94.1	7.2 7.2	7.2	7.2	3.7 3.8	3.8	3.8	6.5 6.4	6.5	6.9
					Middle	5.1	18.6 18.8	18.7	8.2 8.2	8.2	33.4 33.4	33.4	93.6 93.4	93.5	7.2 7.1	7.2		3.8 3.8	3.8		6.1 6.5	6.3	
					Bottom	9.2	18.8 18.9	18.9	8.2 8.2	8.2	33.6 33.7	33.6	94.1 93.9	94.0	7.2 7.1	7.2	7.2	3.6 3.8	3.7		7.6 8.0	7.8	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	09:58	10.3	Surface	1.0	18.0 18.0	18.0	8.2 8.2	8.2	32.8 32.8	32.8	94.0 94.2	94.1	7.3 7.3	7.3	7.3	2.6 2.5	2.6	3.2	7.2 7.9	7.6	7.2
					Middle	5.2	18.3 18.3	18.3	8.3 8.3	8.3	33.1 33.1	33.1	93.9 94.0	94.0	7.3 7.3	7.3		2.8 3.1	3.0		6.8 6.6	6.7	
					Bottom	9.3	18.5 18.3	18.4	8.3 8.2	8.3	33.4 33.3	33.3	94.3 94.6	94.5	7.2 7.3	7.3		4.1 4.0	4.1		7.5 7.1	7.3	
25-Dec-13	Sunny	Moderate	-	10.1	Surface	-	- -	-	8.2 8.2	8.2	- -	-	- -	-	- -	-	7.1	- -	-	0.7	3.1 2.4	2.8	3.9
					Middle	5.1	18.8 18.8	18.8	8.2 8.2	8.2	33.9 33.9	33.9	93.0 92.8	92.9	7.1 7.1	7.1		0.5 0.4	0.5		3.8 3.6	3.7	
					Bottom	9.1	18.8 18.8	18.8	8.2 8.2	8.2	33.9 33.9	33.9	92.9 92.4	92.7	7.1 7.0	7.1	7.1	0.9 0.8	0.9		4.6 5.5	5.1	
27-Dec-13	Sunny	Moderate	15:12	10.0	Surface	1.0	18.6 18.6	18.6	8.2 8.2	8.2	33.9 33.9	33.9	95.1 96.8	96.0	7.3 7.4	7.3	7.4	2.1 2.2	2.2	2.2	6.2 5.7	6.0	6.2
					Middle	5.0	18.6 18.6	18.6	8.2 8.2	8.2	33.9 33.9	33.9	95.2 98.0	96.6	7.3 7.5	7.4		2.1 2.1	2.1		5.4 4.6	5.0	
					Bottom	9.0	18.6 18.6	18.6	8.2 8.2	8.2	34.0 33.9	33.9	99.8 95.7	97.8	7.6 7.3	7.5	7.5	2.1 2.2	2.2		7.0 8.2	7.6	
30-Dec-13	Sunny	Moderate	17:30	10.1	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	34.0 33.9	34.0	96.0 94.6	95.3	7.4 7.3	7.4	7.4	2.5 2.6	2.6	2.7	7.6 7.4	7.5	8.7
					Middle	5.1	17.8 17.8	17.8	8.2 8.2	8.2	34.0 34.0	34.0	96.8 94.5	95.7	7.5 7.3	7.4		2.8 2.7	2.8		8.7 8.6	8.7	
					Bottom	9.1	17.8 17.8	17.8	8.2 8.2	8.2	34.0 34.0	34.0	99.2 94.9	97.1	7.7 7.4	7.5	7.5	2.7 2.7	2.7		10.8 9.2	10.0	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CSA - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	13:20	35.2	Surface	1.0	21.4 21.4	21.4	8.2 8.2	8.2	33.3 33.3	33.3	90.3 90.2	90.3	6.6 6.6	6.6	6.6	4.7 4.6	4.7	5.1	9.9 9.4	9.7	9.9
					Middle	17.6	21.4 21.4	21.4	8.2 8.2	8.2	33.3 33.3	33.3	89.8 89.6	89.7	6.6 6.5	6.5		5.4 5.4	5.4		10.3 9.7	10.0	
					Bottom	34.2	21.4 21.4	21.4	8.2 8.2	8.2	33.3 33.3	33.3	89.8 89.7	89.8	6.6 6.5	6.5	6.5	5.1 5.1	5.1		9.4 10.3	9.9	
4-Dec-13	Sunny	Moderate	14:24	36.0	Surface	1.0	21.1 21.1	21.1	8.2 8.2	8.2	33.1 33.1	33.1	91.7 91.8	91.8	6.7 6.7	6.7	6.7	3.0 3.1	3.1	3.2	5.8 7.2	6.5	7.9
					Middle	18.0	21.1 21.1	21.1	8.2 8.2	8.2	33.1 33.1	33.1	91.5 91.7	91.6	6.7 6.7	6.7		3.0 3.1	3.1		9.3 8.4	8.9	
					Bottom	35.0	21.1 21.1	21.1	8.2 8.2	8.2	33.1 33.1	33.1	91.6 91.4	91.5	6.7 6.7	6.7	6.7	3.3 3.4	3.4		8.3 8.2	8.3	
6-Dec-13	Sunny	Moderate	16:41	36.6	Surface	1.0	20.8 20.8	20.8	8.2 8.2	8.2	32.8 32.8	32.8	91.2 91.3	91.3	6.7 6.7	6.7	6.7	2.4 2.3	2.4	5.5	5.2 4.6	4.9	6.8
					Middle	18.3	20.8 20.8	20.8	8.2 8.2	8.2	33.1 33.1	33.1	89.1 89.3	89.2	6.6 6.6	6.6		7.0 6.8	6.9		7.3 5.2	6.3	
					Bottom	35.6	20.8 20.8	20.8	8.2 8.2	8.2	33.1 33.1	33.1	89.4 89.4	89.4	6.6 6.6	6.6	6.6	6.8 7.3	7.1		8.9 9.7	9.3	
9-Dec-13	Sunny	Moderate	19:59	36.0	Surface	1.0	20.7 20.7	20.7	8.1 8.1	8.1	32.4 32.4	32.4	91.1 90.9	91.0	6.8 6.8	6.8	6.8	2.2 2.2	2.2	2.4	6.8 6.1	6.5	6.5
					Middle	18.0	20.7 20.7	20.7	8.1 8.1	8.1	32.5 32.5	32.5	90.6 90.2	90.4	6.7 6.7	6.7		2.3 2.4	2.4		5.7 7.1	6.4	
					Bottom	35.0	20.7 20.7	20.7	8.2 8.1	8.2	32.6 32.6	32.6	90.9 90.5	90.7	6.7 6.7	6.7	6.7	2.4 2.5	2.5		6.2 7.0	6.6	
11-Dec-13	Fine	Moderate	06:34	36.0	Surface	1.0	20.3 20.4	20.3	8.1 8.1	8.1	31.9 32.0	31.9	93.0 91.9	92.5	7.0 6.9	6.9	6.8	2.4 2.3	2.4	2.2	10.1 9.3	9.7	11.3
					Middle	18.0	20.7 20.7	20.7	8.1 8.1	8.1	33.0 33.0	33.0	90.1 90.9	90.5	6.7 6.7	6.7		2.0 2.1	2.1		11.9 10.3	11.1	
					Bottom	35.0	20.7 20.7	20.7	8.1 8.1	8.1	33.1 33.0	33.1	90.4 92.7	91.6	6.7 6.8	6.8	6.8	2.0 2.0	2.0		13.4 12.7	13.1	
13-Dec-13	Cloudy	Moderate	08:42	36.7	Surface	1.0	20.6 20.6	20.6	8.1 8.1	8.1	33.3 33.3	33.3	90.2 90.4	90.3	6.7 6.7	6.7	6.7	3.2 3.2	3.2	3.6	6.5 6.6	6.6	6.6
					Middle	18.4	20.7 20.7	20.7	8.1 8.1	8.1	33.3 33.3	33.3	89.2 89.5	89.4	6.6 6.6	6.6		3.7 3.8	3.8		6.8 5.9	6.4	
					Bottom	35.7	20.7 20.7	20.7	8.1 8.1	8.1	33.3 33.3	33.3	89.2 89.9	89.6	6.6 6.6	6.6	6.6	3.8 3.7	3.8		7.1 6.4	6.8	
16-Dec-13	Rainy	Moderate	13:33	34.8	Surface	1.0	20.3 20.3	20.3	8.2 8.1	8.2	33.5 33.5	33.5	89.1 89.4	89.3	6.6 6.6	6.6	6.6	3.5 3.4	3.5	5.1	6.9 6.6	6.8	7.5
					Middle	17.4	20.4 20.4	20.4	8.1 8.2	8.2	33.6 33.6	33.6	89.0 88.7	88.9	6.6 6.6	6.6		5.2 5.3	5.3		7.4 7.3	7.4	
					Bottom	33.8	20.4 20.4	20.4	8.1 8.2	8.2	33.6 33.6	33.6	89.0 88.8	88.9	6.6 6.6	6.6	6.6	6.4 6.4	6.4		8.4 8.2	8.3	
18-Dec-13	Sunny	Moderate	14:32	34.7	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	33.6 33.6	33.6	90.9 91.0	91.0	6.8 6.8	6.8	6.8	3.2 3.3	3.3	3.6	6.5 5.6	6.1	6.5
					Middle	17.4	19.9 19.9	19.9	8.2 8.2	8.2	33.7 33.6	33.7	90.3 90.6	90.5	6.8 6.8	6.8		3.7 3.8	3.8		5.8 6.0	5.9	
					Bottom	33.7	19.9 19.9	19.9	8.2 8.2	8.2	33.7 33.7	33.7	90.4 90.8	90.6	6.8 6.8	6.8	6.8	3.7 3.9	3.8		7.3 7.4	7.4	
20-Dec-13	Sunny	Moderate	15:47	36.1	Surface	1.0	19.6 19.6	19.6	8.3 8.3	8.3	33.9 33.9	33.9	92.7 92.9	92.8	7.0 7.0	7.0	7.0	2.7 2.7	2.7	3.1	6.6 6.6	6.6	6.9
					Middle	18.1	19.6 19.6	19.6	8.3 8.3	8.3	33.9 33.9	33.9	92.1 92.3	92.2	6.9 6.9	6.9		3.3 3.2	3.3		7.8 6.7	7.3	
					Bottom	35.1	19.6 19.6	19.6	8.3 8.3	8.3	33.9 33.9	33.9	92.4 92.1	92.3	6.9 6.9	6.9	6.9	3.2 3.1	3.2		7.4 6.0	6.7	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CSA - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	17:37	36.6	Surface	1.0	19.1 19.1	19.1	8.3 8.3	8.3	33.8 33.8	33.8	93.2 93.2	93.2	7.1 7.1	7.1	7.1	2.5 2.5	2.5	2.6	4.4 4.5	4.5	5.6
					Middle	18.3	19.1 19.1	19.1	8.3 8.3	8.3	33.8 33.8	33.8	92.4 92.5	92.5	7.0 7.0	7.0		2.6 2.5	2.6		5.7 5.8	5.8	
					Bottom	35.6	19.1 19.1	19.1	8.3 8.3	8.3	33.8 33.8	33.8	92.3 92.5	92.4	7.0 7.0	7.0	7.0	2.8 2.7	2.8		6.4 6.6	6.5	
25-Dec-13	Sunny	Moderate	19:30	36.5	Surface	1.0	19.0 19.0	19.0	8.2 8.2	8.2	33.9 33.9	33.9	93.6 93.6	93.6	7.1 7.1	7.1	7.1	1.1 1.2	1.2	1.6	4.2 3.5	3.9	4.6
					Middle	18.3	19.0 19.0	19.0	8.2 8.2	8.2	33.9 33.9	33.9	93.2 93.2	93.2	7.1 7.1	7.1		1.6 1.7	1.7		5.8 5.2	5.5	
					Bottom	35.5	19.0 19.0	19.0	8.2 8.2	8.2	33.9 33.9	33.9	92.8 93.0	92.9	7.0 7.1	7.0	7.0	1.9 1.8	1.9		4.4 4.2	4.3	
27-Dec-13	Sunny	Moderate	06:30	35.2	Surface	1.0	18.7 18.6	18.6	8.2 8.2	8.2	33.9 33.9	33.9	94.4 93.2	93.8	7.2 7.1	7.2	7.2	2.3 2.2	2.3	2.3	4.3 4.4	4.4	5.4
					Middle	17.6	18.7 18.7	18.7	8.2 8.2	8.2	33.9 33.9	33.9	92.9 94.8	93.9	7.1 7.2	7.2		2.3 2.2	2.3		5.6 5.7	5.7	
					Bottom	34.2	18.7 18.7	18.7	8.2 8.1	8.2	33.9 33.9	33.9	93.1 96.5	94.8	7.1 7.4	7.2	7.2	2.3 2.3	2.3		5.8 6.6	6.2	
30-Dec-13	Sunny	Moderate	10:17	35.8	Surface	1.0	17.9 17.8	17.9	8.1 8.2	8.2	34.1 34.1	34.1	94.0 92.8	93.4	7.3 7.2	7.2	7.2	2.4 2.3	2.4	2.4	4.2 4.4	4.3	6.2
					Middle	17.9	17.8 17.8	17.8	8.1 8.2	8.1	34.1 34.1	34.1	93.3 92.1	92.7	7.2 7.1	7.2		2.5 2.3	2.4		6.1 6.7	6.4	
					Bottom	34.8	17.8 17.8	17.8	8.1 8.2	8.1	34.1 34.1	34.1	92.6 92.1	92.4	7.2 7.1	7.2	7.2	2.5 2.5	2.5		8.2 7.5	7.9	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CSA - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	05:42	34.8	Surface	1.0	21.3 21.3	21.3	8.2 8.2	8.2	33.3 33.3	33.3	92.3 91.9	92.1	6.7 6.7	6.7	6.7	10.3 10.1	10.2	10.3	14.9 15.2	15.1	17.5
					Middle	17.4	21.3 21.3	21.3	8.2 8.2	8.2	33.3 33.3	33.3	92.2 91.4	91.8	6.7 6.7	6.7		10.4 10.4	10.4		16.9 15.2	16.1	
					Bottom	33.8	21.3 21.3	21.3	8.2 8.2	8.2	33.3 33.3	33.3	91.3 94.9	93.1	6.7 6.9	6.8	6.8	10.2 10.3	10.3		20.9 21.5	21.2	
4-Dec-13	Sunny	Moderate	07:29	36.1	Surface	1.0	20.6 20.7	20.6	8.2 8.2	8.2	32.7 32.7	32.7	96.5 96.1	96.3	7.2 7.1	7.1	7.1	6.6 6.7	6.7	7.0	8.0 7.9	8.0	8.0
					Middle	18.1	20.6 20.6	20.6	8.2 8.2	8.2	32.8 32.7	32.8	96.0 96.4	96.2	7.1 7.2	7.1		7.0 7.0	7.0		7.5 7.2	7.4	
					Bottom	35.1	20.6 20.6	20.6	8.2 8.2	8.2	32.8 32.8	32.8	96.0 96.3	96.2	7.1 7.1	7.1	7.1	7.6 7.2	7.4		9.3 7.8	8.6	
6-Dec-13	Sunny	Moderate	09:04	37.0	Surface	1.0	20.4 20.4	20.4	8.1 8.1	8.1	32.4 32.4	32.4	94.3 94.7	94.5	7.0 7.1	7.1	7.1	5.8 5.6	5.7	6.3	11.4 10.4	10.9	11.6
					Middle	18.5	20.4 20.4	20.4	8.1 8.1	8.1	32.4 32.4	32.4	94.0 93.5	93.8	7.0 7.0	7.0		6.9 6.7	6.8		10.8 11.4	11.1	
					Bottom	36.0	20.4 20.4	20.4	8.1 8.1	8.1	32.4 32.4	32.4	93.6 94.9	94.3	7.0 7.1	7.0	7.0	6.5 6.3	6.4		12.2 13.2	12.7	
9-Dec-13	Sunny	Moderate	12:02	35.3	Surface	1.0	20.5 20.5	20.5	8.1 8.1	8.1	31.6 31.6	31.6	92.4 92.2	92.3	6.9 6.9	6.9	6.9	2.6 2.7	2.7	3.6	5.2 3.7	4.5	6.1
					Middle	17.7	20.4 20.4	20.4	8.1 8.1	8.1	32.2 32.1	32.1	90.9 91.2	91.1	6.8 6.8	6.8		3.7 3.8	3.8		5.8 6.2	6.0	
					Bottom	34.3	20.4 20.5	20.5	8.1 8.1	8.1	32.2 32.2	32.2	91.7 92.7	92.2	6.8 6.9	6.9	6.9	4.4 4.2	4.3		8.1 7.5	7.8	
11-Dec-13	Sunny	Moderate	15:41	36.3	Surface	1.0	20.5 20.5	20.5	8.2 8.2	8.2	32.1 32.1	32.1	92.7 91.9	92.3	6.9 6.9	6.9	6.8	1.8 1.9	1.9	2.2	10.5 11.2	10.9	11.0
					Middle	18.2	20.7 20.7	20.7	8.2 8.2	8.2	32.7 32.7	32.7	90.0 89.8	89.9	6.7 6.7	6.7		2.4 2.5	2.5		11.5 11.3	11.4	
					Bottom	35.3	20.7 20.7	20.7	8.2 8.2	8.2	32.7 32.7	32.7	90.6 91.2	90.9	6.7 6.8	6.7	6.7	2.3 2.2	2.3		11.1 10.3	10.7	
13-Dec-13	Fine	Moderate	17:23	36.3	Surface	1.0	20.6 20.6	20.6	8.1 8.1	8.1	33.2 33.2	33.2	90.9 91.0	91.0	6.7 6.7	6.7	6.7	1.7 1.6	1.7	2.2	6.4 5.4	5.9	5.2
					Middle	18.2	20.6 20.6	20.6	8.1 8.1	8.1	33.2 33.2	33.2	89.4 89.6	89.5	6.6 6.6	6.6		2.7 2.4	2.6		4.8 4.2	4.5	
					Bottom	35.3	20.6 20.6	20.6	8.1 8.1	8.1	33.2 33.2	33.2	89.8 89.6	89.7	6.6 6.6	6.6	6.6	2.0 2.3	2.2		5.6 4.6	5.1	
16-Dec-13	Rainy	Moderate	06:09	34.7	Surface	1.0	20.3 20.3	20.3	8.1 8.0	8.1	33.4 33.4	33.4	90.1 90.8	90.5	6.7 6.8	6.7	6.7	2.9 2.8	2.9	3.1	5.4 4.8	5.1	6.3
					Middle	17.4	20.3 20.3	20.3	8.0 8.1	8.0	33.4 33.4	33.4	91.1 89.6	90.4	6.8 6.7	6.7		3.2 3.1	3.2		5.9 7.3	6.6	
					Bottom	33.7	20.3 20.3	20.3	8.1 8.0	8.0	33.4 33.4	33.4	89.6 93.6	91.6	6.7 7.0	6.8	6.8	3.3 3.2	3.3		7.6 6.6	7.1	
18-Dec-13	Sunny	Moderate	07:35	35.6	Surface	1.0	19.4 19.4	19.4	8.1 8.1	8.1	33.4 33.4	33.4	92.0 93.1	92.6	7.0 7.0	7.0	7.0	4.2 4.2	4.2	5.2	9.9 10.0	10.0	9.8
					Middle	17.8	19.5 19.5	19.5	8.1 8.1	8.1	33.5 33.5	33.5	91.3 93.1	92.2	6.9 7.0	7.0		5.5 5.4	5.5		8.8 9.2	9.0	
					Bottom	34.6	19.5 19.5	19.5	8.0 8.1	8.0	33.5 33.5	33.5	95.6 92.0	93.8	7.2 6.9	7.1	7.1	6.0 5.8	5.9		10.0 10.6	10.3	
20-Dec-13	Sunny	Moderate	08:20	35.2	Surface	1.0	18.5 18.5	18.5	8.2 8.1	8.2	33.4 33.3	33.4	93.8 94.5	94.2	7.2 7.3	7.2	7.2	3.6 3.5	3.6	4.0	8.3 8.2	8.3	8.8
					Middle	17.6	19.0 19.0	19.0	8.2 8.1	8.1	33.7 33.7	33.7	93.5 94.4	94.0	7.1 7.2	7.1		4.2 4.2	4.2		8.0 8.9	8.5	
					Bottom	34.2	19.0 19.0	19.0	8.1 8.2	8.1	33.7 33.7	33.7	96.2 94.2	95.2	7.3 7.2	7.2	7.2	4.1 4.2	4.2		10.3 8.6	9.5	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CSA - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	09:47	37.0	Surface	1.0	18.0 17.9	17.9	8.2 8.2	8.2	32.8 32.7	32.8	94.5 96.0	95.3	7.4 7.5	7.4	7.4	2.4 2.5	2.5	2.4	6.9 7.6	7.3	7.9
					Middle	18.5	18.7 18.6	18.6	8.3 8.3	8.3	33.6 33.5	33.6	96.2 94.0	95.1	7.4 7.2	7.3		2.1 2.1	2.1		5.8 7.0	6.4	
					Bottom	36.0	18.8 18.8	18.8	8.3 8.3	8.3	33.7 33.7	33.7	94.8 98.6	96.7	7.2 7.5	7.4	7.4	2.5 2.6	2.6		10.2 10.0	10.1	
25-Dec-13	Sunny	Moderate	11:23	36.6	Surface	1.0	18.4 18.5	18.4	8.2 8.2	8.2	33.3 33.4	33.4	94.2 94.7	94.5	7.3 7.3	7.3	7.3	0.6 0.5	0.6	0.6	3.4 4.6	4.0	5.1
					Middle	18.3	18.6 18.6	18.6	8.2 8.2	8.2	33.7 33.7	33.7	93.9 93.3	93.6	7.2 7.1	7.2		0.6 0.6	0.6		5.0 6.5	5.8	
					Bottom	35.6	18.8 18.8	18.8	8.2 8.2	8.2	33.9 33.8	33.9	93.2 93.7	93.5	7.1 7.1	7.1	7.1	0.6 0.7	0.7		5.1 5.8	5.5	
27-Dec-13	Sunny	Moderate	15:23	34.9	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	33.9 33.9	33.9	93.9 93.5	93.7	7.2 7.2	7.2	7.2	2.2 2.1	2.2	2.2	5.7 4.3	5.0	5.6
					Middle	17.5	18.5 18.5	18.5	8.2 8.2	8.2	33.9 33.9	33.9	93.5 93.0	93.3	7.2 7.1	7.1		2.1 2.2	2.2		6.1 5.1	5.6	
					Bottom	33.9	18.5 18.5	18.5	8.2 8.2	8.2	33.9 33.9	33.9	93.6 93.3	93.5	7.2 7.1	7.2	7.2	2.1 2.2	2.2		6.6 5.8	6.2	
30-Dec-13	Sunny	Moderate	17:41	35.3	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	33.9 33.9	33.9	93.0 93.7	93.4	7.2 7.3	7.2	7.2	2.2 2.2	2.2	2.3	4.8 4.3	4.6	6.0
					Middle	17.7	17.8 17.8	17.8	8.2 8.2	8.2	33.9 33.9	33.9	92.4 93.0	92.7	7.2 7.2	7.2		2.4 2.3	2.4		5.0 5.3	5.2	
					Bottom	34.3	17.8 17.8	17.8	8.2 8.2	8.2	33.9 33.9	33.9	92.6 93.4	93.0	7.2 7.2	7.2	7.2	2.4 2.3	2.4		8.3 8.2	8.3	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	11:14	3.3	Surface	1.0	19.9 19.9	19.9	8.0 8.0	8.0	32.4 32.4	32.4	99.4 101.8	100.6	7.5 7.7	7.6	7.6	11.2 10.7	11.0	11.5	11.5 10.3	10.9	12.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	19.9 19.9	19.9	8.0 8.0	8.0	32.4 32.4	32.4	100.3 103.8	102.1	7.6 7.8	7.7	7.7	11.9 12.0	12.0		15.0 13.3	14.2	
4-Dec-13	Sunny	Moderate	12:58	3.2	Surface	1.0	20.5 20.4	20.4	8.0 8.0	8.0	32.4 32.3	32.4	99.9 99.8	99.9	7.4 7.5	7.4	7.4	15.4 15.5	15.5	16.0	15.5 15.1	15.3	15.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.4 20.3	20.3	8.0 8.0	8.0	32.4 32.4	32.4	99.4 100.2	99.8	7.4 7.5	7.5	7.5	16.5 16.3	16.4		16.5 14.8	15.7	
6-Dec-13	Sunny	Moderate	14:47	3.2	Surface	1.0	20.3 20.3	20.3	8.0 8.0	8.0	32.1 32.1	32.1	98.2 97.7	98.0	7.4 7.3	7.3	7.3	12.5 12.4	12.5	12.6	10.9 10.1	10.5	10.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.2 20.1	20.1	8.0 8.0	8.0	32.1 32.1	32.1	97.3 98.3	97.8	7.3 7.4	7.3	7.3	12.5 12.6	12.6		10.7 11.3	11.0	
9-Dec-13	Sunny	Moderate	17:44	3.3	Surface	1.0	20.6 20.6	20.6	7.9 7.9	7.9	32.5 32.5	32.5	95.9 95.8	95.9	7.1 7.1	7.1	7.1	9.9 9.6	9.8	10.1	10.5 10.5	10.5	11.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	20.6 20.6	20.6	7.9 7.9	7.9	32.5 32.5	32.5	95.6 95.9	95.8	7.1 7.1	7.1	7.1	10.0 10.5	10.3		12.7 11.1	11.9	
11-Dec-13	Fine	Moderate	08:27	3.1	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	31.4 31.4	31.4	95.9 94.9	95.4	7.2 7.1	7.2	7.2	10.2 10.4	10.3	10.2	10.7 10.3	10.5	11.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	20.3 20.3	20.3	7.9 7.9	7.9	31.4 31.4	31.4	95.2 97.7	96.5	7.2 7.3	7.2	7.2	9.7 10.2	10.0		12.7 12.6	12.7	
13-Dec-13	Cloudy	Moderate	10:51	3.2	Surface	1.0	19.8 19.8	19.8	8.0 8.0	8.0	31.9 31.9	31.9	97.1 97.9	97.5	7.3 7.4	7.4	7.4	6.6 6.6	6.6	6.7	6.2 5.9	6.1	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	19.9 19.9	19.9	8.0 8.0	8.0	32.0 32.0	32.0	99.0 97.4	98.2	7.5 7.4	7.4	7.4	6.6 6.9	6.8		6.3 5.4	5.9	
16-Dec-13	Rainy	Moderate	11:14	3.6	Surface	1.0	19.2 19.2	19.2	8.0 8.0	8.0	32.1 32.1	32.1	97.6 101.8	99.7	7.5 7.8	7.6	7.6	5.9 6.0	6.0	6.0	5.5 5.7	5.6	6.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	19.2 19.1	19.1	8.0 8.0	8.0	32.2 32.5	32.4	96.4 98.6	97.5	7.4 7.5	7.4	7.4	6.0 6.0	6.0		6.9 6.4	6.7	
18-Dec-13	Sunny	Moderate	12:20	3.4	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	31.1 31.2	31.1	95.6 95.9	95.8	7.5 7.6	7.5	7.5	21.0 20.8	20.9	21.3	13.7 13.3	13.5	16.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	17.9 17.9	17.9	8.0 8.0	8.0	31.1 31.2	31.2	96.1 95.8	96.0	7.6 7.5	7.6	7.6	21.5 21.7	21.6		19.2 18.9	19.1	
20-Dec-13	Sunny	Moderate	13:25	3.3	Surface	1.0	17.2 17.3	17.3	7.9 7.9	7.9	31.9 31.9	31.9	97.2 96.3	96.8	7.7 7.6	7.7	7.7	12.0 11.8	11.9	12.5	15.7 15.5	15.6	15.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	17.2 17.2	17.2	7.9 7.9	7.9	31.9 31.9	31.9	97.9 96.5	97.2	7.8 7.7	7.7	7.7	13.4 12.7	13.1		15.9 16.0	16.0	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	15:30	3.2	Surface	1.0	17.1 17.1	17.1	7.9 7.9	7.9	31.9 31.9	31.9	96.8 97.5	97.2	7.7 7.8	7.7	7.7	11.3 11.5	11.4	11.5	12.6 13.0	12.8	12.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	17.0 17.0	17.0	7.9 7.9	7.9	31.9 31.9	31.9	98.1 97.0	97.6	7.8 7.7	7.8	7.8	11.4 11.5	11.5		13.2 12.2	12.7	
25-Dec-13	Sunny	Moderate	17:46	3.3	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	32.0 32.0	32.0	102.4 102.2	102.3	8.2 8.1	8.1	8.1	6.4 6.2	6.3	6.4	6.4 6.3	6.4	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	17.0 17.0	17.0	8.0 8.0	8.0	32.0 32.0	32.0	102.2 103.2	102.7	8.1 8.2	8.2	8.2	6.5 6.4	6.5		5.4 5.0	5.2	
27-Dec-13	Sunny	Moderate	08:04	3.2	Surface	1.0	16.2 16.2	16.2	8.0 8.0	8.0	32.3 32.3	32.3	99.5 99.2	99.4	8.0 8.0	8.0	8.0	20.6 21.0	20.8	21.8	19.8 19.8	19.8	20.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	16.2 16.2	16.2	8.0 8.0	8.0	32.3 32.3	32.3	99.2 100.0	99.6	8.0 8.1	8.0	8.0	23.5 22.1	22.8		21.6 21.6	21.6	
30-Dec-13	Sunny	Moderate	11:55	3.2	Surface	1.0	16.1 16.1	16.1	8.1 8.1	8.1	33.0 33.0	33.0	103.3 104.2	103.8	8.3 8.4	8.4	8.4	6.5 7.1	6.8	7.8	5.4 6.3	5.9	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	16.1 16.0	16.0	8.1 8.1	8.1	33.0 33.0	33.0	103.6 104.3	104.0	8.4 8.4	8.4	8.4	8.5 8.8	8.7		5.7 6.8	6.3	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	07:02	3.3	Surface	1.0	19.7 19.7	19.7	8.0 8.0	8.0	32.2 32.2	32.2	102.2 99.1	100.7	7.7 7.5	7.6	7.6	12.1 11.6	11.9	13.9	7.3 7.5	7.4	7.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	19.7 19.7	19.7	8.0 8.0	8.0	32.4 32.4	32.4	104.8 100.6	102.7	7.9 7.6	7.8	7.8	16.3 15.5	15.9		7.7 7.0	7.4	
4-Dec-13	Sunny	Moderate	09:20	3.3	Surface	1.0	20.2 20.2	20.2	8.0 8.0	8.0	32.6 32.6	32.6	97.8 98.5	98.2	7.3 7.4	7.3	7.3	22.0 22.1	22.1	21.7	19.3 18.6	19.0	19.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	20.2 20.1	20.2	8.0 8.0	8.0	32.6 32.6	32.6	98.2 99.6	98.9	7.3 7.5	7.4	7.4	21.1 21.4	21.3		19.6 20.8	20.2	
6-Dec-13	Sunny	Moderate	11:02	3.2	Surface	1.0	20.1 20.1	20.1	7.9 7.9	7.9	32.3 32.2	32.3	96.2 96.7	96.5	7.2 7.3	7.2	7.2	20.2 20.2	20.2	20.6	17.7 17.5	17.6	18.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.1 20.1	20.1	7.9 7.9	7.9	32.2 32.3	32.3	96.3 98.1	97.2	7.2 7.4	7.3	7.3	20.8 20.9	20.9		20.0 20.0	20.0	
9-Dec-13	Sunny	Moderate	13:23	3.2	Surface	1.0	20.6 20.5	20.6	8.0 8.0	8.0	31.8 31.8	31.8	96.6 96.0	96.3	7.2 7.2	7.2	7.2	13.3 13.5	13.4	13.9	10.9 10.3	10.6	10.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.4 20.5	20.4	7.9 8.0	7.9	31.8 31.8	31.8	96.1 96.0	96.1	7.2 7.2	7.2	7.2	14.2 14.4	14.3		10.7 10.6	10.7	
11-Dec-13	Sunny	Moderate	13:48	3.2	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	31.2 31.2	31.2	97.4 97.8	97.6	7.3 7.4	7.3	7.3	9.6 9.5	9.6	9.7	11.6 11.7	11.7	13.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.4 20.4	20.4	7.9 7.9	7.9	31.2 31.2	31.2	97.5 98.6	98.1	7.3 7.4	7.4	7.4	9.5 9.8	9.7		13.7 14.7	14.2	
13-Dec-13	Fine	Moderate	15:01	3.2	Surface	1.0	19.7 19.7	19.7	8.0 8.0	8.0	31.7 31.7	31.7	98.9 98.3	98.6	7.5 7.4	7.5	7.5	14.4 13.6	14.0	14.2	11.3 11.2	11.3	11.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	19.8 19.8	19.8	8.0 8.0	8.0	31.8 31.8	31.8	98.5 99.7	99.1	7.5 7.6	7.5	7.5	14.3 14.5	14.4		11.4 11.3	11.4	
16-Dec-13	Rainy	Moderate	07:38	3.6	Surface	1.0	19.4 19.4	19.4	8.0 8.0	8.0	32.4 32.4	32.4	103.1 100.6	101.9	7.8 7.7	7.7	7.7	12.4 12.1	12.3	12.5	12.9 12.7	12.8	13.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	19.3 19.4	19.3	8.0 8.0	8.0	32.4 32.4	32.4	101.9 99.5	100.7	7.7 7.6	7.7	7.7	12.7 12.5	12.6		14.4 13.2	13.8	
18-Dec-13	Sunny	Moderate	08:58	3.5	Surface	1.0	17.7 17.7	17.7	8.0 8.0	8.0	31.6 31.7	31.6	93.9 93.7	93.8	7.4 7.4	7.4	7.4	11.4 11.6	11.5	11.7	11.6 11.2	11.4	12.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	17.7 17.7	17.7	8.0 8.0	8.0	31.7 31.8	31.8	94.2 93.9	94.1	7.4 7.4	7.4	7.4	12.0 11.8	11.9		12.5 12.7	12.6	
20-Dec-13	Sunny	Moderate	10:20	3.3	Surface	1.0	17.3 17.3	17.3	7.9 7.9	7.9	32.0 32.1	32.0	94.9 94.8	94.9	7.5 7.5	7.5	7.5	17.1 17.0	17.1	17.9	12.0 11.8	11.9	12.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	17.3 17.3	17.3	7.9 7.9	7.9	32.1 32.1	32.1	94.8 95.0	94.9	7.5 7.5	7.5	7.5	18.2 19.1	18.7		12.7 12.3	12.5	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	11:23	3.3	Surface	1.0	17.2 17.2	17.2	8.0 8.0	8.0	32.2 32.2	32.2	98.6 98.2	98.4	7.8 7.8	7.8	7.8	14.1 14.6	14.4	14.4	15.8 14.8	15.3	15.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	17.2 17.0	17.1	8.0 8.0	8.0	32.1 32.1	32.1	98.3 99.1	98.7	7.8 7.9	7.8	7.8	14.2 14.6	14.4		14.6 15.0	14.8	
25-Dec-13	Sunny	Moderate	13:04	3.3	Surface	1.0	17.2 17.2	17.2	8.0 8.0	8.0	32.0 32.0	32.0	102.1 101.6	101.9	8.1 8.1	8.1	8.1	7.8 7.6	7.7	7.7	9.7 9.5	9.6	9.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	17.1 17.1	17.1	8.0 8.0	8.0	32.0 32.1	32.1	101.6 102.8	102.2	8.1 8.2	8.1	8.1	7.7 7.7	7.7		9.1 9.5	9.3	
27-Dec-13	Sunny	Moderate	12:59	3.4	Surface	1.0	16.4 16.3	16.4	8.0 8.0	8.0	31.9 31.9	31.9	105.0 105.9	105.5	8.5 8.6	8.5	8.5	9.6 10.0	9.8	10.5	9.9 9.1	9.5	9.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	16.4 16.3	16.3	8.0 8.0	8.0	31.9 31.9	31.9	105.3 106.1	105.7	8.5 8.6	8.5	8.5	11.1 11.0	11.1		10.2 9.2	9.7	
30-Dec-13	Sunny	Moderate	15:20	3.3	Surface	1.0	16.4 16.3	16.4	8.1 8.1	8.1	32.8 32.8	32.8	106.4 105.2	105.8	8.5 8.5	8.5	8.5	10.3 10.6	10.5	10.8	11.6 12.2	11.9	15.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	16.4 16.2	16.3	8.1 8.1	8.1	32.8 32.9	32.8	106.1 104.1	105.1	8.5 8.4	8.4	8.4	11.5 10.5	11.0		20.3 18.9	19.6	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)9 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	11:27	3.7	Surface	1.0	20.2 20.2	20.2	8.0 8.0	8.0	32.2 32.2	32.2	101.1 98.9	100.0	7.6 7.4	7.5	7.5	7.6 8.1	7.9	8.6	6.8 6.0	6.4	7.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.4 20.3	20.3	8.0 8.0	8.0	32.5 32.5	32.5	99.5 103.6	101.6	7.4 7.7	7.6	7.6	9.0 9.4	9.2		7.6 7.9	7.8	
4-Dec-13	Sunny	Moderate	13:10	3.7	Surface	1.0	20.6 20.5	20.5	8.0 8.0	8.0	32.5 32.5	32.5	100.4 100.6	100.5	7.5 7.5	7.5	7.5	11.0 10.6	10.8	11.2	11.7 10.7	11.2	11.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.4 20.3	20.3	8.0 8.0	8.0	32.4 32.5	32.5	100.2 99.5	99.9	7.5 7.4	7.5	7.5	12.1 11.1	11.6		11.2 12.4	11.8	
6-Dec-13	Sunny	Moderate	14:59	3.7	Surface	1.0	20.4 20.4	20.4	8.0 8.0	8.0	32.0 32.0	32.0	100.2 99.7	100.0	7.5 7.5	7.5	7.5	10.2 10.2	10.2	10.2	6.1 6.3	6.2	7.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.3 20.3	20.3	8.0 8.0	8.0	32.1 32.1	32.1	99.6 100.5	100.1	7.5 7.5	7.5	7.5	10.1 10.0	10.1		9.5 9.1	9.3	
9-Dec-13	Sunny	Moderate	17:56	3.6	Surface	1.0	20.8 20.8	20.8	8.0 8.0	8.0	32.1 32.2	32.2	100.1 99.4	99.8	7.4 7.4	7.4	7.4	9.1 9.3	9.2	10.6	8.4 7.2	7.8	7.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	20.8 20.7	20.8	8.0 7.9	8.0	32.2 32.2	32.2	99.8 97.8	98.8	7.4 7.3	7.3	7.3	12.2 11.5	11.9		7.7 6.4	7.1	
11-Dec-13	Fine	Moderate	08:14	3.7	Surface	1.0	20.2 20.2	20.2	7.9 7.9	7.9	31.2 31.2	31.2	95.5 97.2	96.4	7.2 7.3	7.3	7.3	9.3 9.6	9.5	9.5	10.5 10.4	10.5	10.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.3 20.3	20.3	7.9 7.9	7.9	31.2 31.2	31.2	96.1 99.0	97.6	7.2 7.5	7.3	7.3	9.6 9.4	9.5		10.2 11.1	10.7	
13-Dec-13	Cloudy	Moderate	10:37	3.5	Surface	1.0	19.7 19.7	19.7	7.9 7.9	7.9	31.7 31.7	31.7	95.4 95.8	95.6	7.2 7.3	7.3	7.3	6.5 6.5	6.5	6.7	7.0 6.7	6.9	7.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	19.7 19.7	19.7	7.9 7.9	7.9	31.7 31.7	31.7	95.7 96.2	96.0	7.3 7.3	7.3	7.3	7.0 6.8	6.9		8.4 8.1	8.3	
16-Dec-13	Rainy	Moderate	11:26	3.8	Surface	1.0	19.4 19.5	19.5	8.0 8.0	8.0	32.4 32.4	32.4	104.5 102.0	103.3	8.0 7.7	7.8	7.8	8.8 8.7	8.8	8.8	11.7 11.1	11.4	11.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	19.3 19.5	19.4	8.0 8.0	8.0	32.4 32.4	32.4	103.4 100.7	102.1	7.9 7.6	7.7	7.7	8.9 8.5	8.7		11.6 11.8	11.7	
18-Dec-13	Sunny	Moderate	12:34	3.4	Surface	1.0	18.1 18.1	18.1	8.0 8.0	8.0	31.7 31.7	31.7	94.9 95.3	95.1	7.4 7.5	7.4	7.4	13.6 13.6	13.6	13.7	17.0 16.0	16.5	18.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	18.1 18.1	18.1	8.0 8.0	8.0	31.6 31.7	31.7	95.5 95.1	95.3	7.5 7.4	7.5	7.5	13.8 13.7	13.8		19.3 19.4	19.4	
20-Dec-13	Sunny	Moderate	13:40	3.6	Surface	1.0	17.9 17.7	17.8	7.9 8.0	8.0	31.9 32.1	32.0	98.0 96.4	97.2	7.7 7.6	7.6	7.6	11.3 12.1	11.7	13.7	9.1 9.5	9.3	10.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	17.6 17.7	17.6	7.9 8.0	7.9	32.0 32.1	32.0	99.8 96.6	98.2	7.9 7.6	7.7	7.7	15.0 16.2	15.6		11.4 11.0	11.2	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)9 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	15:45	3.6	Surface	1.0	17.6 17.6	17.6	8.0 8.0	8.0	31.9 31.9	31.9	102.6 101.5	102.1	8.1 8.0	8.0	8.0	5.0 5.2	5.1	5.3	6.7 7.5	7.1	7.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	17.2 17.5	17.4	8.0 8.0	8.0	31.8 31.8	31.8	100.1 101.6	100.9	8.0 8.0	8.0	8.0	5.4 5.4	5.4		8.7 8.5	8.6	
25-Dec-13	Sunny	Moderate	17:58	3.6	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	32.1 32.0	32.1	100.2 99.5	99.9	7.9 7.9	7.9	7.9	7.2 7.2	7.2	7.3	7.5 7.9	7.7	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	17.5 17.5	17.5	8.0 8.0	8.0	32.0 32.0	32.0	100.5 99.7	100.1	7.9 7.9	7.9	7.9	7.3 7.3	7.3		7.8 7.6	7.7	
27-Dec-13	Sunny	Moderate	07:49	3.4	Surface	1.0	16.7 16.7	16.7	8.0 8.0	8.0	32.4 32.4	32.4	102.5 105.1	103.8	8.2 8.4	8.3	8.3	10.9 10.8	10.9	11.5	10.7 10.9	10.8	12.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	16.7 16.7	16.7	8.0 8.0	8.0	32.4 32.4	32.4	103.7 107.0	105.4	8.3 8.6	8.4	8.4	11.8 12.1	12.0		14.1 13.8	14.0	
30-Dec-13	Sunny	Moderate	11:42	3.3	Surface	1.0	16.7 16.7	16.7	8.1 8.1	8.1	33.2 33.2	33.2	103.9 104.2	104.1	8.3 8.3	8.3	8.3	7.7 7.2	7.5	8.4	7.0 6.5	6.8	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	16.7 16.7	16.7	8.1 8.1	8.1	33.3 33.2	33.3	104.3 104.0	104.2	8.3 8.3	8.3	8.3	9.3 9.1	9.2		10.2 8.6	9.4	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)9 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:49	3.5	Surface	1.0	20.3 20.3	20.3	8.0 8.0	8.0	32.4 32.4	32.4	99.6 102.9	101.3	7.4 7.7	7.6	7.6	8.5 9.2	8.9	9.4	8.9 9.2	9.1	9.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	20.3 20.4	20.3	8.0 8.0	8.0	32.6 32.5	32.6	106.7 101.2	104.0	8.0 7.5	7.8	7.8	10.0 9.8	9.9		9.8 9.8	9.8	
4-Dec-13	Sunny	Moderate	09:05	3.7	Surface	1.0	20.2 20.2	20.2	8.0 8.0	8.0	32.7 32.7	32.7	99.9 100.3	100.1	7.5 7.5	7.5	7.5	16.2 16.6	16.4	16.4	12.9 13.3	13.1	13.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.2 20.2	20.2	8.0 8.0	8.0	32.7 32.7	32.7	100.0 101.2	100.6	7.5 7.6	7.5	7.5	16.1 16.6	16.4		13.4 14.1	13.8	
6-Dec-13	Sunny	Moderate	10:48	3.6	Surface	1.0	20.0 20.1	20.0	7.9 7.9	7.9	32.3 32.3	32.3	96.9 98.1	97.5	7.3 7.4	7.3	7.3	17.1 17.5	17.3	17.4	7.8 7.7	7.8	8.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	19.9 19.9	19.9	7.9 7.9	7.9	32.3 32.3	32.3	99.4 97.3	98.4	7.5 7.3	7.4	7.4	17.6 17.2	17.4		8.3 9.5	8.9	
9-Dec-13	Sunny	Moderate	13:11	3.6	Surface	1.0	20.4 20.4	20.4	7.9 7.9	7.9	31.7 31.6	31.7	96.2 95.5	95.9	7.2 7.2	7.2	7.2	12.9 13.2	13.1	13.0	16.2 16.0	16.1	16.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	20.4 20.3	20.3	7.9 7.9	7.9	31.9 31.9	31.9	95.5 96.7	96.1	7.2 7.2	7.2	7.2	13.1 12.7	12.9		16.5 17.0	16.8	
11-Dec-13	Sunny	Moderate	14:02	3.7	Surface	1.0	20.4 20.4	20.4	7.9 7.9	7.9	31.2 31.2	31.2	95.7 96.2	96.0	7.2 7.2	7.2	7.2	10.2 10.8	10.5	10.5	13.4 13.2	13.3	15.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.3 20.3	20.3	7.9 7.9	7.9	31.2 31.2	31.2	96.6 95.8	96.2	7.3 7.2	7.2	7.2	10.6 10.4	10.5		17.1 17.4	17.3	
13-Dec-13	Fine	Moderate	15:14	3.7	Surface	1.0	19.9 19.9	19.9	8.0 8.0	8.0	31.8 31.8	31.8	96.2 95.4	95.8	7.3 7.2	7.2	7.2	15.7 15.8	15.8	15.9	9.7 10.2	10.0	9.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	19.9 19.9	19.9	8.0 8.0	8.0	32.0 32.0	32.0	97.3 95.9	96.6	7.3 7.2	7.3	7.3	16.1 15.8	16.0		8.5 9.2	8.9	
16-Dec-13	Rainy	Moderate	07:26	3.6	Surface	1.0	19.6 19.7	19.6	8.0 8.0	8.0	32.5 32.5	32.5	105.2 103.3	104.3	8.0 7.8	7.9	7.9	13.3 13.0	13.2	13.3	12.3 12.8	12.6	12.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	19.0 19.6	19.3	8.0 8.0	8.0	33.0 32.5	32.7	103.3 101.7	102.5	7.9 7.7	7.8	7.8	13.4 13.1	13.3		13.0 12.6	12.8	
18-Dec-13	Sunny	Moderate	08:46	3.4	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	31.8 31.8	31.8	93.7 94.0	93.9	7.4 7.4	7.4	7.4	19.1 18.9	19.0	19.2	22.3 22.8	22.6	**23.9**
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	17.9 17.9	17.9	8.0 8.0	8.0	31.8 31.8	31.8	93.8 94.2	94.0	7.4 7.4	7.4	7.4	19.3 19.5	19.4		25.1 25.2	25.2	
20-Dec-13	Sunny	Moderate	10:06	3.4	Surface	1.0	17.7 17.7	17.7	7.9 7.9	7.9	32.3 32.3	32.3	94.6 95.2	94.9	7.4 7.5	7.4	7.4	21.5 22.3	21.9	20.4	19.9 20.0	20.0	19.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	17.7 17.7	17.7	7.9 7.9	7.9	32.3 32.3	32.3	96.5 94.9	95.7	7.6 7.4	7.5	7.5	18.7 19.1	18.9		19.7 19.6	19.7	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)9 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	11:10	3.6	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	32.1 32.2	32.2	98.6 97.7	98.2	7.8 7.8	7.8	7.8	21.2 21.9	21.6	21.7	20.4 19.6	20.0	20.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	17.0 16.9	16.9	8.0 8.0	8.0	32.1 32.1	32.1	97.9 99.7	98.8	7.8 8.0	7.9	7.9	21.6 21.8	21.7		21.1 21.7	21.4	
25-Dec-13	Sunny	Moderate	12:52	3.7	Surface	1.0	17.4 17.4	17.4	8.0 8.0	8.0	32.1 32.0	32.0	98.7 97.5	98.1	7.8 7.7	7.8	7.8	14.3 14.0	14.2	14.8	12.6 13.2	12.9	13.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	17.2 17.4	17.3	8.0 8.0	8.0	32.0 32.0	32.0	99.8 98.0	98.9	7.9 7.8	7.8	7.8	15.2 15.3	15.3		13.5 13.9	13.7	
27-Dec-13	Sunny	Moderate	13:14	3.6	Surface	1.0	17.1 17.1	17.1	8.0 8.0	8.0	32.5 32.5	32.5	102.9 100.0	101.5	8.2 7.9	8.1	8.1	11.5 11.0	11.3	11.6	14.5 14.9	14.7	15.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	17.1 17.0	17.0	8.0 8.0	8.0	32.5 32.6	32.5	101.5 103.9	102.7	8.1 8.3	8.2	8.2	11.3 12.2	11.8		16.7 15.8	16.3	
30-Dec-13	Sunny	Moderate	15:35	3.4	Surface	1.0	16.8 16.9	16.8	8.1 8.1	8.1	33.1 33.2	33.1	102.1 102.2	102.2	8.1 8.1	8.1	8.1	14.2 14.6	14.4	15.5	12.3 11.6	12.0	12.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	16.9 16.8	16.9	8.1 8.1	8.1	33.2 33.2	33.2	101.8 102.9	102.4	8.1 8.2	8.1	8.1	17.0 16.1	16.6		13.1 11.7	12.4	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS10 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	12:18	10.4	Surface	1.0	20.5 20.5	20.5	8.3 8.3	8.3	32.8 32.8	32.8	96.6 96.9	96.8	7.2 7.2	7.2	7.2	3.9 3.7	3.8	4.3	8.5 9.1	8.8	9.3
					Middle	5.2	20.4 20.4	20.4	8.3 8.3	8.3	32.9 32.9	32.9	95.9 95.8	95.9	7.1 7.1	7.1		4.4 4.5	4.5		10.0 9.2	9.6	
					Bottom	9.4	20.4 20.4	20.4	8.3 8.3	8.3	32.9 32.9	32.9	95.9 95.9	95.9	7.1 7.1	7.1	7.1	4.5 4.5	4.5		9.8 9.1	9.5	
4-Dec-13	Sunny	Moderate	13:27	11.1	Surface	1.0	20.8 20.8	20.8	8.2 8.2	8.2	31.9 31.4	31.7	96.2 96.2	96.2	7.2 7.2	7.2	7.2	3.7 3.6	3.7	3.8	6.1 7.3	6.7	6.4
					Middle	5.6	20.8 20.7	20.8	8.2 8.2	8.2	32.2 32.0	32.1	96.2 96.1	96.2	7.1 7.1	7.1		3.7 3.8	3.8		6.5 6.0	6.3	
					Bottom	10.1	20.8 20.7	20.8	8.2 8.2	8.2	32.1 32.4	32.2	95.9 95.9	95.9	7.1 7.1	7.1	7.1	3.9 3.9	3.9		6.1 6.0	6.1	
6-Dec-13	Sunny	Moderate	15:31	10.4	Surface	1.0	20.4 20.5	20.5	8.1 8.1	8.1	31.4 31.4	31.4	95.1 95.1	95.1	7.1 7.1	7.1	7.1	4.1 4.2	4.2	4.2	9.1 8.8	9.0	9.6
					Middle	5.2	20.4 20.4	20.4	8.2 8.2	8.2	32.0 32.0	32.0	94.8 94.8	94.8	7.1 7.1	7.1		4.3 4.2	4.3		10.2 10.2	10.2	
					Bottom	9.4	20.4 20.4	20.4	8.2 8.2	8.2	32.1 32.1	32.1	94.7 94.7	94.7	7.1 7.1	7.1	7.1	4.2 4.2	4.2		9.0 10.0	9.5	
9-Dec-13	Sunny	Moderate	19:02	10.5	Surface	1.0	20.5 20.5	20.5	8.1 8.1	8.1	29.5 30.1	29.8	93.5 93.8	93.7	7.1 7.1	7.1	7.1	3.3 3.3	3.3	4.4	4.8 5.6	5.2	6.7
					Middle	5.3	20.4 20.4	20.4	8.1 8.1	8.1	31.3 31.4	31.4	93.2 93.3	93.3	7.0 7.0	7.0		4.6 4.7	4.7		6.3 6.8	6.6	
					Bottom	9.5	20.4 20.3	20.4	8.1 8.1	8.1	31.3 31.4	31.4	93.0 93.0	93.0	7.0 7.0	7.0	7.0	5.1 5.3	5.2		7.0 9.4	8.2	
11-Dec-13	Fine	Moderate	07:42	9.4	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	31.6 31.6	31.6	92.4 92.3	92.4	6.9 6.9	6.9	6.9	3.9 4.2	4.1	4.5	13.1 12.3	12.7	13.6
					Middle	4.7	20.4 20.4	20.4	8.1 8.1	8.1	31.8 31.8	31.8	91.8 92.4	92.1	6.9 6.9	6.9		4.5 4.8	4.7		13.5 13.9	13.7	
					Bottom	8.4	20.5 20.4	20.4	8.1 8.1	8.1	31.8 31.8	31.8	93.2 92.0	92.6	7.0 6.9	6.9	6.9	4.7 4.6	4.7		14.2 14.8	14.5	
13-Dec-13	Cloudy	Moderate	09:55	10.0	Surface	1.0	19.9 20.0	20.0	8.1 8.1	8.1	32.1 32.2	32.1	93.2 93.1	93.2	7.0 7.0	7.0	7.0	5.4 5.5	5.5	5.9	8.3 8.8	8.6	8.6
					Middle	5.0	20.2 20.2	20.2	8.1 8.1	8.1	32.5 32.5	32.5	93.2 93.1	93.2	7.0 7.0	7.0		5.9 6.0	6.0		9.0 8.4	8.7	
					Bottom	9.0	20.2 20.2	20.2	8.1 8.1	8.1	32.5 32.5	32.5	93.3 93.3	93.3	7.0 7.0	7.0	7.0	6.0 6.2	6.1		8.6 8.6	8.6	
16-Dec-13	Rainy	Moderate	12:22	10.6	Surface	1.0	19.7 19.7	19.7	8.2 8.2	8.2	33.0 33.0	33.0	94.4 94.4	94.4	7.1 7.1	7.1	7.1	6.3 6.0	6.2	6.3	10.9 10.9	10.9	11.2
					Middle	5.3	19.8 19.7	19.8	8.2 8.2	8.2	33.0 33.0	33.0	94.1 94.2	94.2	7.1 7.1	7.1		6.1 6.4	6.3		11.7 10.9	11.3	
					Bottom	9.6	19.8 19.8	19.8	8.2 8.2	8.2	33.1 33.1	33.1	94.5 94.3	94.4	7.1 7.1	7.1	7.1	6.5 6.5	6.5		11.8 11.0	11.4	
18-Dec-13	Sunny	Moderate	13:29	10.7	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	32.8 32.8	32.8	94.3 94.4	94.4	7.3 7.3	7.3	7.3	7.7 7.8	7.8	8.2	10.8 10.4	10.6	12.6
					Middle	5.4	18.5 18.5	18.5	8.2 8.2	8.2	32.8 32.8	32.8	94.0 94.0	94.0	7.3 7.3	7.3		8.5 8.3	8.4		13.9 13.1	13.5	
					Bottom	9.7	18.5 18.5	18.5	8.2 8.2	8.2	32.8 32.8	32.8	94.0 94.0	94.0	7.3 7.3	7.3	7.3	8.4 8.5	8.5		13.1 14.2	13.7	
20-Dec-13	Sunny	Moderate	14:43	10.6	Surface	1.0	18.0 18.0	18.0	8.2 8.2	8.2	30.8 30.9	30.9	94.8 95.0	94.9	7.5 7.5	7.5	7.5	3.6 3.8	3.7	4.2	5.3 6.3	5.8	5.6
					Middle	5.3	18.1 18.1	18.1	8.2 8.2	8.2	32.7 32.7	32.7	94.6 94.6	94.6	7.4 7.4	7.4		4.7 4.6	4.7		5.4 6.0	5.7	
					Bottom	9.6	18.1 18.2	18.2	8.2 8.2	8.2	32.8 32.8	32.8	94.9 95.0	95.0	7.4 7.4	7.4	7.4	4.2 4.3	4.3		4.9 5.6	5.3	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS10 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	16:26	10.5	Surface	1.0	17.6 17.6	17.6	8.3 8.3	8.3	30.5 30.6	30.5	96.5 96.6	96.6	7.7 7.7	7.7	7.6	3.5 3.3	3.4	4.8	6.8 7.8	7.3	6.4
					Middle	5.3	17.5 17.5	17.5	8.3 8.3	8.3	32.0 32.0	32.0	95.7 95.6	95.7	7.5 7.5	7.5		5.8 5.6	5.7		6.7 5.7	6.2	
					Bottom	9.5	17.5 17.5	17.5	8.3 8.3	8.3	32.2 32.2	32.2	95.6 95.5	95.6	7.5 7.5	7.5	7.5	5.4 5.1	5.3		5.1 6.5	5.8	
25-Dec-13	Sunny	Moderate	18:27	11.3	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	32.3 32.3	32.3	97.1 96.8	97.0	7.6 7.6	7.6	7.6	5.2 5.4	5.3	6.1	7.7 6.4	7.1	8.3
					Middle	5.7	17.8 17.8	17.8	8.2 8.2	8.2	32.3 32.3	32.3	96.6 96.5	96.6	7.6 7.6	7.6		5.9 6.1	6.0		8.0 8.4	8.2	
					Bottom	10.3	17.8 17.8	17.8	8.2 8.2	8.2	32.4 32.4	32.4	96.2 96.2	96.2	7.5 7.5	7.5	7.5	6.9 7.0	7.0		8.8 10.3	9.6	
27-Dec-13	Sunny	Moderate	07:24	10.5	Surface	1.0	17.4 17.5	17.5	8.1 8.1	8.1	33.0 33.0	33.0	95.5 95.7	95.6	7.5 7.5	7.5	7.5	3.3 3.3	3.3	3.4	6.7 8.0	7.4	8.0
					Middle	5.3	17.7 17.6	17.7	8.1 8.1	8.1	33.1 33.1	33.1	95.4 95.3	95.4	7.5 7.5	7.5		3.5 3.4	3.5		6.4 7.7	7.1	
					Bottom	9.5	17.7 18.0	17.9	8.1 8.1	8.1	33.3 33.4	33.3	95.8 96.3	96.1	7.5 7.5	7.5	7.5	3.4 3.5	3.5		9.0 9.8	9.4	
30-Dec-13	Sunny	Moderate	11:21	10.8	Surface	1.0	17.1 17.1	17.1	8.2 8.2	8.2	34.0 34.0	34.0	100.6 99.7	100.2	7.9 7.8	7.9	7.9	2.6 2.6	2.6	2.7	7.4 7.9	7.7	7.8
					Middle	5.4	16.9 16.9	16.9	8.2 8.2	8.2	34.0 34.0	34.0	100.5 99.2	99.9	7.9 7.8	7.9		2.7 2.7	2.7		7.2 7.7	7.5	
					Bottom	9.8	16.8 16.7	16.8	8.2 8.2	8.2	34.0 34.0	34.0	99.0 100.8	99.9	7.8 8.0	7.9	7.9	2.7 2.8	2.8		7.4 9.2	8.3	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS10 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:38	10.5	Surface	1.0	20.3 20.2	20.3	8.2 8.2	8.2	32.8 32.8	32.8	96.9 97.9	97.4	7.2 7.3	7.3	7.3	8.0 8.2	8.1	8.4	10.0 11.6	10.8	11.8
					Middle	5.3	20.3 20.3	20.3	8.2 8.2	8.2	32.8 32.8	32.8	98.4 96.8	97.6	7.3 7.2	7.3		8.5 8.2	8.4		11.1 12.0	11.6	
					Bottom	9.5	20.3 20.3	20.3	8.2 8.2	8.2	32.8 32.8	32.8	96.9 100.1	98.5	7.2 7.5	7.3	7.3	8.6 8.5	8.6		13.0 13.2	13.1	
4-Dec-13	Sunny	Moderate	08:23	11.1	Surface	1.0	20.4 20.4	20.4	8.2 8.2	8.2	32.6 32.6	32.6	102.6 98.0	100.3	7.6 7.3	7.5	7.5	13.5 13.0	13.3	13.4	21.4 23.2	22.3	22.6
					Middle	5.6	20.5 20.4	20.5	8.2 8.2	8.2	32.6 32.6	32.6	97.9 100.3	99.1	7.3 7.5	7.4		13.3 13.6	13.5		23.3 23.8	23.6	
					Bottom	10.1	20.5 20.4	20.4	8.2 8.2	8.2	32.6 32.6	32.6	97.7 99.5	98.6	7.3 7.4	7.3	7.3	13.4 13.4	13.4		21.2 22.3	21.8	
6-Dec-13	Sunny	Moderate	10:07	10.5	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	32.2 32.2	32.2	96.7 95.8	96.3	7.3 7.2	7.2	7.2	14.1 12.8	13.5	14.9	19.1 20.9	20.0	20.9
					Middle	5.3	20.1 20.2	20.1	8.2 8.2	8.2	32.4 32.4	32.4	97.1 95.7	96.4	7.3 7.2	7.2		15.5 14.9	15.2		20.8 22.2	21.5	
					Bottom	9.5	20.1 20.1	20.1	8.2 8.2	8.2	32.4 32.4	32.4	95.9 98.4	97.2	7.2 7.4	7.3	7.3	15.5 16.3	15.9		21.8 20.3	21.1	
9-Dec-13	Sunny	Moderate	12:47	10.8	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	31.4 31.4	31.4	95.5 94.8	95.2	7.2 7.1	7.1	7.1	7.8 7.5	7.7	8.9	11.1 11.9	11.5	11.5
					Middle	5.4	20.2 20.2	20.2	8.1 8.1	8.1	31.5 31.5	31.5	95.3 94.4	94.9	7.2 7.1	7.1		9.4 9.6	9.5		11.4 10.2	10.8	
					Bottom	9.8	20.2 20.3	20.2	8.1 8.1	8.1	31.6 31.6	31.6	96.0 94.7	95.4	7.2 7.1	7.2	7.2	9.6 9.4	9.5		12.1 12.5	12.3	
11-Dec-13	Sunny	Moderate	14:39	9.7	Surface	1.0	20.4 20.4	20.4	8.2 8.2	8.2	31.3 31.2	31.2	93.7 94.0	93.9	7.0 7.1	7.1	7.1	6.3 6.1	6.2	7.4	16.1 16.4	16.3	18.4
					Middle	4.9	20.4 20.4	20.4	8.1 8.1	8.1	31.4 31.4	31.4	93.4 93.2	93.3	7.0 7.0	7.0		7.7 7.9	7.8		19.2 19.1	19.2	
					Bottom	8.7	20.4 20.4	20.4	8.1 8.1	8.1	31.5 31.4	31.4	93.3 93.6	93.5	7.0 7.0	7.0	7.0	8.4 8.1	8.3		19.8 19.4	19.6	
13-Dec-13	Fine	Moderate	15:58	10.3	Surface	1.0	20.2 20.2	20.2	8.1 8.1	8.1	32.3 32.3	32.3	97.0 96.9	97.0	7.3 7.3	7.3	7.3	3.1 3.1	3.1	3.9	6.8 5.7	6.3	5.8
					Middle	5.2	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	96.6 96.7	96.7	7.3 7.3	7.3		4.2 4.2	4.2		5.8 5.2	5.5	
					Bottom	9.3	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	96.4 96.5	96.5	7.2 7.2	7.2	7.2	4.3 4.3	4.3		5.6 5.6	5.6	
16-Dec-13	Rainy	Moderate	07:02	10.4	Surface	1.0	19.7 19.8	19.8	8.2 8.2	8.2	33.0 33.1	33.0	96.1 95.3	95.7	7.2 7.2	7.2	7.2	12.2 13.0	12.6	12.9	17.9 17.6	17.8	19.1
					Middle	5.2	19.8 19.8	19.8	8.2 8.2	8.2	33.1 33.1	33.1	95.2 97.2	96.2	7.2 7.3	7.2		12.9 12.8	12.9		18.9 19.0	19.0	
					Bottom	9.4	19.8 19.8	19.8	8.2 8.2	8.2	33.1 33.1	33.1	98.1 95.3	96.7	7.4 7.2	7.3	7.3	12.9 13.3	13.1		20.8 20.2	20.5	
18-Dec-13	Sunny	Moderate	08:51	10.7	Surface	1.0	18.1 18.1	18.1	8.2 8.2	8.2	32.8 32.8	32.8	95.2 97.2	96.2	7.4 7.5	7.5	7.5	12.9 12.5	12.7	11.9	33.8 33.5	33.7	**34.6**
					Middle	5.4	18.2 18.3	18.2	8.2 8.2	8.2	32.8 32.8	32.8	98.2 95.3	96.8	7.6 7.4	7.5		11.7 11.5	11.6		34.3 33.9	34.1	
					Bottom	9.7	18.3 18.3	18.3	8.2 8.2	8.2	32.8 32.9	32.8	101.6 95.9	98.8	7.9 7.4	7.6	7.6	11.5 11.5	11.5		36.2 35.9	36.1	
20-Dec-13	Sunny	Moderate	09:08	10.8	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	32.8 32.8	32.8	95.1 95.4	95.3	7.4 7.5	7.4	7.4	7.5 7.4	7.5	7.6	14.2 12.8	13.5	13.3
					Middle	5.4	17.8 17.8	17.8	8.2 8.2	8.2	32.9 32.9	32.9	95.3 94.8	95.1	7.4 7.4	7.4		7.5 7.6	7.6		12.8 12.6	12.7	
					Bottom	9.8	17.8 17.8	17.8	8.2 8.2	8.2	32.9 32.9	32.9	95.5 94.9	95.2	7.5 7.4	7.4	7.4	7.6 7.5	7.6		13.6 13.7	13.7	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS10 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	10:51	10.4	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	97.3 96.5	96.9	7.7 7.7	7.7	7.7	9.3 9.4	9.4	9.6	13.5 12.0	12.8	15.6
					Middle	5.2	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	96.3 97.5	96.9	7.6 7.7	7.7		10.2 10.0	10.1		16.6 17.0	16.8	
					Bottom	9.4	17.2 17.2	17.2	8.2 8.2	8.2	32.3 32.3	32.3	100.1 96.3	98.2	7.9 7.6	7.8	7.8	9.1 9.7	9.4		17.8 16.3	17.1	
25-Dec-13	Sunny	Moderate	12:27	11.6	Surface	1.0	17.7 17.7	17.7	8.2 8.2	8.2	32.5 32.5	32.5	95.7 95.7	95.7	7.5 7.5	7.5	7.5	8.2 8.1	8.2	8.7	12.6 12.2	12.4	13.7
					Middle	5.8	17.6 17.7	17.7	8.2 8.2	8.2	32.5 32.5	32.5	95.3 95.3	95.3	7.5 7.5	7.5		8.8 8.8	8.8		14.2 14.8	14.5	
					Bottom	10.6	17.7 17.7	17.7	8.1 8.2	8.2	32.6 32.6	32.6	95.2 95.4	95.3	7.5 7.5	7.5	7.5	9.0 8.9	9.0		14.5 13.8	14.2	
27-Dec-13	Sunny	Moderate	14:17	10.7	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	33.2 33.3	33.2	95.8 96.2	96.0	7.5 7.5	7.5	7.5	3.3 3.1	3.2	3.1	9.5 8.0	8.8	9.1
					Middle	5.4	17.9 17.9	17.9	8.2 8.2	8.2	33.4 33.4	33.4	95.8 96.1	96.0	7.4 7.5	7.5		3.0 3.2	3.1		9.1 9.0	9.1	
					Bottom	9.7	17.9 18.0	17.9	8.2 8.2	8.2	33.5 33.4	33.5	96.3 96.4	96.4	7.5 7.5	7.5	7.5	3.0 3.2	3.1		8.7 10.0	9.4	
30-Dec-13	Sunny	Moderate	16:24	10.8	Surface	1.0	17.0 17.0	17.0	8.3 8.3	8.3	33.9 33.9	33.9	100.3 100.4	100.4	7.9 7.9	7.9	7.9	2.7 2.7	2.7	2.7	11.6 10.0	10.8	11.1
					Middle	5.4	17.0 17.0	17.0	8.3 8.3	8.3	33.9 33.9	33.9	100.0 100.1	100.1	7.9 7.9	7.9		2.6 2.6	2.6		11.3 11.6	11.5	
					Bottom	9.8	17.0 17.0	17.0	8.3 8.3	8.3	33.9 33.9	33.9	100.0 99.9	100.0	7.9 7.9	7.9	7.9	2.6 2.7	2.7		11.2 10.5	10.9	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)11 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	12:29	10.1	Surface	1.0	20.6 20.6	20.6	8.2 8.2	8.2	32.9 32.9	32.9	97.1 97.6	97.4	7.2 7.2	7.2	7.2	3.7 3.8	3.8	3.9	8.5 8.7	8.6	9.7
					Middle	5.1	20.5 20.5	20.5	8.2 8.2	8.2	32.9 32.9	32.9	96.7 97.4	97.1	7.2 7.2	7.2		3.8 4.0	3.9		10.1 9.1	9.6	
					Bottom	9.1	20.5 20.4	20.5	8.2 8.2	8.2	32.9 32.9	32.9	97.1 98.3	97.7	7.2 7.3	7.3	7.3	3.8 4.0	3.9		11.5 10.3	10.9	
4-Dec-13	Sunny	Moderate	13:37	11.1	Surface	1.0	20.7 20.8	20.8	8.2 8.2	8.2	32.4 32.4	32.4	100.9 97.6	99.3	7.5 7.2	7.4	7.4	4.2 4.3	4.3	4.7	7.5 7.1	7.3	7.0
					Middle	5.6	20.7 20.7	20.7	8.2 8.2	8.2	32.5 32.5	32.5	99.5 97.1	98.3	7.4 7.2	7.3		4.8 4.9	4.9		7.4 6.7	7.1	
					Bottom	10.1	20.7 20.7	20.7	8.2 8.2	8.2	32.5 32.5	32.5	97.1 98.6	97.9	7.2 7.3	7.3	7.3	5.1 4.9	5.0		6.7 6.6	6.7	
6-Dec-13	Sunny	Moderate	15:43	10.4	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	32.2 32.2	32.2	94.8 95.5	95.2	7.1 7.1	7.1	7.1	6.0 6.6	6.3	7.1	9.1 10.3	9.7	9.7
					Middle	5.2	20.3 20.3	20.3	8.2 8.1	8.2	32.2 32.2	32.2	94.4 95.4	94.9	7.1 7.1	7.1		6.8 7.0	6.9		9.4 9.2	9.3	
					Bottom	9.4	20.2 20.2	20.2	8.1 8.2	8.2	32.2 32.2	32.2	95.8 94.3	95.1	7.2 7.1	7.1	7.1	8.2 7.7	8.0		10.0 10.0	10.0	
9-Dec-13	Sunny	Moderate	19:12	10.6	Surface	1.0	20.4 20.5	20.5	8.1 8.1	8.1	30.6 30.4	30.5	93.7 94.5	94.1	7.1 7.1	7.1	7.1	3.3 3.4	3.4	4.7	8.5 8.8	8.7	8.7
					Middle	5.3	20.4 20.3	20.3	8.1 8.1	8.1	31.3 31.4	31.3	93.9 93.1	93.5	7.1 7.0	7.0		5.1 5.3	5.2		8.0 8.7	8.4	
					Bottom	9.6	20.3 20.3	20.3	8.1 8.1	8.1	31.5 31.4	31.5	93.7 93.3	93.5	7.0 7.0	7.0	7.0	5.5 5.3	5.4		8.3 9.9	9.1	
11-Dec-13	Fine	Moderate	07:34	9.6	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	31.6 31.6	31.6	92.4 92.5	92.5	6.9 6.9	6.9	6.9	4.0 4.3	4.2	5.4	15.9 15.4	15.7	15.0
					Middle	4.8	20.5 20.5	20.5	8.1 8.1	8.1	31.8 31.9	31.9	91.6 91.9	91.8	6.8 6.9	6.9		5.4 5.4	5.4		14.3 14.0	14.2	
					Bottom	8.6	20.5 20.5	20.5	8.1 8.1	8.1	32.1 32.1	32.1	92.2 91.9	92.1	6.9 6.9	6.9	6.9	6.5 6.6	6.6		14.8 15.3	15.1	
13-Dec-13	Cloudy	Moderate	09:45	9.7	Surface	1.0	20.0 19.9	20.0	8.1 8.1	8.1	32.2 32.1	32.1	93.5 94.1	93.8	7.0 7.1	7.1	7.1	5.5 5.2	5.4	6.9	8.9 9.4	9.2	10.3
					Middle	4.9	20.2 20.2	20.2	8.1 8.1	8.1	32.5 32.5	32.5	93.6 93.8	93.7	7.0 7.0	7.0		6.5 6.0	6.3		10.7 10.5	10.6	
					Bottom	8.7	20.2 20.2	20.2	8.1 8.1	8.1	32.5 32.5	32.5	93.6 94.1	93.9	7.0 7.0	7.0	7.0	8.9 8.8	8.9		11.0 11.4	11.2	
16-Dec-13	Rainy	Moderate	12:34	10.1	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	33.0 33.0	33.0	94.2 95.9	95.1	7.1 7.2	7.2	7.2	7.6 7.8	7.7	7.8	11.2 12.2	11.7	11.7
					Middle	5.1	19.8 19.8	19.8	8.2 8.2	8.2	33.0 33.0	33.0	94.1 97.6	95.9	7.1 7.3	7.2		7.7 7.9	7.8		11.7 11.2	11.5	
					Bottom	9.1	19.9 19.8	19.9	8.2 8.2	8.2	33.1 33.0	33.1	94.6 100.4	97.5	7.1 7.5	7.3	7.3	7.7 7.8	7.8		11.7 11.9	11.8	
18-Dec-13	Sunny	Moderate	13:40	10.6	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	32.8 32.8	32.8	94.8 95.9	95.4	7.3 7.4	7.3	7.3	10.5 10.5	10.5	11.3	17.4 16.9	17.2	18.5
					Middle	5.3	18.6 18.6	18.6	8.2 8.2	8.2	32.9 32.8	32.9	94.8 96.1	95.5	7.3 7.4	7.3		11.7 11.7	11.7		18.1 19.0	18.6	
					Bottom	9.6	18.7 18.6	18.7	8.2 8.2	8.2	32.9 32.9	32.9	97.4 95.2	96.3	7.5 7.3	7.4	7.4	11.8 11.5	11.7		20.1 19.2	19.7	
20-Dec-13	Sunny	Moderate	14:54	10.4	Surface	1.0	18.0 18.0	18.0	8.2 8.2	8.2	32.5 32.4	32.4	95.6 96.6	96.1	7.5 7.5	7.5	7.5	8.2 8.0	8.1	8.5	7.9 7.8	7.9	9.3
					Middle	5.2	17.8 17.9	17.8	8.2 8.2	8.2	32.7 32.7	32.7	96.7 95.4	96.1	7.6 7.5	7.5		8.6 8.5	8.6		8.8 10.4	9.6	
					Bottom	9.4	17.8 17.9	17.9	8.2 8.2	8.2	32.7 32.6	32.7	97.7 95.7	96.7	7.6 7.5	7.6	7.6	8.9 8.6	8.8		10.5 10.0	10.3	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)11 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	16:35	10.7	Surface	1.0	17.6 17.6	17.6	8.2 8.2	8.2	32.1 32.1	32.1	96.3 97.4	96.9	7.6 7.7	7.6	7.6	7.1 7.5	7.3	8.4	11.0 12.0	11.5	12.5
					Middle	5.4	17.5 17.5	17.5	8.2 8.2	8.2	32.1 32.1	32.1	96.8 95.7	96.3	7.6 7.5	7.6		8.5 8.1	8.3		12.6 12.9	12.8	
					Bottom	9.7	17.5 17.6	17.6	8.2 8.2	8.2	32.2 32.3	32.3	97.8 96.3	97.1	7.7 7.6	7.6	7.6	9.9 9.5	9.7		13.2 13.1	13.2	
25-Dec-13	Sunny	Moderate	18:39	11.3	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	32.4 32.4	32.4	96.4 96.4	96.4	7.6 7.6	7.6	7.6	6.2 6.5	6.4	6.5	10.9 11.5	11.2	12.0
					Middle	5.7	17.9 17.8	17.9	8.2 8.2	8.2	32.5 32.5	32.5	96.0 95.8	95.9	7.5 7.5	7.5		6.5 6.4	6.5		11.0 11.7	11.4	
					Bottom	10.3	18.2 18.2	18.2	8.2 8.2	8.2	32.9 32.9	32.9	96.6 96.4	96.5	7.5 7.5	7.5	7.5	6.7 6.6	6.7		13.4 13.6	13.5	
27-Dec-13	Sunny	Moderate	07:14	10.3	Surface	1.0	17.6 17.6	17.6	8.1 8.1	8.1	33.0 33.0	33.0	95.0 94.6	94.8	7.5 7.4	7.4	7.4	3.0 3.0	3.0	3.0	6.1 5.9	6.0	6.3
					Middle	5.2	17.7 17.8	17.7	8.1 8.1	8.1	33.2 33.2	33.2	94.5 94.3	94.4	7.4 7.4	7.4		2.9 2.8	2.9		6.4 6.5	6.5	
					Bottom	9.3	18.3 17.9	18.1	8.1 8.1	8.1	33.8 33.6	33.7	94.8 95.3	95.1	7.3 7.4	7.3	7.3	3.1 3.2	3.2		5.7 7.3	6.5	
30-Dec-13	Sunny	Moderate	11:10	10.2	Surface	1.0	17.0 16.9	17.0	8.2 8.2	8.2	34.0 33.9	33.9	98.3 98.3	98.3	7.7 7.8	7.8	7.8	3.5 3.6	3.6	4.4	8.4 7.9	8.2	7.7
					Middle	5.1	16.8 16.8	16.8	8.2 8.2	8.2	33.9 34.0	34.0	97.7 98.0	97.9	7.7 7.7	7.7		4.5 4.6	4.6		7.4 7.3	7.4	
					Bottom	9.2	16.9 16.8	16.9	8.2 8.2	8.2	34.0 34.0	34.0	97.8 98.2	98.0	7.7 7.8	7.7	7.7	4.9 4.8	4.9		7.6 7.4	7.5	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)11 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:28	10.2	Surface	1.0	20.5 20.5	20.5	8.2 8.2	8.2	33.0 33.0	33.0	96.8 96.3	96.6	7.2 7.1	7.2	7.2	7.2 7.1	7.2		8.9 9.0	9.0	
					Middle	5.1	20.5 20.5	20.5	8.2 8.2	8.2	33.0 33.0	33.0	96.2 96.7	96.5	7.1 7.2	7.2		9.0 8.9	9.0	8.6	8.4 8.9	8.7	9.4
					Bottom	9.2	20.5 20.5	20.5	8.2 8.2	8.2	33.0 33.0	33.0	96.3 96.8	96.6	7.1 7.2	7.2	7.2	9.6 9.3	9.5		10.9 9.9	10.4	
4-Dec-13	Sunny	Moderate	08:15	11.1	Surface	1.0	20.6 20.6	20.6	8.2 8.2	8.2	32.4 32.4	32.4	95.4 95.3	95.4	7.1 7.1	7.1	7.1	11.2 10.9	11.1		13.2 14.4	13.8	
					Middle	5.6	20.6 20.5	20.6	8.2 8.2	8.2	32.5 32.5	32.5	95.2 95.2	95.2	7.1 7.1	7.1		11.0 11.4	11.2	11.2	15.6 15.8	15.7	15.9
					Bottom	10.1	20.6 20.5	20.6	8.2 8.2	8.2	32.5 32.5	32.5	95.1 95.2	95.2	7.1 7.1	7.1	7.1	11.2 11.5	11.4		17.6 18.7	18.2	
6-Dec-13	Sunny	Moderate	09:57	10.2	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	32.3 32.3	32.3	94.8 94.8	94.8	7.1 7.1	7.1	7.1	12.2 12.0	12.1		13.8 13.0	13.4	
					Middle	5.1	20.2 20.2	20.2	8.2 8.2	8.2	32.3 32.3	32.3	94.3 94.5	94.4	7.1 7.1	7.1		13.9 13.1	13.5	12.9	13.0 13.5	13.3	13.3
					Bottom	9.2	20.2 20.2	20.2	8.2 8.2	8.2	32.3 32.3	32.3	94.4 94.7	94.6	7.1 7.1	7.1	7.1	13.1 13.3	13.2		12.4 14.2	13.3	
9-Dec-13	Sunny	Moderate	12:39	10.3	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	31.6 31.6	31.6	94.2 94.6	94.4	7.1 7.1	7.1	7.1	7.6 7.9	7.8		9.4 10.5	10.0	
					Middle	5.2	20.2 20.2	20.2	8.1 8.1	8.1	31.7 31.7	31.7	93.9 94.2	94.1	7.1 7.1	7.1		9.9 9.7	9.8	9.4	11.7 10.5	11.1	10.8
					Bottom	9.3	20.2 20.2	20.2	8.1 8.1	8.1	31.7 31.6	31.7	94.5 94.1	94.3	7.1 7.1	7.1	7.1	10.5 10.5	10.5		10.8 11.5	11.2	
11-Dec-13	Sunny	Moderate	14:52	10.0	Surface	1.0	20.4 20.4	20.4	8.1 8.2	8.2	31.6 31.6	31.6	93.1 94.3	93.7	7.0 7.1	7.0	7.0	5.1 4.8	5.0		11.6 10.9	11.3	
					Middle	5.0	20.4 20.4	20.4	8.2 8.1	8.2	31.6 31.7	31.7	95.2 92.7	94.0	7.1 6.9	7.0		5.2 5.0	5.1	5.2	11.1 10.1	10.6	11.6
					Bottom	9.0	20.4 20.4	20.4	8.2 8.1	8.2	31.7 31.7	31.7	96.7 93.1	94.9	7.2 7.0	7.1	7.1	5.6 5.5	5.6		12.5 13.3	12.9	
13-Dec-13	Fine	Moderate	16:10	10.0	Surface	1.0	20.2 20.2	20.2	8.1 8.1	8.1	32.3 32.3	32.3	92.5 93.6	93.1	6.9 7.0	7.0	7.0	7.3 7.2	7.3		8.0 7.6	7.8	
					Middle	5.0	20.3 20.3	20.3	8.1 8.1	8.1	32.4 32.5	32.4	92.3 94.0	93.2	6.9 7.0	7.0		8.8 9.4	9.1	8.4	11.4 12.5	12.0	10.9
					Bottom	9.0	20.3 20.3	20.3	8.1 8.1	8.1	32.5 32.5	32.5	92.7 96.4	94.6	6.9 7.2	7.1	7.1	8.6 8.9	8.8		13.0 12.9	13.0	
16-Dec-13	Rainy	Moderate	06:52	10.4	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	33.3 33.3	33.3	96.0 95.8	95.9	7.2 7.2	7.2	7.2	11.9 11.8	11.9		5.1 6.4	5.8	
					Middle	5.2	19.9 19.9	19.9	8.2 8.2	8.2	33.4 33.4	33.4	95.9 95.7	95.8	7.2 7.2	7.2		11.5 11.8	11.7	11.8	8.2 8.3	8.3	7.8
					Bottom	9.4	19.8 19.9	19.9	8.2 8.2	8.2	33.3 33.4	33.4	95.8 96.0	95.9	7.2 7.2	7.2	7.2	11.8 11.9	11.9		9.6 9.0	9.3	
18-Dec-13	Sunny	Moderate	08:40	10.4	Surface	1.0	18.6 18.6	18.6	8.2 8.2	8.2	33.0 33.0	33.0	94.6 94.1	94.4	7.3 7.2	7.2	7.2	7.4 7.2	7.3		13.4 13.5	13.5	
					Middle	5.2	18.6 18.6	18.6	8.2 8.2	8.2	33.0 33.0	33.0	94.0 94.7	94.4	7.2 7.3	7.2		7.4 7.6	7.5	7.5	12.8 14.3	13.6	14.7
					Bottom	9.4	18.6 18.6	18.6	8.2 8.2	8.2	33.0 33.0	33.0	94.9 94.1	94.5	7.3 7.2	7.3	7.3	7.7 7.6	7.7		17.1 16.7	16.9	
20-Dec-13	Sunny	Moderate	09:00	10.6	Surface	1.0	17.6 17.6	17.6	8.2 8.2	8.2	32.8 32.8	32.8	95.8 96.0	95.9	7.5 7.5	7.5	7.5	8.7 8.8	8.8		13.2 12.6	12.9	
					Middle	5.3	17.6 17.6	17.6	8.1 8.2	8.2	32.8 32.8	32.8	95.8 95.6	95.7	7.5 7.5	7.5		9.8 9.4	9.6	9.3	12.8 12.9	12.9	13.2
					Bottom	9.6	17.6 17.6	17.6	8.1 8.2	8.2	32.8 32.8	32.8	96.0 95.6	95.8	7.5 7.5	7.5	7.5	9.6 9.6	9.6		12.7 14.9	13.8	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)11 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	10:43	10.7	Surface	1.0	17.4 17.4	17.4	8.2 8.2	8.2	32.4 32.4	32.4	95.7 95.6	95.7	7.5 7.5	7.5	7.5	7.2 7.3	7.3	8.8	14.4 14.6	14.5	14.5
					Middle	5.4	17.5 17.4	17.5	8.2 8.2	8.2	32.5 32.4	32.4	95.4 95.2	95.3	7.5 7.5	7.5		9.2 9.0	9.1		13.8 13.0	13.4	
					Bottom	9.7	17.5 17.5	17.5	8.2 8.2	8.2	32.5 32.5	32.5	95.1 95.2	95.2	7.5 7.5	7.5	7.5	10.1 10.0	10.1		15.8 15.6	15.7	
25-Dec-13	Sunny	Moderate	12:17	11.4	Surface	1.0	18.1 18.0	18.1	8.2 8.2	8.2	32.8 32.8	32.8	95.8 95.9	95.9	7.5 7.5	7.5	7.5	2.0 2.0	2.0	2.6	4.9 4.7	4.8	4.9
					Middle	5.7	18.1 18.1	18.1	8.2 8.2	8.2	32.8 32.8	32.8	95.0 95.2	95.1	7.4 7.4	7.4		2.4 2.3	2.4		4.2 5.3	4.8	
					Bottom	10.4	18.2 18.3	18.2	8.2 8.2	8.2	33.0 33.1	33.0	94.7 94.7	94.7	7.3 7.3	7.3	7.3	3.5 3.4	3.5		4.5 5.5	5.0	
27-Dec-13	Sunny	Moderate	14:29	10.3	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	33.9 33.9	33.9	95.5 97.9	96.7	7.3 7.5	7.4	7.5	2.5 2.2	2.4	3.3	4.5 5.6	5.1	7.0
					Middle	5.2	18.5 18.5	18.5	8.2 8.2	8.2	33.9 33.9	33.9	99.7 95.9	97.8	7.6 7.3	7.5		3.8 3.6	3.7		8.7 8.8	8.8	
					Bottom	9.3	18.5 18.5	18.5	8.2 8.2	8.2	33.8 33.9	33.9	101.4 96.4	98.9	7.8 7.4	7.6	7.6	3.6 3.7	3.7		7.2 7.1	7.2	
30-Dec-13	Sunny	Moderate	16:34	10.6	Surface	1.0	17.2 17.2	17.2	8.2 8.3	8.3	33.9 33.9	33.9	100.5 99.5	100.0	7.9 7.8	7.8	7.9	5.0 5.3	5.2	5.4	10.3 9.7	10.0	9.9
					Middle	5.3	17.2 17.2	17.2	8.2 8.2	8.2	33.9 34.0	34.0	101.0 99.3	100.2	7.9 7.8	7.9		5.5 5.3	5.4		8.6 8.4	8.5	
					Bottom	9.6	17.2 17.2	17.2	8.2 8.2	8.2	34.0 33.9	33.9	99.8 102.3	101.1	7.8 8.0	7.9	7.9	5.6 5.8	5.7		12.1 10.5	11.3	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)16 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	11:53	6.5	Surface	1.0	20.6 20.5	20.6	8.0 8.0	8.0	32.8 32.8	32.8	99.3 97.5	98.4	7.4 7.2	7.3	7.3	7.1 7.5	7.3	7.7	9.8 9.7	9.8	9.3
					Middle	3.3	20.5 20.5	20.5	8.0 8.0	8.0	32.8 32.8	32.8	97.1 99.9	98.5	7.2 7.4	7.3		8.1 7.6	7.9		8.4 9.0	8.7	
					Bottom	5.5	20.5 20.5	20.5	8.0 8.0	8.0	32.8 32.8	32.8	102.7 97.4	100.1	7.6 7.2	7.4	7.4	7.9 8.0	8.0		9.1 9.6	9.4	
4-Dec-13	Sunny	Moderate	13:37	6.3	Surface	1.0	20.6 20.6	20.6	8.0 8.0	8.0	32.2 32.2	32.2	97.2 97.2	97.2	7.2 7.2	7.2	7.2	15.8 15.4	15.6	16.3	16.6 17.2	16.9	18.0
					Middle	3.2	20.5 20.5	20.5	8.0 8.0	8.0	32.3 32.3	32.3	97.2 97.2	97.2	7.2 7.3	7.2		16.7 16.5	16.6		17.6 16.6	17.1	
					Bottom	5.3	20.4 20.5	20.4	8.0 8.0	8.0	32.4 32.3	32.3	96.6 97.5	97.1	7.2 7.3	7.2	7.2	16.4 16.7	16.6		20.0 20.0	20.0	
6-Dec-13	Sunny	Moderate	15:23	6.2	Surface	1.0	20.5 20.4	20.5	8.0 8.0	8.0	31.9 31.9	31.9	97.1 96.4	96.8	7.3 7.2	7.2	7.2	13.6 13.7	13.7	13.6	11.0 11.4	11.2	11.7
					Middle	3.1	20.4 20.4	20.4	7.9 8.0	8.0	31.9 31.9	31.9	97.3 96.3	96.8	7.3 7.2	7.2		13.5 13.4	13.5		11.6 11.9	11.8	
					Bottom	5.2	20.3 20.4	20.4	7.9 7.9	7.9	32.0 32.0	32.0	99.1 96.5	97.8	7.4 7.2	7.3	7.3	13.6 13.7	13.7		12.1 12.0	12.1	
9-Dec-13	Sunny	Moderate	18:21	6.6	Surface	1.0	20.4 20.4	20.4	8.0 7.9	8.0	31.6 31.6	31.6	94.3 94.6	94.5	7.1 7.1	7.1	7.1	14.8 15.2	15.0	16.1	13.5 12.9	13.2	14.7
					Middle	3.3	20.4 20.4	20.4	7.9 8.0	7.9	31.7 31.7	31.7	94.7 94.2	94.5	7.1 7.1	7.1		16.6 15.9	16.3		15.1 15.3	15.2	
					Bottom	5.6	20.4 20.4	20.4	7.9 8.0	7.9	31.8 31.7	31.7	95.3 94.2	94.8	7.1 7.1	7.1	7.1	17.3 16.8	17.1		16.0 15.4	15.7	
11-Dec-13	Fine	Moderate	07:50	6.2	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	31.2 31.2	31.2	93.5 94.2	93.9	7.0 7.1	7.1	7.1	9.4 9.5	9.5	9.7	11.8 10.6	11.2	11.8
					Middle	3.1	20.3 20.3	20.3	7.9 7.9	7.9	31.3 31.2	31.2	94.7 93.4	94.1	7.1 7.0	7.1		9.7 9.8	9.8		12.0 10.4	11.2	
					Bottom	5.2	20.4 20.4	20.4	7.9 7.9	7.9	31.4 31.4	31.4	93.8 95.8	94.8	7.0 7.2	7.1	7.1	9.6 9.8	9.7		12.3 13.4	12.9	
13-Dec-13	Cloudy	Moderate	10:11	6.1	Surface	1.0	20.0 20.0	20.0	7.9 7.9	7.9	32.0 32.0	32.0	93.0 92.4	92.7	7.0 7.0	7.0	7.0	11.5 11.9	11.7	11.9	18.6 17.3	18.0	18.0
					Middle	3.1	20.0 20.0	20.0	7.9 7.9	7.9	32.0 32.0	32.0	93.2 92.2	92.7	7.0 6.9	7.0		11.5 11.5	11.5		17.5 18.7	18.1	
					Bottom	5.1	20.1 20.1	20.1	7.9 7.9	7.9	32.1 32.1	32.1	92.8 94.8	93.8	7.0 7.1	7.0	7.0	12.6 12.6	12.6		18.1 17.4	17.8	
16-Dec-13	Rainy	Moderate	11:47	7.3	Surface	1.0	19.7 19.8	19.8	8.0 8.0	8.0	32.9 32.8	32.9	103.9 94.6	99.3	7.8 7.1	7.5	7.4	6.6 6.3	6.5	6.6	7.7 7.6	7.7	7.9
					Middle	3.7	19.9 19.8	19.8	8.0 8.0	8.0	32.9 32.8	32.9	94.0 98.9	96.5	7.1 7.4	7.2		6.3 6.7	6.5		7.5 6.9	7.2	
					Bottom	6.3	19.8 19.8	19.8	8.0 8.0	8.0	32.8 32.9	32.9	95.7 93.6	94.7	7.2 7.0	7.1	7.1	6.7 6.6	6.7		9.1 8.3	8.7	
18-Dec-13	Sunny	Moderate	13:06	7.0	Surface	1.0	18.5 18.5	18.5	8.0 8.0	8.0	32.5 32.5	32.5	94.9 94.7	94.8	7.3 7.3	7.3	7.3	13.8 14.0	13.9	14.2	9.8 10.4	10.1	10.7
					Middle	3.5	18.5 18.5	18.5	8.0 8.0	8.0	32.5 32.5	32.5	94.6 94.7	94.7	7.3 7.3	7.3		14.2 14.0	14.1		9.2 10.2	9.7	
					Bottom	6.0	18.5 18.5	18.5	8.0 8.0	8.0	32.5 32.5	32.5	94.8 94.7	94.8	7.3 7.3	7.3	7.3	14.5 14.8	14.7		12.0 12.3	12.2	
20-Dec-13	Sunny	Moderate	14:09	6.5	Surface	1.0	18.1 18.2	18.2	8.0 8.0	8.0	32.6 32.6	32.6	96.0 97.0	96.5	7.5 7.5	7.5	7.5	11.4 11.8	11.6	11.0	18.3 17.7	18.0	18.9
					Middle	3.3	18.2 18.2	18.2	8.0 8.0	8.0	32.6 32.6	32.6	97.9 96.0	97.0	7.6 7.5	7.5		10.6 11.2	10.9		18.1 18.9	18.5	
					Bottom	5.5	18.2 18.1	18.2	8.0 7.9	8.0	32.7 32.6	32.7	96.4 99.4	97.9	7.5 7.7	7.6	7.6	10.9 10.0	10.5		20.4 20.0	20.2	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)16 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	16:09	6.3	Surface	1.0	17.6 17.6	17.6	8.0 8.0	8.0	31.7 31.7	31.7	95.6 96.6	96.1	7.6 7.6	7.6	7.6	12.1 12.8	12.5	12.5	16.5 16.4	16.5	17.0
					Middle	3.2	17.6 17.6	17.6	8.0 8.0	8.0	31.8 31.8	31.8	97.2 95.8	96.5	7.7 7.6	7.6		12.9 12.2	12.6		17.8 17.7	17.8	
					Bottom	5.3	17.6 17.6	17.6	8.0 8.0	8.0	31.9 31.9	31.9	96.1 98.1	97.1	7.6 7.7	7.7	7.7	12.3 12.6	12.5		16.1 17.5	16.8	
25-Dec-13	Sunny	Moderate	18:22	6.2	Surface	1.0	17.8 17.8	17.8	8.0 8.0	8.0	32.3 32.3	32.3	97.3 96.6	97.0	7.6 7.6	7.6	7.6	14.2 14.2	14.2	14.2	7.9 7.3	7.6	12.5
					Middle	3.1	17.9 17.9	17.9	8.0 8.0	8.0	32.3 32.3	32.3	96.3 97.5	96.9	7.5 7.6	7.6		14.3 14.2	14.3		15.1 14.5	14.8	
					Bottom	5.2	18.0 17.9	18.0	8.0 8.0	8.0	32.5 32.5	32.5	99.3 97.4	98.4	7.7 7.6	7.7	7.7	14.1 14.2	14.2		15.2 14.7	15.0	
27-Dec-13	Sunny	Moderate	07:21	6.3	Surface	1.0	17.5 17.6	17.6	8.0 8.0	8.0	33.1 33.1	33.1	94.9 96.8	95.9	7.4 7.6	7.5	7.5	4.8 4.4	4.6	5.0	6.0 6.1	6.1	6.8
					Middle	3.2	17.6 17.6	17.6	8.0 8.0	8.0	33.1 33.1	33.1	95.0 97.6	96.3	7.4 7.6	7.5		5.2 5.0	5.1		7.3 7.1	7.2	
					Bottom	5.3	17.6 17.6	17.6	8.0 8.0	8.0	33.1 33.1	33.1	95.1 99.5	97.3	7.4 7.8	7.6	7.6	5.1 5.2	5.2		7.3 6.6	7.0	
30-Dec-13	Sunny	Moderate	11:16	6.4	Surface	1.0	17.2 17.2	17.2	8.0 8.0	8.0	33.7 33.7	33.7	98.3 99.9	99.1	7.7 7.8	7.8	7.8	7.1 7.3	7.2	10.1	7.5 6.5	7.0	7.1
					Middle	3.2	17.1 17.1	17.1	8.0 8.0	8.0	33.7 33.7	33.7	100.2 98.1	99.2	7.9 7.7	7.8		10.0 9.6	9.8		6.8 7.5	7.2	
					Bottom	5.4	17.0 17.1	17.0	8.0 8.0	8.0	33.7 33.7	33.7	102.1 98.3	100.2	8.1 7.7	7.9	7.9	13.3 13.1	13.2		6.7 7.7	7.2	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)16 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:27	6.3	Surface	1.0	20.4 20.4	20.4	8.0 8.0	8.0	32.8 32.8	32.8	97.0 99.1	98.1	7.2 7.4	7.3	7.3	8.7 8.4	8.6	9.3	14.4 14.4	14.4	16.0
					Middle	3.2	20.4 20.4	20.4	8.0 8.0	8.0	32.8 32.8	32.8	100.2 97.1	98.7	7.5 7.2	7.3		8.9 9.5	9.2		14.7 15.0	14.9	
					Bottom	5.3	20.4 20.4	20.4	8.0 8.0	8.0	32.8 32.8	32.8	104.0 97.5	100.8	7.7 7.3	7.5	7.5	10.0 10.4	10.2		18.4 19.0	18.7	
4-Dec-13	Sunny	Moderate	08:39	6.5	Surface	1.0	20.4 20.5	20.5	8.0 8.0	8.0	32.4 32.4	32.4	94.6 97.1	95.9	7.1 7.2	7.1	7.1	11.3 11.4	11.4	13.4	10.0 9.7	9.9	11.1
					Middle	3.3	20.5 20.5	20.5	8.0 8.0	8.0	32.4 32.4	32.4	97.7 93.3	95.5	7.3 7.0	7.1		14.3 14.3	14.3		11.7 11.0	11.4	
					Bottom	5.5	20.5 20.5	20.5	8.0 7.9	8.0	32.5 32.5	32.5	98.7 93.5	96.1	7.4 7.0	7.2	7.2	14.4 14.3	14.4		11.0 12.7	11.9	
6-Dec-13	Sunny	Moderate	10:22	6.3	Surface	1.0	20.2 20.2	20.2	7.9 7.9	7.9	32.0 32.0	32.0	96.2 94.9	95.6	7.2 7.1	7.2	7.2	12.4 12.6	12.5	13.7	13.8 12.3	13.1	12.6
					Middle	3.2	20.2 20.2	20.2	7.9 7.9	7.9	32.0 32.0	32.0	97.4 94.8	96.1	7.3 7.1	7.2		14.1 14.3	14.2		12.3 12.8	12.6	
					Bottom	5.3	20.2 20.2	20.2	7.9 7.9	7.9	32.0 32.0	32.0	99.9 95.1	97.5	7.5 7.1	7.3	7.3	14.3 14.3	14.3		12.5 11.6	12.1	
9-Dec-13	Sunny	Moderate	12:45	6.6	Surface	1.0	20.4 20.4	20.4	7.9 7.9	7.9	31.3 31.3	31.3	94.6 94.2	94.4	7.1 7.1	7.1	7.1	6.9 6.8	6.9	9.8	7.9 7.1	7.5	7.2
					Middle	3.3	20.3 20.3	20.3	7.9 7.9	7.9	31.4 31.4	31.4	94.0 93.4	93.7	7.1 7.0	7.0		10.1 9.6	9.9		6.6 7.4	7.0	
					Bottom	5.6	20.2 20.2	20.2	7.9 7.9	7.9	31.5 31.5	31.5	94.4 93.8	94.1	7.1 7.1	7.1	7.1	12.6 12.3	12.5		7.6 6.3	7.0	
11-Dec-13	Sunny	Moderate	14:26	6.4	Surface	1.0	20.4 20.4	20.4	7.9 7.9	7.9	31.3 31.4	31.4	94.7 93.9	94.3	7.1 7.0	7.1	7.1	4.7 5.1	4.9	5.8	6.4 6.3	6.4	6.7
					Middle	3.2	20.4 20.4	20.4	7.9 7.9	7.9	31.5 31.5	31.5	93.7 94.7	94.2	7.0 7.1	7.1		5.9 6.3	6.1		6.6 5.1	5.9	
					Bottom	5.4	20.4 20.4	20.4	7.9 7.9	7.9	31.5 31.5	31.5	94.2 96.2	95.2	7.1 7.2	7.1	7.1	6.5 6.2	6.4		7.9 7.9	7.9	
13-Dec-13	Fine	Moderate	15:40	6.2	Surface	1.0	20.1 20.1	20.1	8.0 8.0	8.0	32.1 32.1	32.1	92.4 92.7	92.6	7.0 7.0	7.0	7.0	5.6 5.6	5.6	5.9	9.0 7.6	8.3	8.8
					Middle	3.1	20.2 20.2	20.2	8.0 8.0	8.0	32.3 32.3	32.3	92.6 92.2	92.4	6.9 6.9	6.9		5.8 5.6	5.7		9.1 8.6	8.9	
					Bottom	5.2	20.2 20.2	20.2	8.0 8.0	8.0	32.3 32.3	32.3	95.0 92.5	93.8	7.1 6.9	7.0	7.0	6.2 6.4	6.3		9.0 9.1	9.1	
16-Dec-13	Rainy	Moderate	07:02	6.8	Surface	1.0	19.9 19.9	19.9	8.0 8.0	8.0	32.8 32.8	32.8	99.3 93.4	96.4	7.5 7.0	7.2	7.2	8.4 8.5	8.5	8.8	10.5 9.4	10.0	9.9
					Middle	3.4	19.9 19.9	19.9	8.0 8.0	8.0	32.8 32.8	32.8	92.9 96.4	94.7	7.0 7.2	7.1		8.8 8.8	8.8		10.3 9.4	9.9	
					Bottom	5.8	19.9 19.9	19.9	8.0 8.0	8.0	32.8 32.8	32.8	92.8 94.7	93.8	7.0 7.1	7.0	7.0	9.3 9.0	9.2		9.8 10.0	9.9	
18-Dec-13	Sunny	Moderate	08:07	7.1	Surface	1.0	18.6 18.6	18.6	8.0 8.0	8.0	32.5 32.5	32.5	92.4 91.2	91.8	7.1 7.0	7.1	7.1	15.9 16.1	16.0	16.4	15.4 15.9	15.7	15.1
					Middle	3.6	18.6 18.6	18.6	8.0 8.0	8.0	32.6 32.6	32.6	92.4 91.0	91.7	7.1 7.0	7.1		16.0 16.3	16.2		15.4 15.6	15.5	
					Bottom	6.1	18.6 18.6	18.6	8.0 8.0	8.0	32.6 32.6	32.6	90.7 92.4	91.6	7.0 7.1	7.1	7.1	17.0 16.8	16.9		13.8 14.3	14.1	
20-Dec-13	Sunny	Moderate	09:41	6.3	Surface	1.0	18.0 18.0	18.0	7.9 7.9	7.9	32.6 32.6	32.6	94.1 95.4	94.8	7.3 7.4	7.4	7.4	10.6 10.0	10.3	11.8	13.5 13.5	13.5	13.1
					Middle	3.2	18.0 18.0	18.0	7.9 7.9	7.9	32.6 32.6	32.6	96.2 93.8	95.0	7.5 7.3	7.4		10.1 9.5	9.8		13.9 12.4	13.2	
					Bottom	5.3	17.9 18.0	17.9	7.8 7.9	7.9	32.5 32.6	32.6	97.7 93.5	95.6	7.6 7.3	7.5	7.5	15.6 14.8	15.2		13.1 12.1	12.6	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)16 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	10:46	6.4	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	32.0 32.0	32.0	96.3 97.2	96.8	7.6 7.7	7.7	7.7	6.2 6.2	6.2	6.4	9.3 9.5	9.4	9.5
					Middle	3.2	17.3 17.3	17.3	8.0 8.0	8.0	32.0 32.0	32.0	96.1 97.6	96.9	7.6 7.7	7.7		6.5 6.5	6.5		9.5 9.7	9.6	
					Bottom	5.4	17.3 17.3	17.3	8.0 8.0	8.0	32.0 32.0	32.0	96.3 98.8	97.6	7.6 7.8	7.7	7.7	6.5 6.5	6.5		9.9 9.3	9.6	
25-Dec-13	Sunny	Moderate	12:29	6.4	Surface	1.0	17.8 17.8	17.8	8.0 8.0	8.0	32.1 32.2	32.1	98.8 97.2	98.0	7.8 7.6	7.7	7.7	4.7 4.7	4.7	5.3	4.8 5.6	5.2	4.7
					Middle	3.2	17.8 17.7	17.8	8.0 8.0	8.0	32.2 32.2	32.2	99.3 97.1	98.2	7.8 7.6	7.7		5.6 5.6	5.6		5.1 4.0	4.6	
					Bottom	5.4	17.7 17.7	17.7	8.0 8.0	8.0	32.3 32.2	32.3	101.8 97.8	99.8	8.0 7.7	7.8	7.8	5.5 5.4	5.5		4.4 3.9	4.2	
27-Dec-13	Sunny	Moderate	13:43	6.5	Surface	1.0	17.8 17.8	17.8	8.0 8.0	8.0	33.0 33.0	33.0	96.1 99.0	97.6	7.5 7.7	7.6	7.7	4.8 4.4	4.6	5.1	6.5 5.8	6.2	6.2
					Middle	3.3	17.8 17.8	17.8	8.0 8.0	8.0	33.1 33.1	33.1	96.2 100.2	98.2	7.5 7.8	7.7		5.2 5.5	5.4		6.2 7.0	6.6	
					Bottom	5.5	17.8 17.8	17.8	8.0 8.0	8.0	33.0 33.1	33.1	104.6 96.8	100.7	8.2 7.6	7.9	7.9	5.0 5.3	5.2		6.3 5.5	5.9	
30-Dec-13	Sunny	Moderate	16:04	6.5	Surface	1.0	17.6 17.6	17.6	8.1 8.1	8.1	33.5 33.5	33.5	99.8 99.0	99.4	7.8 7.7	7.8	7.8	9.2 9.0	9.1	12.1	9.4 9.2	9.3	9.4
					Middle	3.3	17.4 17.4	17.4	8.1 8.1	8.1	33.5 33.5	33.5	98.5 99.4	99.0	7.7 7.8	7.8		13.0 12.9	13.0		9.5 10.0	9.8	
					Bottom	5.5	17.4 17.4	17.4	8.0 8.1	8.1	33.5 33.5	33.5	99.7 98.6	99.2	7.8 7.7	7.8	7.8	14.7 13.8	14.3		9.6 8.4	9.0	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	11:08	9.9	Surface	1.0	19.8 19.8	19.8	8.0 8.0	8.0	32.3 32.3	32.3	97.2 97.6	97.4	7.3 7.4	7.3	7.3	6.2 6.1	6.2	6.1	7.0 7.6	7.3	8.5
					Middle	5.0	19.8 19.8	19.8	8.0 8.0	8.0	32.3 32.3	32.3	97.5 97.0	97.3	7.4 7.3	7.3		5.9 6.2	6.1		7.9 7.7	7.8	
					Bottom	8.9	19.8 19.8	19.8	8.0 8.0	8.0	32.3 32.3	32.3	97.8 97.1	97.5	7.4 7.3	7.3	7.3	5.8 6.2	6.0		9.9 11.1	10.5	
4-Dec-13	Sunny	Moderate	12:50	8.8	Surface	1.0	20.3 20.3	20.3	8.0 8.0	8.0	32.4 32.4	32.4	97.3 97.4	97.4	7.3 7.3	7.3	7.3	11.1 11.6	11.4	11.6	13.6 13.7	13.7	15.1
					Middle	4.4	20.3 20.3	20.3	8.0 8.0	8.0	32.4 32.4	32.4	97.0 96.9	97.0	7.3 7.2	7.2		11.3 12.2	11.8		14.3 14.6	14.5	
					Bottom	7.8	20.3 20.3	20.3	8.0 8.0	8.0	32.4 32.4	32.4	96.9 96.8	96.9	7.2 7.2	7.2	7.2	12.1 11.0	11.6		17.6 16.8	17.2	
6-Dec-13	Sunny	Moderate	14:40	8.4	Surface	1.0	20.0 20.0	20.0	7.9 8.0	8.0	32.1 32.1	32.1	95.6 95.8	95.7	7.2 7.2	7.2	7.2	12.3 13.0	12.7	12.7	16.5 16.3	16.4	16.8
					Middle	4.2	20.0 20.0	20.0	7.9 7.9	7.9	32.2 32.1	32.2	95.9 96.2	96.1	7.2 7.2	7.2		12.9 12.6	12.8		15.9 17.0	16.5	
					Bottom	7.4	20.0 20.0	20.0	7.9 7.9	7.9	32.2 32.2	32.2	95.7 96.3	96.0	7.2 7.2	7.2	7.2	12.8 12.5	12.7		17.3 17.4	17.4	
9-Dec-13	Sunny	Moderate	17:34	8.6	Surface	1.0	20.7 20.7	20.7	7.9 7.9	7.9	32.6 32.6	32.6	96.4 96.4	96.4	7.1 7.2	7.1	7.1	8.8 8.7	8.8	8.9	10.7 10.8	10.8	11.3
					Middle	4.3	20.6 20.6	20.6	7.9 7.9	7.9	32.6 32.7	32.7	96.3 96.0	96.2	7.1 7.1	7.1		9.1 8.9	9.0		10.5 10.2	10.4	
					Bottom	7.6	20.6 20.6	20.6	7.9 7.9	7.9	32.6 32.7	32.7	96.1 96.0	96.1	7.1 7.1	7.1	7.1	9.0 8.7	8.9		12.3 12.8	12.6	
11-Dec-13	Fine	Moderate	08:35	8.8	Surface	1.0	20.4 20.3	20.3	8.0 7.9	8.0	31.5 31.5	31.5	95.1 95.6	95.4	7.1 7.2	7.2	7.2	6.3 6.2	6.3	6.4	8.8 7.2	8.0	8.9
					Middle	4.4	20.5 20.4	20.4	8.0 8.0	8.0	31.8 31.7	31.8	95.1 96.0	95.6	7.1 7.2	7.1		6.2 6.4	6.3		8.4 8.6	8.5	
					Bottom	7.8	20.6 20.5	20.6	8.0 8.0	8.0	32.3 32.1	32.2	97.1 95.4	96.3	7.2 7.1	7.2	7.2	6.6 6.3	6.5		10.0 10.6	10.3	
13-Dec-13	Cloudy	Moderate	10:58	8.2	Surface	1.0	19.8 19.8	19.8	8.0 8.0	8.0	31.9 31.9	31.9	96.8 97.1	97.0	7.3 7.4	7.3	7.3	4.5 4.5	4.5	4.9	5.0 6.3	5.7	5.6
					Middle	4.1	19.8 19.8	19.8	8.0 8.0	8.0	32.1 32.1	32.1	96.8 97.5	97.2	7.3 7.4	7.3		4.9 5.2	5.1		5.5 6.4	6.0	
					Bottom	7.2	19.9 19.9	19.9	8.0 8.0	8.0	32.2 32.2	32.2	96.9 98.1	97.5	7.3 7.4	7.4	7.4	5.0 5.1	5.1		4.8 5.4	5.1	
16-Dec-13	Rainy	Moderate	11:08	9.0	Surface	1.0	19.4 19.4	19.4	8.0 8.0	8.0	32.1 32.0	32.1	93.9 94.9	94.4	7.1 7.2	7.2	7.2	7.2 7.4	7.3	7.5	5.2 6.8	6.0	7.5
					Middle	4.5	19.4 19.5	19.4	8.0 8.0	8.0	32.3 32.4	32.4	94.4 93.9	94.2	7.2 7.1	7.2		7.7 7.4	7.6		8.1 8.8	8.5	
					Bottom	8.0	19.5 19.5	19.5	8.0 8.0	8.0	32.4 32.4	32.4	94.4 93.7	94.1	7.2 7.1	7.1	7.1	7.6 7.5	7.6		7.6 8.5	8.1	
18-Dec-13	Sunny	Moderate	12:13	9.1	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	31.3 31.3	31.3	93.6 93.7	93.7	7.4 7.4	7.4	7.4	10.3 10.7	10.5	10.9	13.9 13.2	13.6	16.1
					Middle	4.6	17.9 17.9	17.9	8.0 8.0	8.0	31.3 31.3	31.3	93.7 93.4	93.6	7.4 7.3	7.4		10.9 10.7	10.8		15.3 16.2	15.8	
					Bottom	8.1	17.9 17.9	17.9	8.0 8.0	8.0	31.3 31.3	31.3	93.6 93.5	93.6	7.4 7.4	7.4	7.4	11.5 11.2	11.4		18.8 19.2	19.0	
20-Dec-13	Sunny	Moderate	13:16	8.8	Surface	1.0	17.3 17.3	17.3	8.0 7.9	8.0	31.9 31.9	31.9	95.3 95.4	95.4	7.6 7.6	7.6	7.6	11.2 11.7	11.5	12.1	14.2 15.4	14.8	15.0
					Middle	4.4	17.2 17.3	17.2	7.9 8.0	8.0	31.9 31.9	31.9	95.1 95.0	95.1	7.6 7.5	7.5		12.1 11.3	11.7		15.1 14.9	15.0	
					Bottom	7.8	17.3 17.2	17.2	7.9 7.9	7.9	31.9 31.9	31.9	95.1 95.4	95.3	7.5 7.6	7.6	7.6	12.8 13.2	13.0		15.6 15.0	15.3	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	15:23	8.5	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	31.9 31.9	31.9	98.9 98.5	98.7	7.8 7.8	7.8	7.8	12.5 12.4	12.5	12.5	13.3 13.8	13.6	15.4
					Middle	4.3	17.3 17.2	17.3	8.0 8.0	8.0	32.0 31.9	32.0	98.8 98.1	98.5	7.8 7.8	7.8		12.6 12.2	12.4		15.6 15.3	15.5	
					Bottom	7.5	17.2 17.3	17.2	8.0 8.0	8.0	31.9 31.9	31.9	98.2 98.9	98.6	7.8 7.8	7.8	7.8	12.5 12.6	12.6		16.8 17.5	17.2	
25-Dec-13	Sunny	Moderate	17:39	8.4	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	32.1 32.1	32.1	98.4 98.4	98.4	7.8 7.8	7.8	7.8	9.0 9.0	9.0	9.4	9.3 8.7	9.0	9.9
					Middle	4.2	16.9 16.9	16.9	8.0 8.0	8.0	32.1 32.1	32.1	98.3 97.9	98.1	7.8 7.8	7.8		9.4 9.6	9.5		10.1 9.9	10.0	
					Bottom	7.4	16.9 16.9	16.9	8.0 8.0	8.0	32.1 32.1	32.1	98.0 98.4	98.2	7.8 7.9	7.8	7.8	9.7 9.5	9.6		11.2 9.9	10.6	
27-Dec-13	Sunny	Moderate	08:11	8.6	Surface	1.0	16.6 16.6	16.6	8.0 8.0	8.0	32.3 32.3	32.3	100.3 98.6	99.5	8.1 7.9	8.0	8.0	4.5 4.5	4.5	4.7	6.4 6.7	6.6	7.4
					Middle	4.3	16.6 16.6	16.6	8.0 8.0	8.0	32.3 32.3	32.3	101.8 98.6	100.2	8.2 7.9	8.0		4.7 4.7	4.7		7.7 7.1	7.4	
					Bottom	7.6	16.6 16.6	16.6	8.0 8.0	8.0	32.3 32.3	32.3	98.8 103.5	101.2	7.9 8.3	8.1	8.1	4.7 4.8	4.8		7.5 8.8	8.2	
30-Dec-13	Sunny	Moderate	12:03	8.6	Surface	1.0	15.9 15.9	15.9	8.1 8.1	8.1	33.1 33.1	33.1	102.5 101.3	101.9	8.3 8.2	8.2	8.3	5.5 5.2	5.4	7.0	6.1 6.5	6.3	7.7
					Middle	4.3	15.9 15.9	15.9	8.1 8.1	8.1	33.1 33.1	33.1	101.2 103.2	102.2	8.2 8.4	8.3		6.7 6.6	6.7		8.7 8.1	8.4	
					Bottom	7.6	15.8 15.9	15.9	8.1 8.1	8.1	33.1 33.1	33.1	104.2 101.7	103.0	8.4 8.2	8.3	8.3	9.1 8.8	9.0		8.7 8.2	8.5	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	07:09	9.7	Surface	1.0	19.7 19.8	19.8	7.9 8.0	8.0	32.3 32.3	32.3	98.4 96.7	97.6	7.4 7.3	7.4	7.4	6.0 5.7	5.9	5.8	7.2 7.0	7.1	8.1
					Middle	4.9	19.8 19.8	19.8	7.9 8.0	8.0	32.3 32.3	32.3	99.8 96.9	98.4	7.5 7.3	7.4		5.9 5.6	5.8		8.8 8.5	8.7	
					Bottom	8.7	19.8 19.8	19.8	7.9 8.0	8.0	32.3 32.3	32.3	102.8 97.3	100.1	7.8 7.3	7.5	7.5	5.4 5.9	5.7		8.4 8.8	8.6	
4-Dec-13	Sunny	Moderate	09:27	8.8	Surface	1.0	20.2 20.2	20.2	8.0 8.0	8.0	32.7 32.7	32.7	98.2 97.7	98.0	7.3 7.3	7.3	7.3	10.3 10.6	10.5	10.3	14.9 15.2	15.1	15.0
					Middle	4.4	20.2 20.2	20.2	8.0 8.0	8.0	32.7 32.7	32.7	97.5 98.3	97.9	7.3 7.3	7.3		10.5 9.9	10.2		14.8 14.2	14.5	
					Bottom	7.8	20.2 20.2	20.2	8.0 7.9	8.0	32.7 32.7	32.7	97.7 99.0	98.4	7.3 7.4	7.4	7.4	10.2 10.0	10.1		15.4 15.5	15.5	
6-Dec-13	Sunny	Moderate	11:10	8.4	Surface	1.0	20.0 20.0	20.0	7.9 7.9	7.9	32.3 32.3	32.3	95.0 95.4	95.2	7.1 7.2	7.2	7.2	12.6 12.8	12.7	12.6	12.5 12.0	12.3	14.1
					Middle	4.2	20.0 20.0	20.0	7.9 7.9	7.9	32.3 32.3	32.3	95.3 94.7	95.0	7.2 7.1	7.1		12.7 12.5	12.6		14.3 14.4	14.4	
					Bottom	7.4	20.0 20.0	20.0	7.9 7.9	7.9	32.4 32.4	32.4	94.8 95.8	95.3	7.1 7.2	7.2	7.2	12.6 12.4	12.5		16.2 15.2	15.7	
9-Dec-13	Sunny	Moderate	13:32	8.9	Surface	1.0	20.5 20.5	20.5	8.0 7.9	8.0	31.9 31.9	31.9	95.7 95.9	95.8	7.1 7.2	7.1	7.1	9.5 9.5	9.5	9.5	7.7 8.4	8.1	8.9
					Middle	4.5	20.4 20.5	20.4	7.9 8.0	8.0	31.9 31.9	31.9	95.6 95.2	95.4	7.2 7.1	7.1		9.4 9.6	9.5		9.2 8.6	8.9	
					Bottom	7.9	20.4 20.4	20.4	7.9 8.0	7.9	31.9 31.9	31.9	95.9 95.3	95.6	7.2 7.1	7.1	7.1	9.4 9.7	9.6		9.8 9.4	9.6	
11-Dec-13	Sunny	Moderate	13:40	8.4	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	31.3 31.2	31.3	96.0 96.1	96.1	7.2 7.2	7.2	7.2	8.2 8.3	8.3	8.5	18.4 18.9	18.7	18.7
					Middle	4.2	20.3 20.3	20.3	7.9 7.9	7.9	31.4 31.4	31.4	95.8 95.8	95.8	7.2 7.2	7.2		8.4 8.5	8.5		18.1 17.1	17.6	
					Bottom	7.4	20.3 20.3	20.3	7.9 7.9	7.9	31.4 31.4	31.4	96.0 95.8	95.9	7.2 7.2	7.2	7.2	8.8 8.7	8.8		20.2 19.2	19.7	
13-Dec-13	Fine	Moderate	14:53	8.6	Surface	1.0	19.8 19.8	19.8	8.0 8.0	8.0	31.9 31.9	31.9	97.1 97.0	97.1	7.3 7.3	7.3	7.3	5.6 5.6	5.6	5.7	9.6 9.8	9.7	10.1
					Middle	4.3	19.9 19.9	19.9	8.0 8.0	8.0	32.0 32.1	32.1	97.0 96.9	97.0	7.3 7.3	7.3		5.7 5.8	5.8		10.4 10.1	10.3	
					Bottom	7.6	19.9 19.9	19.9	8.0 8.0	8.0	32.2 32.1	32.1	97.2 96.9	97.1	7.3 7.3	7.3	7.3	5.7 5.7	5.7		10.5 10.2	10.4	
16-Dec-13	Rainy	Moderate	07:45	9.4	Surface	1.0	19.4 19.4	19.4	8.0 8.0	8.0	32.3 32.3	32.3	96.5 102.5	99.5	7.3 7.8	7.6	7.5	7.5 7.3	7.4	7.6	6.2 6.2	6.2	6.2
					Middle	4.7	19.4 19.4	19.4	8.0 8.0	8.0	32.4 32.4	32.4	95.8 100.0	97.9	7.3 7.6	7.4		7.7 7.9	7.8		5.0 6.6	5.8	
					Bottom	8.4	19.4 19.4	19.4	8.0 8.0	8.0	32.4 32.4	32.4	95.5 98.2	96.9	7.3 7.5	7.4	7.4	7.5 7.7	7.6		7.4 5.7	6.6	
18-Dec-13	Sunny	Moderate	09:06	9.3	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	31.6 31.6	31.6	93.2 92.8	93.0	7.3 7.3	7.3	7.3	12.0 12.3	12.2	12.5	16.0 16.0	16.0	17.3
					Middle	4.7	17.9 17.9	17.9	8.0 8.0	8.0	31.6 31.6	31.6	92.8 93.2	93.0	7.3 7.3	7.3		12.7 12.4	12.6		18.2 17.6	17.9	
					Bottom	8.3	17.9 17.9	17.9	8.0 8.0	8.0	31.6 31.6	31.6	93.5 92.9	93.2	7.4 7.3	7.3	7.3	12.6 13.0	12.8		17.8 18.1	18.0	
20-Dec-13	Sunny	Moderate	10:28	8.7	Surface	1.0	17.2 17.2	17.2	7.9 7.9	7.9	32.0 32.0	32.0	95.6 94.9	95.3	7.6 7.5	7.6	7.6	11.8 12.0	11.9	12.2	14.2 14.0	14.1	14.2
					Middle	4.4	17.2 17.2	17.2	7.9 7.9	7.9	32.0 32.0	32.0	94.7 95.7	95.2	7.5 7.6	7.6		12.1 12.4	12.3		13.7 13.3	13.5	
					Bottom	7.7	17.2 17.2	17.2	7.9 7.9	7.9	32.0 32.0	32.0	96.3 95.0	95.7	7.7 7.5	7.6	7.6	12.4 12.1	12.3		14.3 15.4	14.9	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	11:30	8.5	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	32.2 32.2	32.2	97.7 96.5	97.1	7.8 7.7	7.7	7.7	10.9 10.3	10.6	10.6	13.1 13.5	13.3	14.4
					Middle	4.3	17.0 17.0	17.0	8.0 8.0	8.0	32.2 32.2	32.2	98.1 96.3	97.2	7.8 7.7	7.7		10.6 10.5	10.6		13.9 14.7	14.3	
					Bottom	7.5	16.9 16.9	16.9	8.0 8.0	8.0	32.2 32.2	32.2	99.4 96.8	98.1	7.9 7.7	7.8	7.8	10.9 10.4	10.7		15.9 15.2	15.6	
25-Dec-13	Sunny	Moderate	13:12	8.7	Surface	1.0	16.9 17.0	17.0	8.0 8.0	8.0	32.0 32.0	32.0	99.7 99.5	99.6	8.0 7.9	7.9	7.9	7.5 7.5	7.5	7.6	8.4 8.0	8.2	8.5
					Middle	4.4	16.9 16.9	16.9	8.0 8.0	8.0	32.0 32.0	32.0	99.0 99.5	99.3	7.9 7.9	7.9		7.7 7.4	7.6		7.8 8.2	8.0	
					Bottom	7.7	16.9 16.9	16.9	8.0 8.0	8.0	32.1 32.0	32.1	100.1 99.3	99.7	8.0 7.9	8.0	8.0	7.5 7.6	7.6		8.7 9.9	9.3	
27-Dec-13	Sunny	Moderate	12:51	8.8	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	31.9 31.9	31.9	100.8 101.6	101.2	8.2 8.2	8.2	8.2	9.9 10.0	10.0	10.4	5.6 6.0	5.8	7.7
					Middle	4.4	16.3 16.3	16.3	8.0 8.0	8.0	31.9 31.9	31.9	101.4 100.6	101.0	8.2 8.1	8.2		11.4 11.1	11.3		7.6 8.7	8.2	
					Bottom	7.8	16.3 16.3	16.3	8.0 8.0	8.0	31.9 31.9	31.9	101.0 101.4	101.2	8.2 8.2	8.2	8.2	9.6 10.4	10.0		8.9 9.0	9.0	
30-Dec-13	Sunny	Moderate	15:10	8.8	Surface	1.0	16.1 16.2	16.2	8.0 8.1	8.1	32.8 32.8	32.8	103.6 103.5	103.6	8.4 8.3	8.3	8.3	4.1 4.4	4.3	4.4	7.2 5.2	6.2	6.7
					Middle	4.4	16.1 16.1	16.1	8.0 8.0	8.0	32.9 32.9	32.9	102.9 103.3	103.1	8.3 8.3	8.3		4.3 4.3	4.3		7.2 7.6	7.4	
					Bottom	7.8	16.1 16.1	16.1	8.0 8.0	8.0	32.9 32.9	32.9	103.5 103.1	103.3	8.4 8.3	8.3	8.3	4.5 4.5	4.5		5.9 6.9	6.4	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	11:21	3.3	Surface	1.0	19.9 20.0	19.9	8.0 8.0	8.0	32.2 32.2	32.2	105.3 102.1	103.7	7.9 7.7	7.8	7.8	6.5 6.8	6.7	6.5	8.6 8.6	8.6	9.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	19.7 19.8	19.8	8.0 8.0	8.0	32.2 32.2	32.2	105.5 103.0	104.3	8.0 7.8	7.9	7.9	6.1 6.5	6.3		9.0 9.5	9.3	
4-Dec-13	Sunny	Moderate	13:03	3.2	Surface	1.0	20.6 20.6	20.6	8.0 8.0	8.0	32.4 32.4	32.4	99.9 99.6	99.8	7.4 7.4	7.4	7.4	13.0 12.7	12.9	13.3	13.1 13.3	13.2	13.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.5 20.3	20.4	7.9 7.9	7.9	32.3 32.4	32.4	99.4 100.1	99.8	7.4 7.5	7.4	7.4	14.0 13.4	13.7		12.4 13.3	12.9	
6-Dec-13	Sunny	Moderate	14:52	3.2	Surface	1.0	20.5 20.4	20.4	8.0 8.0	8.0	32.0 32.1	32.1	98.6 97.9	98.3	7.4 7.3	7.3	7.3	13.9 14.6	14.3	14.1	10.1 9.6	9.9	10.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.3 20.2	20.2	8.0 8.0	8.0	32.1 32.1	32.1	98.1 98.1	98.1	7.3 7.4	7.4	7.4	14.1 13.6	13.9		10.2 10.1	10.2	
9-Dec-13	Sunny	Moderate	17:50	3.4	Surface	1.0	20.6 20.6	20.6	7.9 7.9	7.9	32.3 32.3	32.3	95.8 95.5	95.7	7.1 7.1	7.1	7.1	13.3 14.6	14.0	14.7	10.3 10.5	10.4	10.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	20.5 20.4	20.5	7.9 7.9	7.9	32.3 32.3	32.3	95.4 95.5	95.5	7.1 7.1	7.1	7.1	15.6 15.2	15.4		9.3 10.6	10.0	
11-Dec-13	Fine	Moderate	08:21	3.3	Surface	1.0	20.1 20.1	20.1	7.9 7.9	7.9	31.1 31.1	31.1	96.0 96.5	96.3	7.2 7.3	7.3	7.3	9.4 9.4	9.4	9.4	10.0 10.0	10.0	11.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	20.1 20.1	20.1	7.9 7.9	7.9	31.2 31.2	31.2	97.1 96.2	96.7	7.3 7.3	7.3	7.3	9.4 9.2	9.3		13.2 13.2	13.2	
13-Dec-13	Cloudy	Moderate	10:44	3.2	Surface	1.0	19.7 19.7	19.7	8.0 8.0	8.0	31.6 31.6	31.6	98.2 97.9	98.1	7.5 7.4	7.4	7.4	3.7 3.7	3.7	3.8	4.6 6.0	5.3	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	19.7 19.7	19.7	8.0 8.0	8.0	31.7 31.7	31.7	97.9 98.4	98.2	7.4 7.5	7.5	7.5	3.8 3.8	3.8		5.3 5.1	5.2	
16-Dec-13	Rainy	Moderate	11:20	3.3	Surface	1.0	19.2 19.2	19.2	8.0 8.0	8.0	32.2 32.2	32.2	105.1 104.2	104.7	8.0 8.0	8.0	8.0	11.1 11.3	11.2	11.2	15.7 14.5	15.1	16.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	18.8 19.2	19.0	8.0 8.0	8.0	32.5 32.2	32.4	103.1 102.9	103.0	7.9 7.9	7.9	7.9	11.1 11.2	11.2		18.2 17.3	17.8	
18-Dec-13	Sunny	Moderate	12:27	3.4	Surface	1.0	18.1 18.1	18.1	8.0 8.0	8.0	31.6 31.6	31.6	95.3 95.6	95.5	7.5 7.5	7.5	7.5	10.2 10.4	10.3	10.5	16.1 15.4	15.8	16.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	18.1 18.1	18.1	8.0 8.0	8.0	31.6 31.6	31.6	95.9 95.6	95.8	7.5 7.5	7.5	7.5	10.7 10.5	10.6		17.4 18.0	17.7	
20-Dec-13	Sunny	Moderate	13:33	3.4	Surface	1.0	17.9 18.0	18.0	7.9 7.9	7.9	32.1 32.1	32.1	99.7 98.5	99.1	7.8 7.7	7.7	7.7	10.8 11.7	11.3	11.6	13.4 15.4	14.4	14.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	17.9 17.4	17.7	7.9 7.9	7.9	31.9 32.0	31.9	98.3 100.0	99.2	7.7 7.9	7.8	7.8	11.8 12.0	11.9		13.2 14.8	14.0	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	15:38	3.3	Surface	1.0	17.4 17.4	17.4	8.0 8.0	8.0	31.9 31.9	31.9	97.8 97.9	97.9	7.7 7.8	7.7	7.7	11.0 11.6	11.3	11.4	17.6 16.2	16.9	16.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	17.4 17.2	17.3	8.0 8.0	8.0	31.9 31.9	31.9	97.7 97.8	97.8	7.7 7.8	7.8	7.8	11.0 11.8	11.4		17.0 15.9	16.5	
25-Dec-13	Sunny	Moderate	17:53	3.3	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	32.1 32.1	32.1	101.0 101.9	101.5	8.0 8.1	8.0	8.0	7.2 6.9	7.1	7.2	6.4 6.3	6.4	6.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	17.2 17.3	17.2	8.0 8.0	8.0	32.1 32.0	32.1	101.0 102.7	101.9	8.0 8.1	8.1	8.1	7.3 7.0	7.2		6.8 7.4	7.1	
27-Dec-13	Sunny	Moderate	07:55	3.4	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	32.3 32.3	32.3	104.7 102.3	103.5	8.5 8.3	8.4	8.4	7.4 7.8	7.6	7.7	11.5 10.0	10.8	11.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	16.3 16.2	16.2	8.0 8.0	8.0	32.3 32.3	32.3	103.4 107.5	105.5	8.3 8.7	8.5	8.5	7.6 8.0	7.8		11.7 11.3	11.5	
30-Dec-13	Sunny	Moderate	11:48	3.3	Surface	1.0	16.3 16.4	16.3	8.1 8.1	8.1	33.1 33.1	33.1	104.6 104.0	104.3	8.4 8.3	8.4	8.4	14.7 15.2	15.0	15.6	6.0 5.4	5.7	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	16.2 16.2	16.2	8.1 8.1	8.1	33.1 33.1	33.1	104.1 105.2	104.7	8.4 8.5	8.4	8.4	16.7 15.6	16.2		6.0 6.6	6.3	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:56	3.5	Surface	1.0	19.8 19.8	19.8	8.0 8.0	8.0	32.2 32.2	32.2	97.8 101.8	99.8	7.4 7.7	7.5	7.5	9.5 9.0	9.3	10.2	9.7 10.0	9.9	10.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	20.0 19.9	19.9	8.0 8.0	8.0	32.5 32.5	32.5	99.1 103.9	101.5	7.4 7.8	7.6	7.6	11.0 10.9	11.0		9.7 10.3	10.0	
4-Dec-13	Sunny	Moderate	09:12	3.3	Surface	1.0	20.3 20.3	20.3	8.0 8.0	8.0	32.6 32.6	32.6	97.5 98.0	97.8	7.3 7.3	7.3	7.3	22.2 22.7	22.5	22.4	18.5 18.5	18.5	18.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	20.3 20.2	20.2	8.0 7.9	8.0	32.6 32.6	32.6	97.6 98.7	98.2	7.3 7.4	7.3	7.3	22.4 22.1	22.3		17.7 17.6	17.7	
6-Dec-13	Sunny	Moderate	10:55	3.2	Surface	1.0	20.1 20.1	20.1	7.9 7.9	7.9	32.2 32.2	32.2	96.7 97.3	97.0	7.3 7.3	7.3	7.3	15.6 16.1	15.9	16.3	14.2 14.7	14.5	15.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.1 20.0	20.1	7.9 7.9	7.9	32.2 32.2	32.2	96.9 98.0	97.5	7.3 7.4	7.3	7.3	16.4 16.9	16.7		16.7 17.6	17.2	
9-Dec-13	Sunny	Moderate	13:17	3.4	Surface	1.0	20.7 20.7	20.7	8.0 7.9	8.0	31.7 31.8	31.8	97.3 96.7	97.0	7.2 7.2	7.2	7.2	11.2 12.2	11.7	13.0	10.7 9.5	10.1	10.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	20.5 20.7	20.6	7.9 7.9	7.9	31.7 31.7	31.7	96.4 96.8	96.6	7.2 7.2	7.2	7.2	14.9 13.7	14.3		11.1 10.6	10.9	
11-Dec-13	Sunny	Moderate	13:55	3.2	Surface	1.0	20.5 20.5	20.5	7.9 7.9	7.9	31.2 31.2	31.2	96.2 97.4	96.8	7.2 7.3	7.3	7.3	10.1 10.4	10.3	10.3	13.4 12.3	12.9	12.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.4 20.4	20.4	7.9 7.9	7.9	31.2 31.2	31.2	99.0 96.3	97.7	7.4 7.2	7.3	7.3	10.1 10.3	10.2		11.3 12.6	12.0	
13-Dec-13	Fine	Moderate	15:08	3.2	Surface	1.0	19.7 19.7	19.7	8.0 8.0	8.0	31.7 31.7	31.7	99.4 99.5	99.5	7.5 7.5	7.5	7.5	5.5 5.5	5.5	5.4	8.2 6.8	7.5	9.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	19.7 19.7	19.7	8.0 8.0	8.0	31.7 31.7	31.7	100.3 99.4	99.9	7.6 7.5	7.6	7.6	5.2 5.1	5.2		10.8 10.5	10.7	
16-Dec-13	Rainy	Moderate	07:32	3.5	Surface	1.0	19.4 19.4	19.4	8.0 8.0	8.0	32.4 32.4	32.4	103.5 99.1	101.3	7.9 7.5	7.7	7.7	15.4 15.5	15.5	15.7	13.8 13.9	13.9	16.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	19.4 19.3	19.4	8.0 8.0	8.0	32.4 32.4	32.4	97.9 100.2	99.1	7.4 7.6	7.5	7.5	15.7 16.0	15.9		19.8 19.3	19.6	
18-Dec-13	Sunny	Moderate	08:52	3.5	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	31.9 31.9	31.9	93.6 93.8	93.7	7.3 7.4	7.3	7.3	12.3 12.6	12.5	12.6	14.0 15.3	14.7	14.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	17.9 17.9	17.9	8.0 8.0	8.0	31.9 31.9	31.9	93.6 93.9	93.8	7.3 7.4	7.4	7.4	12.4 12.7	12.6		14.8 14.7	14.8	
20-Dec-13	Sunny	Moderate	10:13	3.4	Surface	1.0	17.3 17.3	17.3	7.9 7.9	7.9	32.0 32.1	32.0	95.8 94.4	95.1	7.6 7.5	7.5	7.5	24.7 24.4	24.6	22.8	22.4 23.3	22.9	23.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	17.3 17.3	17.3	7.9 7.9	7.9	32.1 32.1	32.1	94.8 99.1	97.0	7.5 7.9	7.7	7.7	20.6 21.2	20.9		23.2 24.6	23.9	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	11:17	3.3	Surface	1.0	17.2 17.2	17.2	8.0 8.0	8.0	32.2 32.2	32.2	97.9 97.0	97.5	7.8 7.7	7.7	7.7	16.3 16.7	16.5	16.6	17.3 17.8	17.6	17.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	17.1 17.0	17.1	8.0 8.0	8.0	32.1 32.1	32.1	97.1 98.7	97.9	7.7 7.9	7.8	7.8	16.8 16.5	16.7		18.4 17.9	18.2	
25-Dec-13	Sunny	Moderate	12:59	3.2	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	32.0 32.0	32.0	101.0 101.5	101.3	8.0 8.0	8.0	8.0	8.5 8.7	8.6	8.7	8.4 8.7	8.6	8.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	17.3 17.1	17.2	8.0 8.0	8.0	32.0 32.1	32.0	101.1 102.0	101.6	8.0 8.1	8.1	8.1	8.4 8.9	8.7		7.8 9.5	8.7	
27-Dec-13	Sunny	Moderate	13:06	3.4	Surface	1.0	16.4 16.4	16.4	8.0 8.0	8.0	32.0 32.0	32.0	103.9 106.7	105.3	8.4 8.6	8.5	8.5	8.9 9.6	9.3	10.1	10.3 9.9	10.1	10.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	16.4 16.3	16.4	8.0 8.0	8.0	32.0 32.0	32.0	104.8 107.3	106.1	8.5 8.7	8.6	8.6	10.8 11.0	10.9		10.3 11.1	10.7	
30-Dec-13	Sunny	Moderate	15:27	3.2	Surface	1.0	16.7 16.7	16.7	8.1 8.1	8.1	33.0 33.0	33.0	106.3 106.3	106.3	8.5 8.5	8.5	8.5	6.4 6.8	6.6	6.7	8.8 9.0	8.9	8.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	16.7 16.7	16.7	8.1 8.1	8.1	33.0 33.0	33.0	106.1 106.2	106.2	8.5 8.5	8.5	8.5	7.0 6.6	6.8		8.8 8.0	8.4	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS8 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	11:45	3.7	Surface	1.0	20.6 20.6	20.6	8.0 8.0	8.0	32.6 32.7	32.7	102.6 100.1	101.4	7.6 7.4	7.5	7.5	6.4 6.4	6.4	6.5	7.2 6.3	6.8	7.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.5 20.4	20.4	8.0 8.0	8.0	32.6 32.7	32.7	100.6 104.6	102.6	7.5 7.8	7.6	7.6	6.6 6.6	6.6		7.8 7.3	7.6	
4-Dec-13	Sunny	Moderate	13:28	3.8	Surface	1.0	20.9 20.9	20.9	7.9 7.9	7.9	32.2 32.2	32.2	98.4 98.7	98.6	7.3 7.3	7.3	7.3	8.6 8.5	8.6	8.7	7.7 8.1	7.9	8.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	20.5 20.4	20.5	7.9 7.9	7.9	32.3 32.3	32.3	98.0 97.4	97.7	7.3 7.3	7.3	7.3	8.6 8.9	8.8		8.6 8.2	8.4	
6-Dec-13	Sunny	Moderate	15:18	4.2	Surface	1.0	20.5 20.5	20.5	7.9 7.9	7.9	31.8 31.8	31.8	97.8 98.4	98.1	7.3 7.4	7.3	7.3	8.6 8.5	8.6	8.6	8.4 7.9	8.2	8.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	20.5 20.5	20.5	7.9 7.9	7.9	31.8 31.8	31.8	99.3 97.8	98.6	7.4 7.3	7.4	7.4	8.5 8.6	8.6		8.7 9.0	8.9	
9-Dec-13	Sunny	Moderate	18:13	3.7	Surface	1.0	20.6 20.6	20.6	8.0 8.0	8.0	31.7 31.7	31.7	96.9 96.4	96.7	7.2 7.2	7.2	7.2	5.1 4.8	5.0	5.5	5.5 5.7	5.6	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.6 20.6	20.6	7.9 8.0	8.0	31.8 31.8	31.8	95.9 96.6	96.3	7.2 7.2	7.2	7.2	6.2 5.8	6.0		8.6 8.1	8.4	
11-Dec-13	Fine	Moderate	07:57	4.1	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	31.2 31.2	31.2	94.9 93.9	94.4	7.1 7.1	7.1	7.1	8.6 8.6	8.6	8.6	8.2 8.6	8.4	8.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	20.4 20.3	20.3	7.9 7.9	7.9	31.3 31.3	31.3	96.2 94.6	95.4	7.2 7.1	7.2	7.2	8.7 8.4	8.6		8.1 7.0	7.6	
13-Dec-13	Cloudy	Moderate	10:20	4.2	Surface	1.0	19.8 19.8	19.8	7.9 7.9	7.9	31.7 31.7	31.7	92.9 93.1	93.0	7.0 7.1	7.0	7.0	6.7 6.8	6.8	6.8	5.6 6.1	5.9	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	20.0 19.9	20.0	7.9 7.9	7.9	32.1 32.0	32.1	94.3 93.4	93.9	7.1 7.1	7.1	7.1	6.8 6.7	6.8		6.8 7.3	7.1	
16-Dec-13	Rainy	Moderate	11:40	3.6	Surface	1.0	19.6 19.6	19.6	8.0 8.0	8.0	32.5 32.5	32.5	92.7 93.0	92.9	7.0 7.0	7.0	7.0	7.5 7.2	7.4	7.4	10.9 10.5	10.7	10.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	19.7 19.6	19.6	8.0 8.0	8.0	32.6 32.6	32.6	92.8 92.7	92.8	7.0 7.0	7.0	7.0	7.2 7.4	7.3		10.0 10.7	10.4	
18-Dec-13	Sunny	Moderate	12:57	3.5	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	31.4 31.4	31.4	95.7 95.5	95.6	7.5 7.5	7.5	7.5	6.9 6.8	6.9	7.0	9.0 10.4	9.7	10.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	17.9 18.0	18.0	8.0 8.0	8.0	31.4 31.5	31.4	95.7 95.6	95.7	7.5 7.5	7.5	7.5	7.1 7.0	7.1		11.2 12.0	11.6	
20-Dec-13	Sunny	Moderate	13:58	3.5	Surface	1.0	17.9 17.9	17.9	7.9 7.9	7.9	32.3 32.3	32.3	97.4 99.4	98.4	7.6 7.8	7.7	7.7	7.4 7.5	7.5	7.5	11.0 11.2	11.1	11.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	17.9 17.9	17.9	7.9 7.9	7.9	32.3 32.3	32.3	100.8 98.4	99.6	7.9 7.7	7.8	7.8	7.4 7.4	7.4		13.3 11.6	12.5	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS8 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	16:01	3.8	Surface	1.0	17.8 17.7	17.7	8.0 8.0	8.0	31.7 31.7	31.7	98.2 98.7	98.5	7.7 7.8	7.8	7.8	6.9 6.8	6.9	6.9	13.0 11.4	12.2	13.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	17.6 17.6	17.6	8.0 8.0	8.0	31.7 31.8	31.8	98.1 99.3	98.7	7.7 7.8	7.8	7.8	6.7 6.8	6.8		14.9 14.2	14.6	
25-Dec-13	Sunny	Moderate	18:15	3.9	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	32.2 32.1	32.2	99.7 99.7	99.7	7.8 7.8	7.8	7.8	4.1 4.1	4.1	4.2	5.4 5.4	5.4	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	17.8 17.8	17.8	8.0 8.0	8.0	32.2 32.2	32.2	99.7 99.7	99.7	7.8 7.8	7.8	7.8	4.3 4.2	4.3		6.1 5.6	5.9	
27-Dec-13	Sunny	Moderate	07:28	3.8	Surface	1.0	17.3 17.3	17.3	8.0 8.0	8.0	33.0 33.0	33.0	97.1 100.8	99.0	7.7 7.9	7.8	7.8	6.6 6.6	6.6	6.6	8.4 8.4	8.4	8.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	17.2 17.3	17.3	8.0 8.0	8.0	33.0 33.0	33.0	104.5 98.2	101.4	8.2 7.7	8.0	8.0	6.3 6.8	6.6		8.1 8.6	8.4	
30-Dec-13	Sunny	Moderate	11:23	3.7	Surface	1.0	16.6 16.5	16.6	8.1 8.1	8.1	33.1 33.1	33.1	104.1 106.0	105.1	8.3 8.5	8.4	8.4	9.2 9.1	9.2	10.0	6.4 7.0	6.7	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	16.6 16.6	16.6	8.1 8.1	8.1	33.2 33.2	33.2	106.5 105.0	105.8	8.5 8.4	8.4	8.4	11.0 10.3	10.7		6.4 6.4	6.4	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS8 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:33	3.7	Surface	1.0	20.4 20.4	20.4	8.0 8.0	8.0	32.6 32.6	32.6	97.3 100.9	99.1	7.3 7.5	7.4	7.4	11.3 11.0	11.2	10.6	16.5 15.5	16.0	15.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.4 20.3	20.4	8.0 8.0	8.0	32.6 32.6	32.6	98.1 104.7	101.4	7.3 7.8	7.6	7.6	10.0 9.7	9.9		15.2 15.0	15.1	
4-Dec-13	Sunny	Moderate	08:47	4.2	Surface	1.0	20.4 20.4	20.4	8.0 8.0	8.0	32.5 32.5	32.5	98.7 97.7	98.2	7.4 7.3	7.3	7.3	15.6 15.5	15.6	15.8	17.0 17.6	17.3	17.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	20.4 20.4	20.4	7.9 8.0	8.0	32.6 32.5	32.6	99.5 98.0	98.8	7.4 7.3	7.4	7.4	16.1 15.8	16.0		17.0 18.5	17.8	
6-Dec-13	Sunny	Moderate	10:31	4.2	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	32.1 32.1	32.1	96.0 97.2	96.6	7.2 7.3	7.2	7.2	9.3 9.6	9.5	10.2	9.0 9.0	9.0	9.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	20.2 20.2	20.2	7.9 7.9	7.9	32.1 32.1	32.1	98.5 96.3	97.4	7.4 7.2	7.3	7.3	10.7 11.1	10.9		10.1 11.1	10.6	
9-Dec-13	Sunny	Moderate	12:52	3.6	Surface	1.0	20.5 20.5	20.5	7.9 7.9	7.9	31.4 31.4	31.4	94.9 95.3	95.1	7.1 7.1	7.1	7.1	9.5 9.2	9.4	10.4	7.6 8.4	8.0	9.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	20.4 20.3	20.3	7.9 7.8	7.9	31.5 31.6	31.6	94.7 95.8	95.3	7.1 7.2	7.1	7.1	11.4 11.1	11.3		9.6 10.1	9.9	
11-Dec-13	Sunny	Moderate	14:18	3.8	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	31.3 31.3	31.3	93.6 94.5	94.1	7.0 7.1	7.1	7.1	5.7 5.9	5.8	5.9	6.0 7.3	6.7	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	20.3 20.3	20.3	7.9 7.9	7.9	31.3 31.3	31.3	94.0 95.9	95.0	7.1 7.2	7.1	7.1	6.0 5.9	6.0		9.4 9.5	9.5	
13-Dec-13	Fine	Moderate	15:34	3.9	Surface	1.0	19.9 19.9	19.9	7.9 7.9	7.9	31.8 31.8	31.8	93.5 92.5	93.0	7.1 7.0	7.0	7.0	8.5 8.6	8.6	8.8	8.3 9.2	8.8	8.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	19.9 19.9	19.9	7.9 7.9	7.9	32.0 32.0	32.0	92.3 93.6	93.0	7.0 7.1	7.0	7.0	8.8 8.9	8.9		7.9 9.2	8.6	
16-Dec-13	Rainy	Moderate	07:09	3.7	Surface	1.0	19.6 19.6	19.6	8.0 8.0	8.0	32.4 32.4	32.4	101.0 102.6	101.8	7.6 7.8	7.7	7.7	7.0 7.0	7.0	7.1	7.6 7.6	7.6	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	19.6 19.3	19.4	8.0 8.0	8.0	32.4 32.7	32.5	99.2 102.1	100.7	7.5 7.8	7.6	7.6	7.2 7.0	7.1		8.7 8.5	8.6	
18-Dec-13	Sunny	Moderate	08:15	3.7	Surface	1.0	18.1 18.1	18.1	8.0 8.0	8.0	31.9 31.9	31.9	93.4 93.8	93.6	7.3 7.3	7.3	7.3	8.1 8.2	8.2	8.3	9.8 9.6	9.7	10.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	18.1 18.1	18.1	8.0 8.0	8.0	31.8 31.9	31.9	94.2 93.5	93.9	7.4 7.3	7.3	7.3	8.3 8.2	8.3		10.5 10.3	10.4	
20-Dec-13	Sunny	Moderate	09:49	3.9	Surface	1.0	17.9 17.9	17.9	7.9 7.9	7.9	32.4 32.4	32.4	96.3 94.5	95.4	7.5 7.4	7.5	7.5	24.1 26.5	25.3	22.3	41.1 42.2	41.7	**44.1**
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	17.9 17.9	17.9	7.9 7.9	7.9	32.4 32.4	32.4	100.1 95.0	97.6	7.8 7.4	7.6	7.6	18.8 19.7	19.3		46.0 46.7	46.4	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS8 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	10:55	4.1	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	32.2 32.2	32.2	96.2 97.1	96.7	7.6 7.7	7.6	7.6	18.4 18.4	18.4	18.5	11.6 11.3	11.5	15.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	17.4 17.4	17.4	8.0 8.0	8.0	32.2 32.2	32.2	96.4 98.1	97.3	7.6 7.8	7.7	7.7	18.6 18.6	18.6		19.3 18.5	18.9	
25-Dec-13	Sunny	Moderate	12:36	4.0	Surface	1.0	17.7 17.7	17.7	8.0 8.0	8.0	32.2 32.2	32.2	97.2 98.8	98.0	7.6 7.8	7.7	7.7	10.4 10.4	10.4	10.6	11.8 12.6	12.2	13.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	17.7 17.7	17.7	8.0 8.0	8.0	32.2 32.2	32.2	98.0 101.1	99.6	7.7 7.9	7.8	7.8	10.7 10.6	10.7		15.1 16.0	15.6	
27-Dec-13	Sunny	Moderate	13:34	3.9	Surface	1.0	17.4 17.3	17.4	8.0 8.0	8.0	32.7 32.8	32.8	97.1 97.1	97.1	7.7 7.7	7.7	7.7	11.9 12.1	12.0	12.5	13.6 13.5	13.6	14.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	17.4 17.3	17.4	8.0 8.0	8.0	32.8 32.8	32.8	97.1 97.1	97.1	7.7 7.7	7.7	7.7	12.8 13.2	13.0		15.0 15.4	15.2	
30-Dec-13	Sunny	Moderate	15:55	3.6	Surface	1.0	16.8 16.8	16.8	8.1 8.1	8.1	33.0 33.0	33.0	104.8 104.7	104.8	8.3 8.3	8.3	8.3	6.4 6.9	6.7	7.4	8.2 7.4	7.8	8.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	16.8 16.8	16.8	8.1 8.1	8.1	33.0 33.0	33.0	104.7 104.8	104.8	8.3 8.3	8.3	8.3	8.1 8.0	8.1		8.6 7.8	8.2	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS17 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	12:00	11.6	Surface	1.0	21.0 21.0	21.0	8.0 8.0	8.0	32.9 32.9	32.9	96.6 95.2	95.9	7.1 7.0	7.1	7.1	6.5 6.4	6.5	6.5	11.9 12.0	12.0	11.6
					Middle	5.8	21.0 21.0	21.0	8.0 8.0	8.0	32.9 32.9	32.9	98.3 95.1	96.7	7.2 7.0	7.1		6.3 6.2	6.3		10.5 10.9	10.7	
					Bottom	10.6	21.0 20.9	20.9	8.0 8.0	8.0	32.9 32.9	32.9	95.5 101.1	98.3	7.0 7.4	7.2	7.2	6.5 6.6	6.6		11.4 12.6	12.0	
4-Dec-13	Sunny	Moderate	13:47	10.9	Surface	1.0	20.6 20.6	20.6	8.0 8.0	8.0	32.1 32.1	32.1	96.1 95.9	96.0	7.2 7.1	7.2	7.2	9.1 8.8	9.0	9.5	16.3 14.3	15.3	15.5
					Middle	5.5	20.5 20.6	20.6	8.0 8.0	8.0	32.2 32.2	32.2	96.0 95.6	95.8	7.2 7.1	7.1		9.7 9.7	9.7		15.8 15.6	15.7	
					Bottom	9.9	20.6 20.6	20.6	8.0 8.0	8.0	32.3 32.3	32.3	95.3 96.6	96.0	7.1 7.2	7.1	7.1	9.4 10.0	9.7		15.4 15.7	15.6	
6-Dec-13	Sunny	Moderate	15:31	10.3	Surface	1.0	20.3 20.3	20.3	7.9 8.0	8.0	31.9 31.9	31.9	95.9 95.1	95.5	7.2 7.1	7.2	7.2	12.7 12.6	12.7	13.7	14.3 15.0	14.7	14.8
					Middle	5.2	20.3 20.3	20.3	7.9 7.9	7.9	32.0 32.0	32.0	96.3 94.8	95.6	7.2 7.1	7.2		13.9 14.3	14.1		14.0 14.3	14.2	
					Bottom	9.3	20.3 20.3	20.3	7.9 7.9	7.9	32.0 32.0	32.0	97.9 94.8	96.4	7.3 7.1	7.2	7.2	14.6 14.1	14.4		15.8 15.0	15.4	
9-Dec-13	Sunny	Moderate	18:27	11.1	Surface	1.0	20.4 20.4	20.4	7.9 8.0	8.0	31.3 31.4	31.4	93.4 93.9	93.7	7.0 7.0	7.0	7.0	7.6 7.8	7.7	8.2	7.0 8.4	7.7	8.3
					Middle	5.6	20.4 20.4	20.4	7.9 8.0	8.0	31.6 31.7	31.7	92.8 92.6	92.7	7.0 6.9	7.0		8.4 8.5	8.5		7.6 8.4	8.0	
					Bottom	10.1	20.4 20.4	20.4	8.0 7.9	7.9	31.7 31.7	31.7	93.1 93.4	93.3	7.0 7.0	7.0	7.0	8.3 8.5	8.4		9.1 9.0	9.1	
11-Dec-13	Fine	Moderate	07:43	9.9	Surface	1.0	20.4 20.4	20.4	7.9 7.9	7.9	31.5 31.5	31.5	91.3 92.3	91.8	6.9 6.9	6.9	6.9	9.6 9.7	9.7	9.7	12.3 11.0	11.7	11.7
					Middle	5.0	20.4 20.4	20.4	7.9 7.9	7.9	31.6 31.6	31.6	91.1 92.5	91.8	6.8 6.9	6.9		9.6 9.8	9.7		11.1 10.3	10.7	
					Bottom	8.9	20.5 20.4	20.4	7.9 7.9	7.9	31.8 31.8	31.8	94.8 91.5	93.2	7.1 6.8	7.0	7.0	9.8 9.6	9.7		12.8 12.7	12.8	
13-Dec-13	Cloudy	Moderate	10:00	11.0	Surface	1.0	20.2 20.2	20.2	7.9 7.9	7.9	32.2 32.2	32.2	92.2 91.7	92.0	6.9 6.9	6.9	6.9	4.0 4.1	4.1	4.0	7.3 5.6	6.5	6.7
					Middle	5.5	20.2 20.2	20.2	7.9 7.9	7.9	32.4 32.4	32.4	90.8 91.6	91.2	6.8 6.9	6.8		3.9 3.9	3.9		5.6 7.1	6.4	
					Bottom	10.0	20.4 20.4	20.4	7.9 7.9	7.9	32.7 32.7	32.7	91.9 91.3	91.6	6.8 6.8	6.8	6.8	3.9 3.9	3.9		7.1 7.4	7.3	
16-Dec-13	Rainy	Moderate	11:54	10.7	Surface	1.0	20.2 20.1	20.1	8.0 8.0	8.0	33.1 33.1	33.1	91.5 101.5	96.5	6.8 7.6	7.2	7.1	8.1 8.4	8.3	8.6	10.5 10.6	10.6	10.7
					Middle	5.4	20.2 20.2	20.2	8.0 8.0	8.0	33.1 33.2	33.2	97.1 90.9	94.0	7.2 6.8	7.0		8.8 8.8	8.8		9.9 10.3	10.1	
					Bottom	9.7	20.2 20.2	20.2	8.0 8.0	8.0	33.2 33.2	33.2	90.3 93.5	91.9	6.7 7.0	6.9	6.9	8.7 8.9	8.8		11.3 11.3	11.3	
18-Dec-13	Sunny	Moderate	13:14	11.0	Surface	1.0	18.4 18.4	18.4	8.0 8.0	8.0	32.4 32.4	32.4	94.0 93.7	93.9	7.3 7.3	7.3	7.3	17.4 17.2	17.3	18.4	22.0 22.8	22.4	23.0
					Middle	5.5	18.5 18.4	18.5	8.0 8.0	8.0	32.5 32.4	32.5	93.8 94.1	94.0	7.3 7.3	7.3		18.6 18.4	18.5		22.7 22.2	22.5	
					Bottom	10.0	18.4 18.4	18.4	8.0 8.0	8.0	32.4 32.4	32.4	94.3 93.8	94.1	7.3 7.3	7.3	7.3	19.2 19.4	19.3		23.8 24.4	24.1	
20-Dec-13	Sunny	Moderate	14:18	11.0	Surface	1.0	18.3 18.2	18.2	8.0 8.0	8.0	32.7 32.6	32.7	94.7 95.6	95.2	7.3 7.4	7.4	7.4	7.9 8.4	8.2	8.1	10.9 11.2	11.1	12.8
					Middle	5.5	18.2 18.4	18.3	8.0 8.0	8.0	32.7 32.8	32.8	96.4 94.6	95.5	7.5 7.3	7.4		8.4 7.7	8.1		12.8 13.4	13.1	
					Bottom	10.0	18.3 18.4	18.3	8.0 8.0	8.0	32.7 32.9	32.8	97.4 95.2	96.3	7.6 7.4	7.5	7.5	7.9 8.0	8.0		13.9 14.2	14.1	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS17 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	16:16	10.0	Surface	1.0	17.6 17.6	17.6	8.0 8.0	8.0	31.8 31.9	31.9	93.1 94.5	93.8	7.3 7.5	7.4	7.4	8.4 8.4	8.4	8.5	15.9 14.3	15.1	16.0
					Middle	5.0	18.1 18.1	18.1	8.0 8.0	8.0	32.0 31.9	31.9	92.7 94.8	93.8	7.2 7.4	7.3		8.6 8.8	8.7		15.5 16.0	15.8	
					Bottom	9.0	18.7 18.5	18.6	8.0 8.0	8.0	33.0 32.9	33.0	94.0 97.6	95.8	7.2 7.5	7.4	7.4	8.4 8.2	8.3		16.7 17.3	17.0	
25-Dec-13	Sunny	Moderate	18:29	10.0	Surface	1.0	18.3 18.3	18.3	8.0 8.0	8.0	32.9 32.8	32.8	94.5 93.9	94.2	7.3 7.3	7.3	7.3	5.4 5.2	5.3	6.7	3.3 4.3	3.8	4.4
					Middle	5.0	18.7 18.5	18.6	8.0 8.0	8.0	33.3 33.1	33.2	93.5 93.6	93.6	7.2 7.2	7.2		7.4 7.6	7.5		5.0 5.2	5.1	
					Bottom	9.0	18.7 18.7	18.7	8.0 8.0	8.0	33.5 33.4	33.5	93.7 94.6	94.2	7.2 7.2	7.2	7.2	7.2 7.2	7.2		4.4 4.2	4.3	
27-Dec-13	Sunny	Moderate	07:14	11.2	Surface	1.0	17.9 18.0	18.0	8.0 8.0	8.0	33.4 33.5	33.5	94.6 97.6	96.1	7.3 7.6	7.5	7.6	3.1 3.0	3.1	3.0	4.5 5.0	4.8	4.4
					Middle	5.6	18.1 18.2	18.1	8.0 8.0	8.0	33.5 33.6	33.5	102.6 95.3	99.0	7.9 7.4	7.6		3.1 3.0	3.1		3.4 5.3	4.4	
					Bottom	10.2	18.1 18.1	18.1	8.0 8.0	8.0	33.6 33.6	33.6	96.2 98.1	97.2	7.4 7.6	7.5	7.5	3.0 2.7	2.9		3.9 3.9	3.9	
30-Dec-13	Sunny	Moderate	11:08	11.2	Surface	1.0	17.0 17.0	17.0	8.0 8.0	8.0	33.7 33.7	33.7	99.3 102.4	100.9	7.8 8.1	8.0	8.1	5.1 5.5	5.3	5.5	8.3 9.2	8.8	8.4
					Middle	5.6	16.9 17.0	16.9	8.0 8.0	8.0	33.7 33.7	33.7	100.0 104.2	102.1	7.9 8.2	8.1		5.3 5.6	5.5		8.3 8.3	8.3	
					Bottom	10.2	16.9 16.9	16.9	8.0 8.0	8.0	33.7 33.7	33.7	106.4 100.6	103.5	8.4 8.0	8.2	8.2	5.7 5.7	5.7		7.7 8.2	8.0	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS17 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:19	11.3	Surface	1.0	20.6 20.6	20.6	7.9 8.0	8.0	32.8 32.8	32.8	98.3 96.0	97.2	7.3 7.1	7.2	7.3	12.6 12.0	12.3	12.7	11.8 11.3	11.6	12.1
					Middle	5.7	20.6 20.6	20.6	7.9 8.0	8.0	32.8 32.8	32.8	100.3 96.2	98.3	7.4 7.1	7.3		13.1 12.8	13.0		12.3 11.4	11.9	
					Bottom	10.3	20.6 20.6	20.6	7.9 8.0	8.0	32.8 32.9	32.8	102.0 96.8	99.4	7.6 7.2	7.4	7.4	12.9 12.8	12.9		12.6 12.7	12.7	
4-Dec-13	Sunny	Moderate	08:31	10.4	Surface	1.0	20.5 20.5	20.5	7.9 8.0	8.0	32.4 32.4	32.4	96.7 95.6	96.2	7.2 7.1	7.2	7.2	14.6 14.6	14.6	15.2	11.6 11.0	11.3	13.6
					Middle	5.2	20.5 20.5	20.5	8.0 7.9	8.0	32.4 32.5	32.4	95.5 97.4	96.5	7.1 7.3	7.2		15.1 15.2	15.2		14.0 15.0	14.5	
					Bottom	9.4	20.5 20.5	20.5	7.9 7.9	7.9	32.5 32.5	32.5	98.5 95.5	97.0	7.3 7.1	7.2	7.2	15.6 15.9	15.8		14.6 15.5	15.1	
6-Dec-13	Sunny	Moderate	10:14	10.0	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	32.1 32.1	32.1	94.1 95.2	94.7	7.1 7.1	7.1	7.1	12.3 12.2	12.3	13.8	15.0 14.3	14.7	14.9
					Middle	5.0	20.2 20.3	20.2	7.9 7.9	7.9	32.1 32.1	32.1	93.7 95.5	94.6	7.0 7.2	7.1		14.6 14.2	14.4		14.5 14.0	14.3	
					Bottom	9.0	20.2 20.2	20.2	7.9 7.9	7.9	32.1 32.1	32.1	96.6 93.5	95.1	7.2 7.0	7.1	7.1	14.8 14.8	14.8		15.3 15.8	15.6	
9-Dec-13	Sunny	Moderate	12:39	11.3	Surface	1.0	20.6 20.5	20.5	7.9 7.9	7.9	31.3 31.3	31.3	93.9 93.6	93.8	7.0 7.0	7.0	7.0	7.4 7.8	7.6	9.3	5.9 7.2	6.6	6.2
					Middle	5.7	20.3 20.3	20.3	7.9 7.9	7.9	31.4 31.4	31.4	93.1 92.4	92.8	7.0 7.0	7.0		10.2 9.2	9.7		5.3 6.5	5.9	
					Bottom	10.3	20.3 20.3	20.3	7.8 7.9	7.9	31.4 31.4	31.4	94.6 92.7	93.7	7.1 7.0	7.0	7.0	10.4 10.7	10.6		6.2 5.7	6.0	
11-Dec-13	Sunny	Moderate	14:33	10.1	Surface	1.0	20.5 20.5	20.5	7.9 7.9	7.9	31.6 31.5	31.6	91.6 93.6	92.6	6.9 7.0	6.9	6.9	5.7 5.4	5.6	6.9	7.4 6.1	6.8	8.0
					Middle	5.1	20.4 20.5	20.5	7.9 7.9	7.9	31.7 31.7	31.7	91.2 93.7	92.5	6.8 7.0	6.9		7.4 7.6	7.5		7.6 7.1	7.4	
					Bottom	9.1	20.4 20.5	20.5	7.9 7.9	7.9	31.8 31.8	31.8	96.0 92.2	94.1	7.2 6.9	7.0	7.0	7.7 7.7	7.7		10.1 9.6	9.9	
13-Dec-13	Fine	Moderate	15:49	10.5	Surface	1.0	20.2 20.2	20.2	8.0 8.0	8.0	32.4 32.4	32.4	91.5 91.6	91.6	6.9 6.9	6.9	6.9	7.0 7.0	7.0	7.4	8.8 9.9	9.4	9.0
					Middle	5.3	20.3 20.3	20.3	8.0 8.0	8.0	32.5 32.5	32.5	90.8 90.9	90.9	6.8 6.8	6.8		7.3 7.4	7.4		9.1 8.6	8.9	
					Bottom	9.5	20.4 20.4	20.4	8.0 8.0	8.0	32.7 32.7	32.7	91.4 91.5	91.5	6.8 6.8	6.8	6.8	7.5 7.8	7.7		8.4 8.9	8.7	
16-Dec-13	Rainy	Moderate	06:55	11.2	Surface	1.0	20.0 20.0	20.0	8.0 8.0	8.0	32.9 32.9	32.9	100.7 94.1	97.4	7.6 7.1	7.3	7.3	9.8 9.6	9.7	9.9	11.2 12.2	11.7	11.2
					Middle	5.6	20.0 20.0	20.0	8.0 8.0	8.0	32.9 32.9	32.9	93.4 97.4	95.4	7.0 7.3	7.2		9.9 9.8	9.9		10.4 10.3	10.4	
					Bottom	10.2	20.0 19.9	20.0	8.0 8.0	8.0	32.9 32.9	32.9	93.1 95.4	94.3	7.0 7.2	7.1	7.1	10.0 10.3	10.2		11.0 11.7	11.4	
18-Dec-13	Sunny	Moderate	07:59	11.1	Surface	1.0	18.3 18.3	18.3	8.0 8.0	8.0	32.7 32.7	32.7	94.9 95.1	95.0	7.3 7.4	7.4	7.4	11.6 11.4	11.5	11.9	11.9 12.8	12.4	13.4
					Middle	5.6	18.3 18.3	18.3	8.0 8.0	8.0	32.7 32.7	32.7	95.3 94.8	95.1	7.4 7.3	7.4		12.0 11.8	11.9		12.4 13.3	12.9	
					Bottom	10.1	18.3 18.3	18.3	8.0 8.0	8.0	32.7 32.7	32.7	95.0 95.7	95.4	7.4 7.4	7.4	7.4	12.3 12.4	12.4		15.0 14.9	15.0	
20-Dec-13	Sunny	Moderate	09:17	11.2	Surface	1.0	18.0 18.0	18.0	7.9 7.9	7.9	32.5 32.6	32.5	95.8 95.0	95.4	7.5 7.4	7.4	7.5	7.8 8.0	7.9	8.1	10.6 11.0	10.8	11.2
					Middle	5.6	17.9 17.9	17.9	7.9 7.9	7.9	32.5 32.5	32.5	96.3 94.7	95.5	7.5 7.4	7.5		8.1 8.5	8.3		12.0 10.7	11.4	
					Bottom	10.2	17.9 17.9	17.9	7.8 7.9	7.9	32.5 32.5	32.5	98.2 94.8	96.5	7.7 7.4	7.5	7.5	8.4 7.6	8.0		12.0 11.0	11.5	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS17 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	10:39	10.5	Surface	1.0	17.6 17.6	17.6	7.9 7.9	7.9	32.0 32.0	32.0	97.6 95.5	96.6	7.7 7.5	7.6	7.6	7.6 7.9	7.8	8.2	7.7 8.5	8.1	8.5
					Middle	5.3	17.7 17.7	17.7	7.9 7.9	7.9	32.2 32.3	32.2	98.9 95.7	97.3	7.8 7.5	7.6		8.2 8.3	8.3		8.6 9.7	9.2	
					Bottom	9.5	17.7 17.7	17.7	7.9 7.9	7.9	32.3 32.2	32.3	96.3 102.8	99.6	7.6 8.1	7.8	7.8	8.6 8.5	8.6		8.4 8.0	8.2	
25-Dec-13	Sunny	Moderate	12:22	10.2	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	32.4 32.4	32.4	94.8 96.3	95.6	7.4 7.5	7.5	7.5	6.2 6.1	6.2	6.9	4.7 4.5	4.6	4.9
					Middle	5.1	18.2 18.2	18.2	8.0 8.0	8.0	32.2 32.2	32.2	94.1 96.5	95.3	7.3 7.5	7.4		6.9 6.8	6.9		4.6 5.8	5.2	
					Bottom	9.2	18.4 18.6	18.5	8.0 8.0	8.0	33.4 33.3	33.3	96.4 100.2	98.3	7.4 7.7	7.6	7.6	7.6 7.5	7.6		5.4 4.2	4.8	
27-Dec-13	Sunny	Moderate	13:51	11.4	Surface	1.0	18.4 18.4	18.4	8.1 8.0	8.1	33.5 33.5	33.5	94.9 96.5	95.7	7.3 7.4	7.4	7.4	2.7 2.8	2.8	3.1	6.8 5.4	6.1	6.0
					Middle	5.7	18.4 18.4	18.4	8.0 8.0	8.0	33.6 33.6	33.6	95.0 98.1	96.6	7.3 7.5	7.4		3.3 3.3	3.3		6.7 5.6	6.2	
					Bottom	10.4	18.4 18.4	18.4	8.0 8.0	8.0	33.6 33.6	33.6	100.8 95.4	98.1	7.8 7.3	7.5	7.5	3.3 3.3	3.3		5.7 5.5	5.6	
30-Dec-13	Sunny	Moderate	16:12	11.5	Surface	1.0	17.3 17.3	17.3	8.1 8.1	8.1	33.4 33.5	33.5	99.1 98.3	98.7	7.8 7.7	7.8	7.8	4.7 4.7	4.7	4.9	8.6 8.9	8.8	8.3
					Middle	5.8	17.2 17.2	17.2	8.1 8.1	8.1	33.6 33.5	33.5	97.6 99.1	98.4	7.7 7.8	7.7		5.3 4.9	5.1		8.7 7.8	8.3	
					Bottom	10.5	17.3 17.2	17.3	8.1 8.1	8.1	33.6 33.6	33.6	98.0 101.1	99.6	7.7 7.9	7.8	7.8	5.0 4.6	4.8		8.4 7.4	7.9	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	10:56	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	7.7	-	-	6.0	-	-	8.1
					Middle	0.9	19.9	19.9	8.0	8.0	32.3	32.3	100.8	101.7	7.6	7.7		5.9	6.0		8.2	8.1	
							19.9		7.9		32.3		102.5		7.7			6.0			7.9		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
4-Dec-13	Sunny	Moderate	12:39	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	11.5	-	-	12.1
					Middle	0.7	20.3	20.3	7.9	7.9	32.3	32.3	98.9	98.6	7.4	7.4		11.6	11.5		12.4	12.1	
							20.3		7.9		32.3		98.2		7.3			11.4			11.7		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
6-Dec-13	Sunny	Moderate	14:31	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	10.8	-	-	14.6
					Middle	0.7	20.1	20.1	7.9	7.9	32.1	32.1	99.9	100.5	7.5	7.5		10.9	10.8		15.0	14.6	
							20.1		7.9		32.1		101.1		7.6			10.7			14.1		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
9-Dec-13	Sunny	Moderate	17:20	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	9.0	-	-	13.0
					Middle	0.9	20.7	20.7	7.9	7.9	32.6	32.6	96.5	96.3	7.2	7.1		9.2	9.0		13.4	13.0	
							20.7		7.9		32.6		96.1		7.1			8.8			12.5		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
11-Dec-13	Fine	Moderate	08:41	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	5.3	-	-	10.1
					Middle	0.7	20.3	20.3	8.0	8.0	31.5	31.5	94.7	94.8	7.1	7.1		5.3	5.3		9.8	10.1	
							20.3		8.0		31.5		94.8		7.1			5.3			10.4		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
13-Dec-13	Cloudy	Moderate	11:04	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	4.2	-	-	5.8
					Middle	0.7	19.8	19.8	8.0	8.0	32.0	32.0	96.7	96.7	7.3	7.3		4.2	4.2		6.0	5.8	
							19.8		8.0		32.0		96.7		7.3			4.1			5.5		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
16-Dec-13	Rainy	Moderate	11:01	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	8.1	-	-	6.8	-	-	8.1
					Middle	0.9	19.2	19.2	7.9	7.9	32.2	32.2	106.6	106.7	8.1	8.1		6.8	6.8		8.4	8.1	
							19.2		7.9		32.2		106.7		8.2			6.8			7.7		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
18-Dec-13	Sunny	Moderate	12:02	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	11.5	-	-	15.2
					Middle	0.8	17.9	17.9	7.9	7.9	31.3	31.3	95.2	95.1	7.5	7.5		11.5	11.5		14.3	15.2	
							17.9		7.9		31.3		95.0		7.5			11.4			16.0		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
20-Dec-13	Sunny	Moderate	13:03	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.8	-	-	11.9	-	-	14.2
					Middle	0.8	17.3	17.3	7.9	7.9	31.8	31.8	98.8	98.2	7.8	7.8		12.3	11.9		14.9	14.2	
							17.3		7.9		31.8		97.6		7.8			11.4			13.4		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	15:16	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	8.1	-	-	11.3	-	-	15.1
					Middle	0.7	17.4	17.4	8.0	8.0	31.9	31.9	102.9	102.4	8.2	8.1		11.4	11.3		14.8	15.1	
							17.4		8.0		31.9		101.9		8.1			11.2			15.3		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
25-Dec-13	Sunny	Moderate	17:31	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	8.1	-	-	10.4	-	-	8.8
					Middle	0.6	17.0	17.0	8.0	8.0	32.1	32.0	100.7	101.3	8.0	8.1		10.3	10.4		9.1	8.8	
							17.0		8.0		32.0		101.8		8.1			10.5			8.5		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
27-Dec-13	Sunny	Moderate	08:24	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	7.9	-	-	5.1	-	-	8.2
					Middle	0.9	16.6	16.5	8.0	8.0	32.3	32.3	98.3	98.4	7.9	7.9		5.0	5.1		8.6	8.2	
							16.5		8.0		32.3		98.4		7.9			5.2			7.8		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
30-Dec-13	Sunny	Moderate	12:18	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	8.2	-	-	5.0	-	-	8.8
					Middle	0.8	15.9	15.9	8.1	8.1	33.1	33.1	101.5	101.4	8.2	8.2		4.9	5.0		9.1	8.8	
							15.9		8.1		33.1		101.3		8.2			5.0			8.4		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	07:19	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-		-	-	
					Middle	0.8	19.8 19.8	19.8	8.0 8.0	8.0	32.3 32.3	32.3	96.3 96.2	96.3	7.3 7.3	7.3		6.0 5.6	5.8	5.8	9.8 9.6	9.7	9.7
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
4-Dec-13	Sunny	Moderate	09:37	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-		-	-	
					Middle	0.7	20.2 20.2	20.2	8.0 8.0	8.0	32.7 32.7	32.7	97.5 97.5	97.5	7.3 7.3	7.3		9.8 10.2	10.0	10.0	13.6 14.1	13.9	13.9
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
6-Dec-13	Sunny	Moderate	11:19	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-		-	-	
					Middle	0.8	20.0 20.0	20.0	8.0 8.0	8.0	32.3 32.3	32.3	95.4 95.0	95.2	7.2 7.1	7.2		12.0 12.1	12.1	12.1	13.7 13.0	13.4	13.4
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
9-Dec-13	Sunny	Moderate	13:44	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-		-	-	
					Middle	0.8	20.5 20.5	20.5	8.0 8.0	8.0	31.9 31.9	31.9	95.7 95.8	95.8	7.1 7.2	7.1		8.6 8.9	8.8	8.8	8.1 8.7	8.4	8.4
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
11-Dec-13	Sunny	Moderate	13:31	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
					Middle	0.7	20.3 20.3	20.3	7.9 7.9	7.9	31.3 31.3	31.3	97.5 98.5	98.0	7.3 7.4	7.4		11.0 11.1	11.1	11.1	15.2 14.3	14.8	14.8
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
13-Dec-13	Fine	Moderate	14:45	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-		-	-	
					Middle	0.7	19.8 19.8	19.8	8.0 8.0	8.0	31.9 31.9	31.9	100.5 99.5	100.0	7.6 7.5	7.6		6.9 7.0	7.0	7.0	10.4 9.9	10.2	10.2
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
16-Dec-13	Rainy	Moderate	07:53	1.8	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-		-	-	
					Middle	0.9	19.3 19.4	19.4	8.0 8.0	8.0	32.2 32.2	32.2	94.1 94.0	94.1	7.2 7.2	7.2		6.0 5.9	6.0	6.0	9.6 8.7	9.2	9.2
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
18-Dec-13	Sunny	Moderate	09:17	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-		-	-	
					Middle	0.8	17.9 17.8	17.9	8.0 8.0	8.0	31.6 31.6	31.6	93.1 93.1	93.1	7.3 7.3	7.3		13.0 12.8	12.9	12.9	21.0 21.0	21.0	21.0
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
20-Dec-13	Sunny	Moderate	10:40	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-		-	-	
					Middle	0.8	17.2 17.2	17.2	8.0 8.0	8.0	32.0 32.0	32.0	94.8 94.9	94.9	7.5 7.5	7.5		10.5 10.8	10.7	10.7	14.2 15.6	14.9	14.9
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	11:38	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-	11.4	-	-	18.1
							-		-		-		-		-			-			-		
					Middle	0.6	17.0	17.0	8.0	8.0	32.2	32.2	96.1	96.1	7.7	7.6		11.4	11.4		17.6	18.1	
							17.0		8.0		32.2		96.0		7.6			11.3			18.6		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
							-		-		-		-		-			-			-		
25-Dec-13	Sunny	Moderate	13:21	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	8.0	-	-	7.4	-	-	9.5
							-		-		-		-		-			-			-		
					Middle	0.6	17.0	17.0	8.0	8.0	32.0	32.0	99.7	99.8	8.0	8.0		7.5	7.4		9.2	9.5	
							17.0		8.0		32.0		99.9		8.0			7.3			9.7		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
							-		-		-		-		-			-			-		
27-Dec-13	Sunny	Moderate	12:38	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	8.3	-	-	5.8	-	-	8.0
							-		-		-		-		-			-			-		
					Middle	0.8	16.3	16.3	8.0	8.0	31.9	31.9	102.6	102.9	8.3	8.3		5.6	5.8		8.8	8.0	
							16.3		8.0		31.9		103.1		8.3			6.0			7.2		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
							-		-		-		-		-			-			-		
30-Dec-13	Sunny	Moderate	14:58	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	8.7	-	-	4.8	-	-	6.1
							-		-		-		-		-			-			-		
					Middle	0.8	16.1	16.2	8.0	8.0	32.8	32.8	108.1	107.6	8.7	8.7		4.7	4.8		5.9	6.1	
							16.2		8.0		32.8		107.1		8.6			4.9			6.2		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
							-		-		-		-		-			-			-		

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR4(N) - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	11:38	3.4	Surface	1.0	20.5 20.5	20.5	8.0 8.0	8.0	32.7 32.7	32.7	102.6 99.6	101.1	7.6 7.4	7.5	7.5	5.6 5.3	5.5	5.6	8.1 9.3	8.7	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	20.4 20.5	20.4	8.0 8.0	8.0	32.7 32.7	32.7	104.2 100.6	102.4	7.8 7.5	7.6	7.6	5.7 5.5	5.6		7.2 7.5	7.4	
4-Dec-13	Sunny	Moderate	13:20	3.6	Surface	1.0	20.6 20.6	20.6	7.9 7.9	7.9	32.3 32.3	32.3	98.6 98.0	98.3	7.3 7.3	7.3	7.3	5.7 5.9	5.8	5.8	7.8 8.2	8.0	7.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	20.6 20.6	20.6	7.9 7.9	7.9	32.3 32.3	32.3	96.4 98.3	97.4	7.2 7.3	7.2	7.2	5.8 5.8	5.8		8.3 7.3	7.8	
6-Dec-13	Sunny	Moderate	15:10	3.7	Surface	1.0	20.6 20.6	20.6	7.9 7.9	7.9	31.9 31.9	31.9	96.3 96.5	96.4	7.2 7.2	7.2	7.2	5.8 5.5	5.7	5.7	7.6 7.4	7.5	8.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.5 20.6	20.6	7.9 7.9	7.9	31.9 31.9	31.9	96.5 96.0	96.3	7.2 7.2	7.2	7.2	5.6 5.6	5.6		8.9 9.1	9.0	
9-Dec-13	Sunny	Moderate	18:06	3.6	Surface	1.0	20.7 20.7	20.7	7.9 7.9	7.9	31.8 31.8	31.8	96.1 95.7	95.9	7.2 7.1	7.1	7.1	5.6 5.7	5.7	5.7	8.4 6.1	7.3	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	20.7 20.7	20.7	7.9 7.9	7.9	31.8 31.8	31.8	95.7 96.4	96.1	7.1 7.2	7.2	7.2	5.4 5.9	5.7		8.9 7.2	8.1	
11-Dec-13	Fine	Moderate	08:03	3.7	Surface	1.0	20.4 20.4	20.4	7.9 7.9	7.9	31.0 31.0	31.0	92.2 93.4	92.8	6.9 7.0	7.0	7.0	4.8 4.8	4.8	4.9	8.1 7.7	7.9	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.4 20.4	20.4	7.9 7.9	7.9	31.0 31.0	31.0	95.6 92.6	94.1	7.2 7.0	7.1	7.1	4.9 4.8	4.9		7.7 8.6	8.2	
13-Dec-13	Cloudy	Moderate	10:26	3.8	Surface	1.0	19.7 19.7	19.7	7.9 7.9	7.9	31.4 31.3	31.3	92.6 91.6	92.1	7.1 7.0	7.0	7.0	4.1 4.1	4.1	4.2	7.2 6.4	6.8	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	19.7 19.7	19.7	7.9 7.9	7.9	31.5 31.5	31.5	92.2 94.1	93.2	7.0 7.1	7.1	7.1	4.2 4.4	4.3		6.9 6.9	6.9	
16-Dec-13	Rainy	Moderate	11:34	3.7	Surface	1.0	19.6 19.6	19.6	8.0 8.0	8.0	32.5 32.5	32.5	104.3 101.1	102.7	7.9 7.7	7.8	7.8	6.7 7.0	6.9	7.0	10.1 9.3	9.7	10.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	19.5 19.6	19.6	8.0 8.0	8.0	32.6 32.5	32.5	102.6 99.9	101.3	7.8 7.6	7.7	7.7	7.0 6.9	7.0		9.8 11.5	10.7	
18-Dec-13	Sunny	Moderate	12:46	3.3	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	31.4 31.4	31.4	96.1 95.7	95.9	7.6 7.5	7.5	7.5	6.9 7.0	7.0	7.1	12.5 11.4	12.0	12.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	17.9 18.0	18.0	8.0 8.0	8.0	31.4 31.5	31.4	96.2 96.0	96.1	7.6 7.5	7.5	7.5	7.0 7.1	7.1		13.6 13.9	13.8	
20-Dec-13	Sunny	Moderate	13:52	3.6	Surface	1.0	18.4 18.4	18.4	7.9 7.9	7.9	32.1 32.2	32.2	98.9 96.9	97.9	7.7 7.5	7.6	7.6	7.9 7.8	7.9	8.1	9.0 8.5	8.8	9.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	18.4 18.3	18.3	7.9 7.8	7.9	32.2 32.2	32.2	97.5 101.1	99.3	7.6 7.9	7.7	7.7	7.8 8.5	8.2		9.0 9.6	9.3	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR4(N) - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	15:51	3.8	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	31.9 31.8	31.8	98.7 98.5	98.6	7.7 7.7	7.7	7.7	4.7 4.8	4.8	4.9	9.7 9.3	9.5	8.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	17.9 17.8	17.9	8.0 8.0	8.0	31.9 31.9	31.9	98.6 99.0	98.8	7.7 7.8	7.8	7.8	4.9 5.0	5.0		8.2 8.2	8.2	
25-Dec-13	Sunny	Moderate	18:08	3.8	Surface	1.0	17.9 17.9	17.9	8.0 8.0	8.0	32.2 32.2	32.2	100.4 99.7	100.1	7.9 7.8	7.8	7.8	4.3 4.4	4.4	4.5	5.7 5.1	5.4	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	17.8 17.8	17.8	8.0 8.0	8.0	32.2 32.2	32.2	99.7 99.9	99.8	7.8 7.8	7.8	7.8	4.5 4.4	4.5		5.1 4.7	4.9	
27-Dec-13	Sunny	Moderate	07:35	3.5	Surface	1.0	16.2 15.9	16.1	8.0 8.0	8.0	31.0 31.1	31.1	101.0 97.3	99.2	8.2 8.0	8.1	8.1	4.0 3.8	3.9	4.2	3.5 5.8	4.7	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	16.5 16.6	16.6	8.0 8.0	8.0	32.2 32.1	32.2	99.8 103.3	101.6	8.0 8.3	8.2	8.2	4.3 4.7	4.5		3.7 5.9	4.8	
30-Dec-13	Sunny	Moderate	11:30	3.4	Surface	1.0	16.5 16.7	16.6	8.1 8.1	8.1	32.8 32.9	32.9	102.7 101.0	101.9	8.2 8.1	8.1	8.1	3.7 3.9	3.8	3.9	4.7 3.5	4.1	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	16.7 16.7	16.7	8.0 8.1	8.1	33.1 33.2	33.1	103.8 102.1	103.0	8.3 8.1	8.2	8.2	4.1 3.8	4.0		4.7 4.4	4.6	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
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Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR4(N) - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:39	3.4	Surface	1.0	20.5 20.5	20.5	8.0 8.0	8.0	32.7 32.7	32.7	101.2 98.6	99.9	7.5 7.3	7.4	7.4	8.8 8.1	8.5	8.8	8.9 8.4	8.7	8.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	20.3 20.5	20.4	8.0 8.0	8.0	32.8 32.7	32.8	104.9 99.8	102.4	7.8 7.4	7.6	7.6	9.2 9.0	9.1		8.0 8.0	8.0	
4-Dec-13	Sunny	Moderate	08:54	3.9	Surface	1.0	20.3 20.3	20.3	8.0 8.0	8.0	32.6 32.6	32.6	97.3 98.2	97.8	7.3 7.3	7.3	7.3	11.4 11.1	11.3	11.3	13.8 14.4	14.1	13.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	20.3 20.3	20.3	8.0 8.0	8.0	32.6 32.6	32.6	97.5 99.7	98.6	7.3 7.4	7.4	7.4	11.1 11.5	11.3		13.5 13.6	13.6	
6-Dec-13	Sunny	Moderate	10:36	3.7	Surface	1.0	20.2 20.2	20.2	7.9 7.9	7.9	32.1 32.1	32.1	95.5 99.2	97.4	7.2 7.4	7.3	7.3	10.3 10.8	10.6	10.5	11.5 12.6	12.1	12.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.2 20.2	20.2	7.9 7.9	7.9	32.1 32.1	32.1	102.1 97.0	99.6	7.7 7.3	7.5	7.5	10.2 10.3	10.3		14.1 13.3	13.7	
9-Dec-13	Sunny	Moderate	13:00	3.5	Surface	1.0	20.6 20.6	20.6	7.9 7.9	7.9	31.4 31.4	31.4	95.8 96.2	96.0	7.2 7.2	7.2	7.2	6.5 6.1	6.3	6.5	8.5 7.5	8.0	8.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	20.6 20.4	20.5	7.9 7.8	7.9	31.4 31.6	31.5	95.9 96.9	96.4	7.2 7.3	7.2	7.2	6.4 7.0	6.7		9.1 8.0	8.6	
11-Dec-13	Sunny	Moderate	14:11	3.8	Surface	1.0	20.4 20.4	20.4	7.9 7.9	7.9	31.3 31.3	31.3	92.3 93.3	92.8	6.9 7.0	7.0	7.0	8.7 8.9	8.8	8.8	10.4 10.6	10.5	12.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	20.4 20.4	20.4	7.9 7.9	7.9	31.4 31.3	31.4	94.0 92.8	93.4	7.1 7.0	7.0	7.0	8.8 8.8	8.8		13.9 14.0	14.0	
13-Dec-13	Fine	Moderate	15:26	3.8	Surface	1.0	19.9 19.8	19.9	7.9 7.9	7.9	31.8 31.7	31.7	93.7 94.5	94.1	7.1 7.2	7.1	7.1	4.7 4.7	4.7	5.1	7.4 7.5	7.5	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	19.8 19.8	19.8	7.9 7.9	7.9	31.8 31.8	31.8	94.4 96.3	95.4	7.1 7.3	7.2	7.2	5.5 5.5	5.5		7.4 8.2	7.8	
16-Dec-13	Rainy	Moderate	07:15	3.5	Surface	1.0	19.5 19.5	19.5	8.0 8.0	8.0	32.1 32.1	32.1	102.1 97.9	100.0	7.8 7.4	7.6	7.6	7.8 7.7	7.8	7.9	7.3 8.0	7.7	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	19.5 19.3	19.4	8.0 8.0	8.0	32.1 32.2	32.2	96.4 101.0	98.7	7.3 7.7	7.5	7.5	7.7 8.1	7.9		9.2 7.8	8.5	
18-Dec-13	Sunny	Moderate	08:26	3.5	Surface	1.0	18.1 18.1	18.1	8.0 8.0	8.0	31.9 31.9	31.9	92.7 92.8	92.8	7.2 7.3	7.2	7.2	7.6 7.7	7.7	7.8	11.2 11.2	11.2	11.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	18.1 18.1	18.1	8.0 8.0	8.0	31.9 31.9	31.9	92.9 92.9	92.9	7.3 7.3	7.3	7.3	7.7 7.8	7.8		12.1 11.4	11.8	
20-Dec-13	Sunny	Moderate	09:55	3.5	Surface	1.0	18.1 18.2	18.1	7.9 7.9	7.9	32.4 32.5	32.4	97.1 95.2	96.2	7.6 7.4	7.5	7.5	15.6 14.8	15.2	14.5	16.7 17.1	16.9	16.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	18.1 18.1	18.1	7.9 7.9	7.9	32.5 32.5	32.5	96.0 98.6	97.3	7.5 7.7	7.6	7.6	14.3 13.1	13.7		15.5 16.1	15.8	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR4(N) - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	11:00	3.8	Surface	1.0	17.5 17.4	17.5	8.0 8.0	8.0	32.1 32.1	32.1	99.2 97.2	98.2	7.8 7.7	7.8	7.8	8.6 8.6	8.6	8.7	14.7 14.4	14.6	14.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	17.5 17.5	17.5	8.0 8.0	8.0	32.1 32.1	32.1	101.1 98.0	99.6	8.0 7.7	7.9	7.9	8.7 8.8	8.8		14.2 14.2	14.2	
25-Dec-13	Sunny	Moderate	12:41	3.8	Surface	1.0	17.7 17.7	17.7	8.0 8.0	8.0	32.1 32.1	32.1	97.7 98.6	98.2	7.7 7.8	7.7	7.7	6.3 6.3	6.3	6.3	6.2 7.1	6.7	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	17.7 17.7	17.7	8.0 8.0	8.0	32.1 32.1	32.1	98.1 99.3	98.7	7.7 7.8	7.8	7.8	6.3 6.3	6.3		7.9 7.6	7.8	
27-Dec-13	Sunny	Moderate	13:27	3.7	Surface	1.0	17.4 17.4	17.4	8.0 8.0	8.0	32.8 32.8	32.8	100.5 99.1	99.8	7.9 7.8	7.9	7.9	9.3 9.1	9.2	9.3	12.5 12.5	12.5	13.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	17.4 17.4	17.4	8.0 8.0	8.0	32.8 32.8	32.8	102.1 99.6	100.9	8.0 7.9	7.9	7.9	9.2 9.3	9.3		15.3 15.0	15.2	
30-Dec-13	Sunny	Moderate	15:46	3.5	Surface	1.0	16.8 16.8	16.8	8.1 8.1	8.1	33.1 33.1	33.1	107.8 107.0	107.4	8.6 8.5	8.5	8.5	6.7 6.9	6.8	7.2	10.2 11.5	10.9	12.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	16.8 16.8	16.8	8.1 8.1	8.1	33.1 33.1	33.1	107.7 107.3	107.5	8.6 8.5	8.5	8.5	7.3 7.7	7.5		13.7 13.5	13.6	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
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*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	12:10	4.4	Surface	1.0	20.5 20.5	20.5	8.3 8.3	8.3	32.8 32.8	32.8	98.1 98.4	98.3	7.3 7.3	7.3	7.3	3.7 3.7	3.7	3.8	8.9 10.4	9.7	9.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	20.4 20.5	20.5	8.3 8.3	8.3	32.9 32.9	32.9	98.0 98.8	98.4	7.3 7.3	7.3	7.3	3.9 3.8	3.9		9.0 8.6	8.8	
4-Dec-13	Sunny	Moderate	13:18	5.1	Surface	1.0	20.8 20.8	20.8	8.2 8.2	8.2	32.1 31.4	31.7	98.5 97.0	97.8	7.3 7.2	7.2	7.2	3.7 3.6	3.7	3.7	6.6 5.5	6.1	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	20.8 20.8	20.8	8.2 8.2	8.2	32.3 32.3	32.3	96.8 97.9	97.4	7.2 7.3	7.2	7.2	3.6 3.7	3.7		8.4 8.4	8.4	
6-Dec-13	Sunny	Moderate	15:22	5.6	Surface	1.0	20.5 20.4	20.5	8.1 8.1	8.1	31.2 31.4	31.3	95.8 96.4	96.1	7.2 7.2	7.2	7.2	4.2 4.4	4.3	4.3	8.0 7.5	7.8	8.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	20.4 20.5	20.5	8.1 8.2	8.2	31.9 32.0	32.0	95.9 96.8	96.4	7.2 7.2	7.2	7.2	4.3 4.3	4.3		8.8 9.5	9.2	
9-Dec-13	Sunny	Moderate	18:51	4.5	Surface	1.0	20.5 20.5	20.5	8.1 8.1	8.1	29.3 30.3	29.8	95.6 94.7	95.2	7.3 7.1	7.2	7.2	2.5 2.7	2.6	2.9	6.7 6.2	6.5	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	20.4 20.5	20.5	8.1 8.1	8.1	31.0 31.1	31.1	97.1 94.6	95.9	7.3 7.1	7.2	7.2	3.2 3.0	3.1		7.2 8.7	8.0	
11-Dec-13	Fine	Moderate	07:54	5.3	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	31.6 31.6	31.6	92.2 92.4	92.3	6.9 6.9	6.9	6.9	4.2 4.3	4.3	4.5	12.0 11.7	11.9	13.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	20.4 20.4	20.4	8.1 8.1	8.1	31.8 31.8	31.8	92.0 92.3	92.2	6.9 6.9	6.9	6.9	4.7 4.5	4.6		13.9 14.3	14.1	
13-Dec-13	Cloudy	Moderate	10:06	5.6	Surface	1.0	20.0 20.1	20.0	8.1 8.1	8.1	32.1 32.2	32.1	93.5 93.5	93.5	7.0 7.0	7.0	7.0	5.1 5.0	5.1	5.2	5.8 7.4	6.6	7.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	20.1 20.0	20.1	8.1 8.1	8.1	32.4 32.3	32.3	93.8 93.8	93.8	7.0 7.0	7.0	7.0	5.3 5.1	5.2		8.7 9.7	9.2	
16-Dec-13	Rainy	Moderate	12:11	4.4	Surface	1.0	19.7 19.6	19.7	8.2 8.2	8.2	33.0 33.0	33.0	96.2 98.6	97.4	7.3 7.4	7.3	7.3	6.3 6.6	6.5	6.5	11.1 11.2	11.2	11.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	19.7 19.7	19.7	8.2 8.2	8.2	33.0 33.0	33.0	100.8 97.2	99.0	7.6 7.3	7.5	7.5	6.5 6.5	6.5		11.9 11.2	11.6	
18-Dec-13	Sunny	Moderate	13:18	4.6	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	32.8 32.8	32.8	97.0 96.0	96.5	7.5 7.4	7.4	7.4	7.7 7.6	7.7	7.8	12.7 12.4	12.6	13.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	18.5 18.5	18.5	8.2 8.2	8.2	32.8 32.8	32.8	98.9 96.4	97.7	7.6 7.4	7.5	7.5	7.9 7.7	7.8		13.8 13.2	13.5	
20-Dec-13	Sunny	Moderate	14:32	4.5	Surface	1.0	18.0 18.0	18.0	8.2 8.2	8.2	31.2 31.3	31.2	96.7 96.0	96.4	7.6 7.5	7.6	7.6	4.5 4.6	4.6	4.6	6.4 7.6	7.0	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	18.0 18.0	18.0	8.2 8.2	8.2	32.5 32.5	32.5	96.3 97.4	96.9	7.5 7.6	7.6	7.6	4.4 4.5	4.5		6.1 6.2	6.2	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	16:12	5.6	Surface	1.0	17.7 17.6	17.7	8.3 8.3	8.3	31.2 30.4	30.8	97.5 97.2	97.4	7.7 7.7	7.7	7.7	3.3 3.5	3.4	4.3	4.6 4.7	4.7	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	17.6 17.6	17.6	8.3 8.3	8.3	32.0 32.0	32.0	96.9 97.3	97.1	7.6 7.7	7.7	7.7	5.2 4.9	5.1		5.9 5.9	5.9	
25-Dec-13	Sunny	Moderate	18:14	5.5	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	32.3 32.3	32.3	97.4 97.5	97.5	7.6 7.6	7.6	7.6	4.8 4.9	4.9	5.0	8.2 7.3	7.8	8.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	17.8 17.8	17.8	8.2 8.2	8.2	32.4 32.4	32.4	97.4 97.3	97.4	7.6 7.6	7.6	7.6	5.0 4.9	5.0		9.3 9.2	9.3	
27-Dec-13	Sunny	Moderate	07:33	4.7	Surface	1.0	17.3 17.2	17.2	8.1 8.1	8.1	32.9 32.9	32.9	95.7 95.8	95.8	7.6 7.6	7.6	7.6	3.3 3.5	3.4	3.5	9.1 9.2	9.2	9.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	17.2 17.2	17.2	8.1 8.1	8.1	32.9 32.9	32.9	95.7 95.9	95.8	7.6 7.6	7.6	7.6	3.4 3.6	3.5		9.3 9.3	9.3	
30-Dec-13	Sunny	Moderate	11:30	4.6	Surface	1.0	17.1 17.1	17.1	8.2 8.2	8.2	34.0 34.0	34.0	98.9 98.8	98.9	7.8 7.8	7.8	7.8	2.5 2.6	2.6	2.6	6.7 6.4	6.6	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	17.1 17.1	17.1	8.2 8.2	8.2	34.0 34.0	34.0	98.7 98.7	98.7	7.8 7.8	7.8	7.8	2.5 2.5	2.5		8.1 9.4	8.8	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:48	4.6	Surface	1.0	20.1 20.1	20.1	8.2 8.2	8.2	32.7 32.7	32.7	96.0 96.0	96.0	7.2 7.2	7.2	7.2	7.6 7.1	7.4	7.5	8.0 8.3	8.2	9.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	20.2 20.2	20.2	8.2 8.2	8.2	32.7 32.7	32.7	96.0 96.0	96.0	7.2 7.2	7.2	7.2	7.6 7.6	7.6		10.2 10.2	10.2	
4-Dec-13	Sunny	Moderate	08:32	5.1	Surface	1.0	20.5 20.5	20.5	8.2 8.2	8.2	32.6 32.6	32.6	96.5 96.5	96.5	7.2 7.2	7.2	7.2	12.7 12.6	12.7	12.8	22.6 22.5	22.6	23.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	20.4 20.4	20.4	8.2 8.2	8.2	32.7 32.6	32.7	96.4 96.4	96.4	7.2 7.2	7.2	7.2	13.0 12.6	12.8		23.4 23.2	23.3	
6-Dec-13	Sunny	Moderate	10:18	5.4	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	32.4 32.4	32.4	95.3 95.3	95.3	7.1 7.1	7.1	7.1	14.0 14.1	14.1	14.7	17.8 16.7	17.3	18.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	20.1 20.1	20.1	8.2 8.2	8.2	32.4 32.4	32.4	95.1 95.0	95.1	7.1 7.1	7.1	7.1	15.2 15.4	15.3		20.2 19.4	19.8	
9-Dec-13	Sunny	Moderate	12:59	4.6	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	31.4 31.3	31.4	94.5 94.4	94.5	7.1 7.1	7.1	7.1	5.9 6.2	6.1	6.4	9.6 9.4	9.5	9.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	20.3 20.2	20.3	8.1 8.1	8.1	31.4 31.5	31.5	94.2 94.1	94.2	7.1 7.1	7.1	7.1	6.6 6.7	6.7		10.6 9.4	10.0	
11-Dec-13	Sunny	Moderate	14:29	5.5	Surface	1.0	20.4 20.4	20.4	8.1 8.1	8.1	31.5 31.3	31.4	95.0 94.4	94.7	7.1 7.1	7.1	7.1	8.7 8.0	8.4	8.9	18.0 18.3	18.2	17.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	20.4 20.4	20.4	8.1 8.2	8.1	31.5 31.5	31.5	94.1 96.8	95.5	7.1 7.3	7.2	7.2	8.9 9.8	9.4		18.0 17.0	17.5	
13-Dec-13	Fine	Moderate	15:47	5.5	Surface	1.0	20.2 20.2	20.2	8.1 8.1	8.1	32.3 32.3	32.3	97.9 99.2	98.6	7.3 7.4	7.4	7.4	2.6 2.5	2.6	2.7	4.7 3.8	4.3	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	98.1 101.3	99.7	7.4 7.6	7.5	7.5	2.6 2.9	2.8		4.9 3.8	4.4	
16-Dec-13	Rainy	Moderate	07:13	4.6	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	33.1 33.1	33.1	94.7 94.7	94.7	7.1 7.1	7.1	7.1	13.2 13.4	13.3	13.4	16.0 14.8	15.4	16.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	19.8 19.8	19.8	8.2 8.2	8.2	33.1 33.1	33.1	94.6 94.5	94.6	7.1 7.1	7.1	7.1	13.6 13.4	13.5		16.7 18.3	17.5	
18-Dec-13	Sunny	Moderate	09:01	4.7	Surface	1.0	18.0 18.0	18.0	8.2 8.2	8.2	32.7 32.7	32.7	93.7 93.8	93.8	7.3 7.3	7.3	7.3	14.2 14.3	14.3	14.5	33.5 32.2	32.9	**33.2**
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	18.2 18.1	18.1	8.2 8.2	8.2	32.8 32.7	32.8	94.1 93.9	94.0	7.3 7.3	7.3	7.3	14.6 14.5	14.6		32.7 34.1	33.4	
20-Dec-13	Sunny	Moderate	09:16	4.9	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	32.8 32.8	32.8	94.9 95.0	95.0	7.4 7.4	7.4	7.4	6.6 6.5	6.6	6.7	12.4 11.2	11.8	12.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	17.8 17.8	17.8	8.2 8.2	8.2	32.8 32.9	32.8	94.9 94.9	94.9	7.4 7.4	7.4	7.4	6.8 6.8	6.8		12.8 14.0	13.4	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	11:03	5.3	Surface	1.0	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	95.8 95.8	95.8	7.6 7.6	7.6	7.6	10.4 10.0	10.2	10.9	15.6 16.0	15.8	15.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	17.2 17.2	17.2	8.2 8.2	8.2	32.2 32.2	32.2	95.5 95.6	95.6	7.6 7.6	7.6	7.6	11.5 11.4	11.5		16.6 15.3	16.0	
25-Dec-13	Sunny	Moderate	12:41	5.5	Surface	1.0	17.7 17.7	17.7	8.2 8.2	8.2	32.5 32.5	32.5	96.6 96.5	96.6	7.6 7.6	7.6	7.6	7.7 7.7	7.7	7.8	10.4 10.9	10.7	10.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	17.7 17.7	17.7	8.2 8.2	8.2	32.5 32.5	32.5	96.5 96.5	96.5	7.6 7.6	7.6	7.6	7.9 7.8	7.9		10.8 10.0	10.4	
27-Dec-13	Sunny	Moderate	14:08	4.5	Surface	1.0	18.0 17.9	17.9	8.2 8.2	8.2	33.4 33.4	33.4	100.8 98.8	99.8	7.8 7.7	7.7	7.7	2.3 2.4	2.4	2.4	8.7 9.2	9.0	9.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	17.9 18.0	17.9	8.2 8.2	8.2	33.4 33.4	33.4	99.7 103.4	101.6	7.7 8.0	7.9	7.9	2.3 2.3	2.3		9.5 8.6	9.1	
30-Dec-13	Sunny	Moderate	16:13	4.6	Surface	1.0	17.0 17.0	17.0	8.3 8.3	8.3	33.9 33.9	33.9	101.9 101.3	101.6	8.0 8.0	8.0	8.0	2.5 2.5	2.5	2.5	6.2 6.8	6.5	6.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	17.0 17.0	17.0	8.3 8.3	8.3	33.9 33.9	33.9	101.4 102.9	102.2	8.0 8.1	8.1	8.1	2.4 2.5	2.5		5.6 6.7	6.2	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	11:11	4.3	Surface	1.0	20.5 20.5	20.5	8.3 8.3	8.3	32.9 32.9	32.9	97.8 98.0	97.9	7.3 7.3	7.3	7.3	4.5 4.3	4.4	4.4	9.6 9.9	9.8	9.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	20.3 20.4	20.4	8.3 8.3	8.3	32.9 32.9	32.9	97.7 97.8	97.8	7.3 7.3	7.3	7.3	4.3 4.4	4.4		9.4 9.0	9.2	
4-Dec-13	Sunny	Moderate	12:44	5.2	Surface	1.0	20.8 20.8	20.8	8.2 8.2	8.2	31.6 31.7	31.6	96.0 96.0	96.0	7.1 7.1	7.1	7.1	4.0 4.4	4.2	4.3	8.5 7.7	8.1	9.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	20.8 20.7	20.7	8.2 8.2	8.2	31.9 32.0	31.9	95.8 95.8	95.8	7.1 7.1	7.1	7.1	4.1 4.5	4.3		9.0 11.2	10.1	
6-Dec-13	Sunny	Moderate	14:26	5.5	Surface	1.0	20.4 20.4	20.4	8.2 8.2	8.2	31.3 31.3	31.3	94.8 94.7	94.8	7.1 7.1	7.1	7.1	5.1 5.3	5.2	5.2	11.1 10.5	10.8	12.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	20.4 20.4	20.4	8.2 8.2	8.2	31.5 31.5	31.5	94.6 94.6	94.6	7.1 7.1	7.1	7.1	5.2 5.1	5.2		13.5 13.5	13.5	
9-Dec-13	Sunny	Moderate	17:48	4.4	Surface	1.0	20.5 20.5	20.5	8.1 8.1	8.1	29.7 29.5	29.6	93.0 92.6	92.8	7.0 7.0	7.0	7.0	2.6 2.6	2.6	2.7	6.3 7.3	6.8	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	20.4 20.4	20.4	8.1 8.1	8.1	30.3 30.2	30.3	93.2 92.5	92.9	7.0 7.0	7.0	7.0	2.7 2.7	2.7		6.0 6.8	6.4	
11-Dec-13	Fine	Moderate	08:53	5.6	Surface	1.0	20.2 20.2	20.2	8.1 8.1	8.1	31.2 31.3	31.3	94.5 94.5	94.5	7.1 7.1	7.1	7.1	4.4 4.5	4.5	4.5	12.1 12.3	12.2	13.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	20.2 20.2	20.2	8.1 8.1	8.1	31.3 31.3	31.3	94.2 94.3	94.3	7.1 7.1	7.1	7.1	4.5 4.4	4.5		15.2 14.8	15.0	
13-Dec-13	Cloudy	Moderate	11:00	5.4	Surface	1.0	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	94.7 94.7	94.7	7.1 7.1	7.1	7.1	4.6 4.5	4.6	4.4	9.6 9.8	9.7	10.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	20.0 20.0	20.0	8.1 8.1	8.1	32.3 32.3	32.3	94.4 94.3	94.4	7.1 7.1	7.1	7.1	4.2 4.0	4.1		10.0 11.0	10.5	
16-Dec-13	Rainy	Moderate	11:18	4.0	Surface	1.0	19.7 19.7	19.7	8.2 8.2	8.2	33.0 33.0	33.0	94.6 94.6	94.6	7.1 7.1	7.1	7.1	7.6 7.4	7.5	7.5	12.5 12.3	12.4	12.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	19.7 19.7	19.7	8.2 8.2	8.2	33.0 33.0	33.0	94.6 94.5	94.6	7.1 7.1	7.1	7.1	7.4 7.4	7.4		11.8 11.4	11.6	
18-Dec-13	Sunny	Moderate	12:22	4.1	Surface	1.0	18.8 18.8	18.8	8.2 8.2	8.2	32.9 32.9	32.9	94.7 95.0	94.9	7.3 7.3	7.3	7.3	8.0 8.1	8.1	8.2	14.3 15.3	14.8	15.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	18.8 18.8	18.8	8.2 8.2	8.2	32.9 32.9	32.9	95.1 94.8	95.0	7.3 7.3	7.3	7.3	8.3 8.1	8.2		15.0 16.1	15.6	
20-Dec-13	Sunny	Moderate	13:31	4.4	Surface	1.0	17.9 17.9	17.9	8.2 8.2	8.2	31.5 31.5	31.5	96.2 96.2	96.2	7.6 7.6	7.6	7.6	3.2 3.2	3.2	3.2	6.1 6.0	6.1	5.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	17.9 17.9	17.9	8.2 8.2	8.2	31.5 31.5	31.5	96.1 96.2	96.2	7.6 7.6	7.6	7.6	3.2 3.1	3.2		4.6 4.6	4.6	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	15:17	5.5	Surface	1.0	17.6 17.6	17.6	8.3 8.3	8.3	30.3 30.3	30.3	97.4 97.5	97.5	7.8 7.8	7.8	7.8	2.6 2.8	2.7	3.0	7.1 7.6	7.4	7.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	17.6 17.6	17.6	8.3 8.3	8.3	31.4 31.5	31.5	97.4 97.3	97.4	7.7 7.7	7.7	7.7	3.4 3.1	3.3		6.8 7.0	6.9	
25-Dec-13	Sunny	Moderate	17:31	5.5	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	32.3 32.4	32.4	97.3 97.2	97.3	7.6 7.6	7.6	7.6	4.5 4.4	4.5	4.7	7.4 6.6	7.0	7.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	17.8 17.8	17.8	8.2 8.2	8.2	32.4 32.4	32.4	97.0 97.1	97.1	7.6 7.6	7.6	7.6	4.9 4.7	4.8		7.2 7.3	7.3	
27-Dec-13	Sunny	Moderate	08:37	4.3	Surface	1.0	17.8 17.7	17.7	8.1 8.1	8.1	33.3 33.3	33.3	94.7 94.7	94.7	7.4 7.4	7.4	7.4	1.9 2.0	2.0	2.0	5.7 6.6	6.2	9.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	17.8 17.8	17.8	8.1 8.1	8.1	33.4 33.4	33.4	95.0 94.9	95.0	7.4 7.4	7.4	7.4	1.9 1.9	1.9		12.8 12.3	12.6	
30-Dec-13	Sunny	Moderate	12:32	4.2	Surface	1.0	16.9 16.9	16.9	8.2 8.2	8.2	33.9 33.9	33.9	99.6 99.4	99.5	7.9 7.9	7.9	7.9	2.4 2.5	2.5	2.6	7.6 9.2	8.4	8.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	16.9 16.9	16.9	8.2 8.2	8.2	33.9 33.9	33.9	99.4 99.3	99.4	7.8 7.8	7.8	7.8	2.6 2.5	2.6		9.6 7.9	8.8	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	07:48	4.3	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	33.0 33.0	33.0	96.5 96.5	96.5	7.2 7.2	7.2	7.2	12.4 12.5	12.5	12.5	16.5 16.3	16.4	18.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	20.3 20.3	20.3	8.2 8.2	8.2	33.0 33.0	33.0	96.5 96.5	96.5	7.2 7.2	7.2	7.2	12.2 12.6	12.4		19.9 20.4	20.2	
4-Dec-13	Sunny	Moderate	09:10	4.8	Surface	1.0	20.5 20.5	20.5	8.2 8.2	8.2	32.6 32.6	32.6	95.9 96.0	96.0	7.1 7.1	7.1	7.1	16.1 16.0	16.1	16.2	11.2 10.3	10.8	12.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	20.5 20.5	20.5	8.2 8.2	8.2	32.6 32.6	32.6	95.9 95.8	95.9	7.1 7.1	7.1	7.1	16.2 16.1	16.2		14.8 14.0	14.4	
6-Dec-13	Sunny	Moderate	11:18	5.6	Surface	1.0	20.3 20.2	20.3	8.2 8.2	8.2	32.2 32.2	32.2	94.8 94.5	94.7	7.1 7.1	7.1	7.1	11.4 12.1	11.8	12.8	12.5 11.5	12.0	12.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	20.2 20.2	20.2	8.2 8.2	8.2	32.3 32.3	32.3	94.2 94.4	94.3	7.1 7.1	7.1	7.1	13.5 14.0	13.8		11.8 11.9	11.9	
9-Dec-13	Sunny	Moderate	14:01	4.2	Surface	1.0	20.6 20.6	20.6	8.1 8.1	8.1	30.8 30.8	30.8	94.5 94.6	94.6	7.1 7.1	7.1	7.1	5.1 5.3	5.2	5.4	3.4 4.3	3.9	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	20.5 20.3	20.4	8.1 8.1	8.1	30.9 30.9	30.9	94.3 93.8	94.1	7.1 7.1	7.1	7.1	5.5 5.6	5.6		5.8 5.5	5.7	
11-Dec-13	Sunny	Moderate	13:33	5.7	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	31.1 31.1	31.1	94.0 94.3	94.2	7.1 7.1	7.1	7.1	5.9 5.6	5.8	6.6	16.9 17.5	17.2	17.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	20.3 20.3	20.3	8.2 8.2	8.2	31.2 31.2	31.2	93.9 93.1	93.5	7.1 7.0	7.0	7.0	7.1 7.7	7.4		18.2 18.5	18.4	
13-Dec-13	Fine	Moderate	14:47	5.6	Surface	1.0	20.1 20.1	20.1	8.1 8.1	8.1	32.3 32.3	32.3	97.8 98.2	98.0	7.3 7.4	7.4	7.4	2.9 3.2	3.1	3.4	5.0 5.3	5.2	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	20.1 20.1	20.1	8.1 8.1	8.1	32.4 32.4	32.4	97.7 98.0	97.9	7.3 7.4	7.3	7.3	3.5 3.7	3.6		5.9 7.7	6.8	
16-Dec-13	Rainy	Moderate	08:17	4.3	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	33.2 33.2	33.2	95.4 95.3	95.4	7.2 7.2	7.2	7.2	7.7 7.8	7.8	7.7	13.6 12.4	13.0	13.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	19.8 19.8	19.8	8.2 8.2	8.2	33.2 33.2	33.2	95.4 95.2	95.3	7.2 7.2	7.2	7.2	7.4 7.7	7.6		13.6 12.4	13.0	
18-Dec-13	Sunny	Moderate	09:49	4.2	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	32.8 32.8	32.8	94.6 94.6	94.6	7.3 7.3	7.3	7.3	11.3 11.0	11.2	11.2	20.0 19.9	20.0	20.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	18.3 18.3	18.3	8.2 8.2	8.2	32.8 32.8	32.8	94.5 94.5	94.5	7.3 7.3	7.3	7.3	11.2 11.0	11.1		20.0 21.8	20.9	
20-Dec-13	Sunny	Moderate	10:23	4.4	Surface	1.0	17.5 17.5	17.5	8.2 8.2	8.2	32.5 32.5	32.5	96.0 95.9	96.0	7.6 7.6	7.6	7.6	8.5 8.4	8.5	8.6	16.0 16.3	16.2	16.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	17.5 17.5	17.5	8.2 8.2	8.2	32.5 32.5	32.5	95.9 95.8	95.9	7.5 7.5	7.5	7.5	8.6 8.5	8.6		16.6 15.1	15.9	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	11:59	5.7	Surface	1.0	17.3 17.3	17.3	8.2 8.2	8.2	32.0 31.9	31.9	96.9 96.9	96.9	7.7 7.7	7.7	7.7	3.5 3.3	3.4	4.7	7.0 7.1	7.1	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	17.3 17.3	17.3	8.2 8.2	8.2	32.2 32.2	32.2	96.6 96.6	96.6	7.7 7.7	7.7	7.7	6.3 5.6	6.0		5.6 6.1	5.9	
25-Dec-13	Sunny	Moderate	13:23	5.5	Surface	1.0	17.9 17.9	17.9	8.2 8.2	8.2	32.6 32.6	32.6	96.0 96.1	96.1	7.5 7.5	7.5	7.5	4.0 4.0	4.0	4.1	7.9 7.0	7.5	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	17.9 17.9	17.9	8.2 8.2	8.2	32.6 32.6	32.6	95.9 96.0	96.0	7.5 7.5	7.5	7.5	4.1 4.2	4.2		7.5 6.4	7.0	
27-Dec-13	Sunny	Moderate	12:59	4.4	Surface	1.0	17.7 17.7	17.7	8.2 8.2	8.2	33.2 33.2	33.2	98.5 97.7	98.1	7.7 7.6	7.7	7.7	2.4 2.5	2.5	2.5	5.4 5.1	5.3	8.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	17.8 17.8	17.8	8.2 8.2	8.2	33.3 33.3	33.3	97.9 98.7	98.3	7.6 7.7	7.7	7.7	2.5 2.5	2.5		11.5 12.2	11.9	
30-Dec-13	Sunny	Moderate	15:19	4.4	Surface	1.0	16.9 16.9	16.9	8.3 8.3	8.3	34.0 34.0	34.0	101.7 101.5	101.6	8.0 8.0	8.0	8.0	2.2 2.2	2.2	2.2	5.5 6.4	6.0	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	16.9 16.9	16.9	8.3 8.3	8.3	34.0 34.0	34.0	101.5 101.6	101.6	8.0 8.0	8.0	8.0	2.1 2.2	2.2		7.1 8.9	8.0	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	12:36	4.2	Surface	1.0	20.5 20.5	20.5	8.2 8.2	8.2	32.9 32.9	32.9	96.9 96.9	96.9	7.2 7.2	7.2	7.2	3.6 3.7	3.7	3.7	9.8 8.5	9.2	9.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	20.5 20.5	20.5	8.2 8.2	8.2	32.9 32.9	32.9	96.8 96.8	96.8	7.2 7.2	7.2	7.2	3.6 3.7	3.7		8.5 9.8	9.2	
4-Dec-13	Sunny	Moderate	13:45	5.1	Surface	1.0	20.8 20.8	20.8	8.2 8.2	8.2	32.4 32.4	32.4	97.4 97.5	97.5	7.2 7.2	7.2	7.2	3.7 3.5	3.6	3.7	7.0 8.6	7.8	8.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	20.7 20.7	20.7	8.2 8.2	8.2	32.4 32.5	32.5	97.0 97.0	97.0	7.2 7.2	7.2	7.2	3.9 3.6	3.8		8.0 8.4	8.2	
6-Dec-13	Sunny	Moderate	15:50	5.5	Surface	1.0	20.3 20.4	20.3	8.2 8.2	8.2	32.2 32.2	32.2	94.7 95.1	94.9	7.1 7.1	7.1	7.1	5.2 5.0	5.1	5.2	10.8 11.5	11.2	11.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	20.3 20.4	20.3	8.2 8.2	8.2	32.2 32.2	32.2	94.4 94.8	94.6	7.1 7.1	7.1	7.1	5.1 5.2	5.2		12.0 11.7	11.9	
9-Dec-13	Sunny	Moderate	19:19	4.4	Surface	1.0	20.5 20.5	20.5	8.1 8.1	8.1	30.5 30.4	30.4	94.4 94.4	94.4	7.1 7.1	7.1	7.1	2.9 2.7	2.8	2.9	5.1 6.3	5.7	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	20.4 20.4	20.4	8.1 8.1	8.1	31.2 31.0	31.1	94.0 94.2	94.1	7.1 7.1	7.1	7.1	2.8 2.9	2.9		6.0 6.4	6.2	
11-Dec-13	Fine	Moderate	07:22	5.4	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	31.6 31.6	31.6	98.0 94.7	96.4	7.4 7.1	7.2	7.2	4.3 4.2	4.3	4.5	12.0 11.2	11.6	11.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	20.4 20.4	20.4	8.1 8.1	8.1	31.8 31.8	31.8	100.7 95.5	98.1	7.5 7.2	7.3	7.3	4.8 4.4	4.6		10.7 11.9	11.3	
13-Dec-13	Cloudy	Moderate	09:35	5.4	Surface	1.0	20.0 20.0	20.0	8.1 8.1	8.1	32.2 32.1	32.2	95.8 94.7	95.3	7.2 7.1	7.2	7.2	5.5 5.4	5.5	5.8	8.3 7.8	8.1	8.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	20.2 20.2	20.2	8.1 8.1	8.1	32.4 32.4	32.4	97.3 95.4	96.4	7.3 7.2	7.2	7.2	6.1 5.9	6.0		9.9 7.7	8.8	
16-Dec-13	Rainy	Moderate	12:40	4.2	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	33.0 33.0	33.0	94.0 94.1	94.1	7.1 7.1	7.1	7.1	7.1 7.1	7.1	7.2	11.2 10.8	11.0	11.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	19.8 19.8	19.8	8.2 8.2	8.2	33.0 33.0	33.0	94.0 94.0	94.0	7.1 7.1	7.1	7.1	7.3 7.3	7.3		12.8 11.2	12.0	
18-Dec-13	Sunny	Moderate	13:46	4.3	Surface	1.0	18.6 18.5	18.6	8.2 8.2	8.2	32.8 32.8	32.8	94.6 94.7	94.7	7.3 7.3	7.3	7.3	9.5 9.5	9.5	9.4	15.0 15.2	15.1	17.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	18.5 18.6	18.6	8.2 8.2	8.2	32.8 32.9	32.9	94.7 94.7	94.7	7.3 7.3	7.3	7.3	9.1 9.4	9.3		19.0 19.1	19.1	
20-Dec-13	Sunny	Moderate	15:00	4.6	Surface	1.0	18.0 18.0	18.0	8.2 8.2	8.2	32.4 32.4	32.4	96.0 96.0	96.0	7.5 7.5	7.5	7.5	5.1 5.1	5.1	5.2	9.4 9.9	9.7	9.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	18.0 18.0	18.0	8.2 8.2	8.2	32.6 32.6	32.6	95.9 95.9	95.9	7.5 7.5	7.5	7.5	5.2 5.3	5.3		8.6 8.7	8.7	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	16:44	5.6	Surface	1.0	17.5 17.5	17.5	8.3 8.3	8.3	32.1 32.1	32.1	96.2 96.1	96.2	7.6 7.6	7.6	7.6	6.8 7.1	7.0	7.6	11.2 12.5	11.9	12.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	17.5 17.5	17.5	8.2 8.3	8.3	32.2 32.2	32.2	95.4 96.1	95.8	7.5 7.6	7.5	7.5	8.3 8.0	8.2		13.3 12.6	13.0	
25-Dec-13	Sunny	Moderate	18:51	5.6	Surface	1.0	17.8 17.8	17.8	8.2 8.2	8.2	32.5 32.4	32.5	96.3 96.3	96.3	7.5 7.5	7.5	7.5	6.4 6.6	6.5	6.6	10.9 11.4	11.2	11.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	18.0 18.0	18.0	8.2 8.2	8.2	32.6 32.7	32.6	96.6 96.5	96.6	7.5 7.5	7.5	7.5	6.6 6.7	6.7		10.8 11.3	11.1	
27-Dec-13	Sunny	Moderate	07:08	4.2	Surface	1.0	17.5 17.5	17.5	8.0 8.0	8.0	33.0 33.0	33.0	99.1 97.5	98.3	7.8 7.7	7.7	7.7	3.3 3.2	3.3	3.4	7.4 7.2	7.3	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	17.5 17.5	17.5	7.9 8.0	8.0	33.0 33.1	33.1	101.5 98.3	99.9	8.0 7.7	7.8	7.8	3.4 3.4	3.4		7.3 7.3	7.3	
30-Dec-13	Sunny	Moderate	11:02	4.4	Surface	1.0	17.0 17.0	17.0	8.2 8.2	8.2	34.0 34.0	34.0	100.3 99.7	100.0	7.9 7.9	7.9	7.9	2.6 2.5	2.6	2.8	7.4 9.1	8.3	8.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	16.8 16.9	16.9	8.2 8.2	8.2	33.9 33.9	33.9	100.4 99.6	100.0	7.9 7.9	7.9	7.9	3.0 2.8	2.9		9.3 8.8	9.1	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	06:19	4.2	Surface	1.0	20.5 20.5	20.5	8.2 8.2	8.2	33.0 33.0	33.0	100.0 98.3	99.2	7.4 7.3	7.4	7.4	6.6 6.6	6.6	7.1	10.8 11.6	11.2	11.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	20.5 20.5	20.5	8.2 8.2	8.2	33.0 33.0	33.0	99.0 101.9	100.5	7.3 7.6	7.4	7.4	7.4 7.5	7.5		11.6 11.6	11.6	
4-Dec-13	Sunny	Moderate	08:08	5.0	Surface	1.0	20.6 20.6	20.6	8.2 8.2	8.2	32.4 32.4	32.4	95.9 97.4	96.7	7.1 7.2	7.2	7.2	11.0 11.1	11.1	11.3	19.3 20.2	19.8	19.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	20.5 20.5	20.5	8.2 8.2	8.2	32.5 32.5	32.5	95.8 96.5	96.2	7.1 7.2	7.1	7.1	11.3 11.5	11.4		20.3 19.5	19.9	
6-Dec-13	Sunny	Moderate	09:49	5.7	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	32.3 32.3	32.3	95.9 97.9	96.9	7.2 7.3	7.3	7.3	9.5 10.0	9.8	11.1	12.7 12.7	12.7	13.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	20.2 20.2	20.2	8.2 8.2	8.2	32.3 32.3	32.3	99.8 96.1	98.0	7.5 7.2	7.3	7.3	12.4 12.2	12.3		13.0 13.9	13.5	
9-Dec-13	Sunny	Moderate	12:31	4.2	Surface	1.0	20.3 20.3	20.3	8.1 8.1	8.1	31.6 31.6	31.6	97.5 96.0	96.8	7.3 7.2	7.3	7.3	7.8 7.8	7.8	8.1	11.7 12.1	11.9	11.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	20.2 20.3	20.3	8.1 8.1	8.1	31.7 31.6	31.6	96.6 98.4	97.5	7.3 7.4	7.3	7.3	8.2 8.4	8.3		11.8 10.2	11.0	
11-Dec-13	Sunny	Moderate	15:00	5.5	Surface	1.0	20.4 20.4	20.4	8.1 8.1	8.1	31.6 31.6	31.6	92.5 92.5	92.5	6.9 6.9	6.9	6.9	5.3 5.3	5.3	5.3	8.2 8.5	8.4	9.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	20.4 20.4	20.4	8.1 8.1	8.1	31.6 31.7	31.7	92.4 92.4	92.4	6.9 6.9	6.9	6.9	5.3 5.1	5.2		9.3 10.1	9.7	
13-Dec-13	Fine	Moderate	16:19	5.7	Surface	1.0	20.2 20.2	20.2	8.1 8.1	8.1	32.3 32.3	32.3	92.9 92.8	92.9	7.0 7.0	7.0	7.0	6.4 6.6	6.5	6.6	8.8 9.9	9.4	9.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	20.2 20.2	20.2	8.1 8.1	8.1	32.3 32.3	32.3	92.7 92.8	92.8	6.9 6.9	6.9	6.9	6.7 6.7	6.7		9.1 9.9	9.5	
16-Dec-13	Rainy	Moderate	06:46	4.2	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	33.3 33.3	33.3	97.0 97.8	97.4	7.3 7.3	7.3	7.3	5.0 5.0	5.0	5.1	5.3 6.5	5.9	6.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	19.8 19.8	19.8	8.2 8.2	8.2	33.3 33.3	33.3	97.3 99.2	98.3	7.3 7.4	7.4	7.4	5.2 5.1	5.2		5.9 6.9	6.4	
18-Dec-13	Sunny	Moderate	08:32	4.3	Surface	1.0	18.6 18.6	18.6	8.2 8.1	8.2	33.0 33.0	33.0	97.3 100.3	98.8	7.5 7.7	7.6	7.6	7.3 7.8	7.6	7.5	12.9 11.6	12.3	13.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	18.6 18.6	18.6	8.2 8.1	8.2	33.0 33.0	33.0	104.1 98.5	101.3	8.0 7.6	7.8	7.8	7.4 7.4	7.4		13.9 14.3	14.1	
20-Dec-13	Sunny	Moderate	08:53	4.3	Surface	1.0	17.6 17.6	17.6	8.1 8.1	8.1	32.8 32.8	32.8	97.0 98.1	97.6	7.6 7.7	7.7	7.7	8.8 8.7	8.8	8.8	14.1 14.0	14.1	14.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	17.6 17.6	17.6	8.1 8.1	8.1	32.8 32.8	32.8	97.4 98.9	98.2	7.6 7.8	7.7	7.7	8.6 9.0	8.8		15.5 14.7	15.1	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	10:35	5.8	Surface	1.0	17.5 17.4	17.5	8.2 8.3	8.3	32.5 32.4	32.4	96.7 98.4	97.6	7.6 7.8	7.7	7.7	6.1 6.4	6.3	6.9	10.8 10.3	10.6	10.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.8	17.5 17.5	17.5	8.3 8.2	8.3	32.5 32.5	32.5	101.6 97.1	99.4	8.0 7.6	7.8	7.8	7.5 7.2	7.4		9.5 10.5	10.0	
25-Dec-13	Sunny	Moderate	12:06	5.5	Surface	1.0	18.1 18.1	18.1	8.2 8.2	8.2	32.8 32.8	32.8	96.0 95.4	95.7	7.5 7.4	7.4	7.4	2.1 2.2	2.2	2.5	4.6 4.5	4.6	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	18.2 18.1	18.1	8.2 8.2	8.2	32.9 32.8	32.9	94.7 95.0	94.9	7.3 7.4	7.4	7.4	2.8 2.6	2.7		4.3 4.6	4.5	
27-Dec-13	Sunny	Moderate	14:36	4.4	Surface	1.0	18.5 18.6	18.6	8.2 8.2	8.2	33.9 33.9	33.9	94.7 94.4	94.6	7.3 7.2	7.2	7.2	1.9 1.9	1.9	2.0	4.0 5.5	4.8	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	18.5 18.6	18.6	8.2 8.2	8.2	33.9 33.9	33.9	94.8 94.5	94.7	7.3 7.2	7.2	7.2	2.0 2.1	2.1		6.7 4.7	5.7	
30-Dec-13	Sunny	Moderate	16:42	4.4	Surface	1.0	17.2 17.2	17.2	8.3 8.3	8.3	33.9 33.9	33.9	99.4 99.4	99.4	7.8 7.8	7.8	7.8	2.7 2.7	2.7	2.7	8.9 9.0	9.0	9.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	17.2 17.2	17.2	8.3 8.3	8.3	34.0 34.0	34.0	99.3 99.2	99.3	7.8 7.8	7.8	7.8	2.7 2.7	2.7		9.9 9.7	9.8	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10A - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	12:43	7.0	Surface	1.0	21.3 21.3	21.3	7.9 7.9	7.9	33.1 33.1	33.1	93.5 92.0	92.8	6.8 6.7	6.8	6.8	5.4 5.2	5.3	5.2	10.2 12.5	11.4	11.5
					Middle	3.5	21.3 21.3	21.3	7.9 7.9	7.9	33.1 33.1	33.1	94.7 92.2	93.5	6.9 6.7	6.8		5.2 5.3	5.3		11.6 11.9	11.8	
					Bottom	6.0	21.3 21.3	21.3	7.9 7.9	7.9	33.1 33.1	33.1	92.6 96.9	94.8	6.8 7.1	6.9	6.9	5.1 4.6	4.9		11.3 11.4	11.4	
4-Dec-13	Sunny	Moderate	14:43	6.3	Surface	1.0	21.1 21.1	21.1	7.9 8.0	8.0	32.8 32.8	32.8	92.0 91.6	91.8	6.8 6.7	6.7	6.7	7.4 7.4	7.4	7.3	8.1 8.8	8.5	10.4
					Middle	3.2	21.1 21.1	21.1	8.0 8.0	8.0	32.8 32.8	32.8	91.5 92.2	91.9	6.7 6.8	6.7		7.3 7.3	7.3		10.6 10.2	10.4	
					Bottom	5.3	21.1 21.1	21.1	8.0 7.9	8.0	32.9 32.8	32.9	92.5 91.4	92.0	6.8 6.7	6.8	6.8	7.3 7.3	7.3		12.7 11.6	12.2	
6-Dec-13	Sunny	Moderate	16:23	6.6	Surface	1.0	20.7 20.7	20.7	7.9 7.9	7.9	32.5 32.5	32.5	92.5 91.6	92.1	6.9 6.8	6.8	6.8	6.5 6.5	6.5	6.6	7.8 9.1	8.5	10.1
					Middle	3.3	20.7 20.7	20.7	7.9 7.9	7.9	32.5 32.6	32.6	92.6 91.6	92.1	6.9 6.8	6.8		6.5 6.7	6.6		9.6 9.2	9.4	
					Bottom	5.6	20.7 20.7	20.7	7.9 7.9	7.9	32.7 32.6	32.6	93.6 92.0	92.8	6.9 6.8	6.9	6.9	6.5 6.7	6.6		11.9 12.6	12.3	
9-Dec-13	Sunny	Moderate	19:08	6.5	Surface	1.0	20.6 20.6	20.6	8.0 8.0	8.0	32.3 32.4	32.4	91.7 91.4	91.6	6.8 6.8	6.8	6.8	3.4 3.4	3.4	3.6	7.4 6.3	6.9	7.6
					Middle	3.3	20.6 20.6	20.6	8.0 8.0	8.0	32.3 32.3	32.3	91.3 91.8	91.6	6.8 6.8	6.8		3.3 3.5	3.4		7.6 7.1	7.4	
					Bottom	5.5	20.6 20.6	20.6	8.0 8.0	8.0	32.4 32.4	32.4	91.2 92.4	91.8	6.8 6.9	6.8	6.8	4.0 3.7	3.9		8.5 8.2	8.4	
11-Dec-13	Fine	Moderate	06:49	6.4	Surface	1.0	20.7 20.7	20.7	7.9 7.9	7.9	32.6 32.6	32.6	91.0 91.9	91.5	6.7 6.8	6.8	6.8	2.3 2.2	2.3	2.3	7.5 8.9	8.2	10.2
					Middle	3.2	20.7 20.7	20.7	7.9 7.9	7.9	32.6 32.7	32.7	92.3 91.1	91.7	6.8 6.8	6.8		2.2 2.2	2.2		11.5 10.3	10.9	
					Bottom	5.4	20.7 20.7	20.7	7.9 7.9	7.9	32.7 32.6	32.7	91.1 93.7	92.4	6.8 6.9	6.8	6.8	2.2 2.3	2.3		12.1 11.0	11.6	
13-Dec-13	Cloudy	Moderate	09:04	6.6	Surface	1.0	20.6 20.6	20.6	7.9 7.9	7.9	33.0 33.0	33.0	90.9 90.3	90.6	6.7 6.7	6.7	6.7	2.8 2.8	2.8	2.9	5.0 3.8	4.4	5.4
					Middle	3.3	20.6 20.6	20.6	7.9 7.9	7.9	33.0 33.0	33.0	91.3 90.4	90.9	6.8 6.7	6.7		2.9 2.8	2.9		6.3 5.7	6.0	
					Bottom	5.6	20.6 20.6	20.6	7.9 7.9	7.9	33.1 33.1	33.1	90.5 92.4	91.5	6.7 6.8	6.8	6.8	2.9 3.0	3.0		5.9 5.8	5.9	
16-Dec-13	Rainy	Moderate	12:46	6.2	Surface	1.0	20.0 20.0	20.0	8.0 8.0	8.0	33.0 33.0	33.0	94.5 98.6	96.6	7.3 7.7	7.5	7.5	5.3 5.2	5.3	5.3	7.3 7.6	7.5	7.8
					Middle	3.1	20.0 20.0	20.0	8.0 8.0	8.0	33.0 33.0	33.0	94.4 95.1	94.8	7.3 7.4	7.4		5.4 5.2	5.3		6.5 6.7	6.6	
					Bottom	5.2	20.0 20.0	20.0	8.0 8.0	8.0	33.0 33.0	33.0	94.8 94.3	94.6	7.4 7.3	7.3	7.3	5.3 5.4	5.4		9.3 9.0	9.2	
18-Dec-13	Sunny	Moderate	14:01	6.5	Surface	1.0	19.7 19.6	19.7	8.0 8.0	8.0	33.2 33.2	33.2	91.3 91.5	91.4	6.9 6.9	6.9	6.9	5.1 5.0	5.1	5.6	7.0 7.3	7.2	7.7
					Middle	3.3	19.7 19.7	19.7	8.0 8.0	8.0	33.2 33.2	33.2	91.6 91.3	91.5	6.9 6.9	6.9		5.5 5.8	5.7		7.9 7.5	7.7	
					Bottom	5.5	19.7 19.7	19.7	8.0 8.0	8.0	33.2 33.2	33.2	91.9 91.2	91.6	6.9 6.9	6.9	6.9	5.8 6.0	5.9		7.8 8.5	8.2	
20-Dec-13	Sunny	Moderate	14:59	6.4	Surface	1.0	19.6 19.6	19.6	8.0 8.0	8.0	33.6 33.7	33.7	95.3 93.9	94.6	7.2 7.1	7.1	7.2	4.0 3.7	3.9	4.6	6.2 6.4	6.3	6.0
					Middle	3.2	19.6 19.5	19.6	8.0 8.0	8.0	33.6 33.7	33.7	96.5 93.8	95.2	7.3 7.1	7.2		4.8 4.6	4.7		6.7 5.5	6.1	
					Bottom	5.4	19.5 19.6	19.6	8.0 8.0	8.0	33.7 33.6	33.7	94.0 98.6	96.3	7.1 7.4	7.2	7.2	5.0 5.4	5.2		5.8 5.6	5.7	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10A - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	17:09	6.4	Surface	1.0	19.0 19.0	19.0	8.0 8.0	8.0	33.4 33.4	33.4	92.9 94.6	93.8	7.1 7.2	7.1	7.2	4.1 4.2	4.2	4.3	7.1 6.8	7.0	6.8
					Middle	3.2	19.0 19.0	19.0	8.0 8.0	8.0	33.4 33.4	33.4	93.1 96.2	94.7	7.1 7.3	7.2		4.2 4.4	4.3		6.7 6.4	6.6	
					Bottom	5.4	19.0 19.0	19.0	8.0 8.0	8.0	33.4 33.4	33.4	98.3 93.5	95.9	7.5 7.1	7.3	7.3	4.3 4.2	4.3		7.4 6.2	6.8	
25-Dec-13	Sunny	Moderate	19:23	6.5	Surface	1.0	18.7 18.8	18.8	8.0 8.0	8.0	33.6 33.6	33.6	93.6 94.2	93.9	7.2 7.2	7.2	7.2	2.8 2.9	2.9	2.9	4.6 4.9	4.8	4.4
					Middle	3.3	18.8 18.8	18.8	8.0 8.0	8.0	33.6 33.6	33.6	93.6 94.7	94.2	7.2 7.2	7.2		2.9 2.9	2.9		3.6 4.5	4.1	
					Bottom	5.5	18.8 18.8	18.8	8.0 8.0	8.0	33.6 33.6	33.6	93.9 96.4	95.2	7.2 7.4	7.3	7.3	3.0 3.0	3.0		4.8 3.9	4.4	
27-Dec-13	Sunny	Moderate	06:26	6.3	Surface	1.0	18.6 18.6	18.6	8.0 8.0	8.0	33.7 33.7	33.7	99.6 94.5	97.1	7.6 7.2	7.4	7.5	2.0 1.9	2.0	2.1	4.6 4.2	4.4	5.0
					Middle	3.2	18.6 18.6	18.6	8.0 8.0	8.0	33.7 33.7	33.7	102.8 95.4	99.1	7.9 7.3	7.6		2.0 2.1	2.1		4.5 4.8	4.7	
					Bottom	5.3	18.5 18.6	18.6	8.0 8.0	8.0	33.7 33.7	33.7	95.8 96.5	96.2	7.3 7.4	7.4	7.4	2.2 2.0	2.1		6.3 5.3	5.8	
30-Dec-13	Sunny	Moderate	10:11	6.8	Surface	1.0	17.8 17.8	17.8	8.0 8.0	8.0	33.6 33.6	33.6	92.8 94.2	93.5	7.2 7.3	7.3	7.3	3.2 3.3	3.3	3.4	6.2 7.3	6.8	7.5
					Middle	3.4	17.8 17.8	17.8	8.0 8.0	8.0	33.6 33.6	33.6	92.9 95.8	94.4	7.2 7.5	7.3		3.4 3.5	3.5		7.0 7.9	7.5	
					Bottom	5.8	17.8 17.7	17.8	8.0 8.0	8.0	33.7 33.6	33.6	93.1 98.2	95.7	7.2 7.6	7.4	7.4	3.3 3.4	3.4		8.3 7.8	8.1	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10A - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	05:36	6.8	Surface	1.0	21.3 21.3	21.3	7.9 7.9	7.9	33.0 33.0	33.0	94.2 92.1	93.2	6.9 6.7	6.8	6.9	8.4 7.5	8.0	8.4	10.3 10.6	10.5	12.6
					Middle	3.4	21.3 21.3	21.3	7.9 7.9	7.9	33.0 33.0	33.0	96.8 92.3	94.6	7.1 6.8	6.9		8.8 8.3	8.6		13.1 14.2	13.7	
					Bottom	5.8	21.3 21.3	21.3	7.9 7.9	7.9	32.9 33.0	33.0	99.7 92.8	96.3	7.3 6.8	7.0	7.0	8.7 8.2	8.5		14.4 12.7	13.6	
4-Dec-13	Sunny	Moderate	07:46	6.5	Surface	1.0	20.8 20.8	20.8	8.0 8.0	8.0	32.7 32.7	32.7	93.9 93.5	93.7	6.9 6.9	6.9	6.9	18.5 17.6	18.1	18.0	18.5 18.6	18.6	20.7
					Middle	3.3	20.9 20.9	20.9	8.0 8.0	8.0	32.7 32.7	32.7	93.4 94.1	93.8	6.9 6.9	6.9		18.2 17.5	17.9		19.8 19.9	19.9	
					Bottom	5.5	20.9 20.9	20.9	8.0 8.0	8.0	32.8 32.7	32.7	93.6 96.9	95.3	6.9 7.2	7.0	7.0	18.1 18.1	18.1		22.8 24.2	23.5	
6-Dec-13	Sunny	Moderate	09:20	6.4	Surface	1.0	20.6 20.6	20.6	7.9 7.9	7.9	32.4 32.4	32.4	91.7 92.4	92.1	6.8 6.9	6.8	6.8	21.5 20.2	20.9	21.4	25.8 25.2	25.5	**28.2**
					Middle	3.2	20.6 20.6	20.6	7.9 7.9	7.9	32.4 32.5	32.4	92.6 91.8	92.2	6.9 6.8	6.8		21.7 21.6	21.7		30.1 29.7	29.9	
					Bottom	5.4	20.6 20.6	20.6	7.9 7.9	7.9	32.4 32.4	32.4	91.8 93.4	92.6	6.8 6.9	6.9	6.9	21.0 22.1	21.6		30.3 28.3	29.3	
9-Dec-13	Sunny	Moderate	11:51	6.6	Surface	1.0	20.5 20.5	20.5	7.9 7.9	7.9	32.1 32.1	32.1	91.4 90.9	91.2	6.8 6.8	6.8	6.8	6.5 6.2	6.4	6.5	11.4 12.5	12.0	12.2
					Middle	3.3	20.5 20.5	20.5	7.9 7.8	7.9	32.1 32.1	32.1	90.8 91.8	91.3	6.8 6.8	6.8		6.2 6.4	6.3		13.3 11.6	12.5	
					Bottom	5.6	20.5 20.5	20.5	7.9 7.8	7.8	32.1 32.1	32.1	90.9 93.5	92.2	6.8 7.0	6.9	6.9	6.4 6.9	6.7		12.8 11.5	12.2	
11-Dec-13	Sunny	Moderate	15:26	6.6	Surface	1.0	20.7 20.7	20.7	8.0 8.0	8.0	32.7 32.8	32.8	92.1 91.0	91.6	6.8 6.7	6.8	6.8	2.8 2.8	2.8	2.9	9.8 10.3	10.1	10.6
					Middle	3.3	20.8 20.8	20.8	8.0 8.0	8.0	32.8 32.8	32.8	90.9 92.6	91.8	6.7 6.9	6.8		2.9 2.9	2.9		10.1 10.6	10.4	
					Bottom	5.6	20.8 20.8	20.8	8.0 8.0	8.0	32.9 32.9	32.9	94.5 91.1	92.8	7.0 6.7	6.9	6.9	2.9 2.8	2.9		11.9 10.8	11.4	
13-Dec-13	Fine	Moderate	16:45	6.5	Surface	1.0	20.6 20.6	20.6	8.0 8.0	8.0	33.2 33.2	33.2	92.3 90.7	91.5	6.8 6.7	6.8	6.8	3.0 3.0	3.0	3.0	4.0 4.6	4.3	5.3
					Middle	3.3	20.6 20.6	20.6	8.0 8.0	8.0	33.2 33.2	33.2	93.1 90.8	92.0	6.9 6.7	6.8		3.0 2.9	3.0		5.7 5.8	5.8	
					Bottom	5.5	20.6 20.6	20.6	8.0 8.0	8.0	33.2 33.2	33.2	95.3 91.3	93.3	7.0 6.7	6.9	6.9	3.1 2.9	3.0		5.6 6.1	5.9	
16-Dec-13	Rainy	Moderate	06:12	6.3	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	33.0 33.0	33.0	100.9 94.2	97.6	7.5 7.0	7.3	7.2	5.3 5.2	5.3	5.3	7.2 8.6	7.9	7.8
					Middle	3.2	20.3 20.3	20.3	7.9 7.9	7.9	33.0 33.0	33.0	93.2 98.7	96.0	6.9 7.4	7.1		5.3 5.3	5.3		7.7 7.6	7.7	
					Bottom	5.3	20.3 20.3	20.3	7.9 7.9	7.9	33.0 33.0	33.0	97.0 92.3	94.7	7.2 6.9	7.0	7.0	5.5 5.3	5.4		8.0 7.6	7.8	
18-Dec-13	Sunny	Moderate	07:15	6.5	Surface	1.0	19.6 19.7	19.7	8.0 8.0	8.0	33.3 33.3	33.3	91.4 90.6	91.0	6.9 6.8	6.8	6.8	8.5 8.2	8.4	8.7	14.0 13.9	14.0	13.9
					Middle	3.3	19.6 19.7	19.7	8.0 8.0	8.0	33.3 33.3	33.3	91.0 90.4	90.7	6.8 6.8	6.8		8.6 8.8	8.7		12.5 12.8	12.7	
					Bottom	5.5	19.7 19.7	19.7	8.0 8.0	8.0	33.3 33.3	33.3	91.0 90.4	90.7	6.8 6.8	6.8	6.8	9.0 9.1	9.1		15.0 14.9	15.0	
20-Dec-13	Sunny	Moderate	08:33	6.8	Surface	1.0	19.4 19.4	19.4	8.0 8.0	8.0	33.4 33.4	33.4	93.3 94.1	93.7	7.0 7.1	7.1	7.1	6.8 7.0	6.9	7.2	12.1 12.4	12.3	12.4
					Middle	3.4	19.4 19.4	19.4	7.9 8.0	8.0	33.4 33.4	33.4	94.9 93.3	94.1	7.2 7.0	7.1		7.2 7.1	7.2		12.5 12.3	12.4	
					Bottom	5.8	19.4 19.4	19.4	8.0 7.9	8.0	33.4 33.4	33.4	93.4 95.9	94.7	7.1 7.3	7.2	7.2	7.6 7.5	7.6		12.4 12.5	12.5	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10A - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	09:53	6.7	Surface	1.0	18.7 18.7	18.7	8.0 8.0	8.0	33.2 33.2	33.2	93.3 93.1	93.2	7.2 7.1	7.1	7.1	3.9 4.0	4.0	4.1	7.8 9.2	8.5	8.2
					Middle	3.4	18.8 18.8	18.8	8.0 8.0	8.0	33.3 33.2	33.2	93.5 93.0	93.3	7.2 7.1	7.1		4.1 4.0	4.1		7.5 8.0	7.8	
					Bottom	5.7	18.8 18.8	18.8	8.0 8.0	8.0	33.3 33.2	33.3	94.0 92.9	93.5	7.2 7.1	7.1	7.1	4.3 4.2	4.3		8.5 8.2	8.4	
25-Dec-13	Sunny	Moderate	11:35	6.4	Surface	1.0	18.7 18.7	18.7	8.0 8.0	8.0	33.4 33.4	33.4	93.8 93.0	93.4	7.2 7.1	7.1	7.2	2.4 2.5	2.5	2.6	3.5 4.2	3.9	3.8
					Middle	3.2	18.7 18.7	18.7	8.0 8.0	8.0	33.4 33.4	33.4	94.3 93.1	93.7	7.2 7.1	7.2		2.6 2.5	2.6		3.5 4.7	4.1	
					Bottom	5.4	18.7 18.7	18.7	8.0 8.0	8.0	33.4 33.4	33.4	96.3 93.3	94.8	7.4 7.1	7.2	7.2	2.5 2.6	2.6		2.7 4.1	3.4	
27-Dec-13	Sunny	Moderate	14:42	6.7	Surface	1.0	18.6 18.6	18.6	8.1 8.0	8.1	33.6 33.6	33.6	94.9 97.2	96.1	7.3 7.4	7.4	7.4	2.7 2.6	2.7	2.5	5.9 5.8	5.9	6.4
					Middle	3.4	18.6 18.6	18.6	8.0 8.0	8.0	33.7 33.7	33.7	98.9 95.3	97.1	7.6 7.3	7.4		2.2 2.4	2.3		6.0 5.2	5.6	
					Bottom	5.7	18.6 18.5	18.6	8.0 8.1	8.1	33.7 33.7	33.7	95.8 103.1	99.5	7.3 7.9	7.6	7.6	2.5 2.4	2.5		8.4 7.2	7.8	
30-Dec-13	Sunny	Moderate	17:05	6.5	Surface	1.0	17.8 17.8	17.8	8.0 8.0	8.0	33.5 33.5	33.5	93.8 95.7	94.8	7.3 7.4	7.4	7.4	4.7 5.0	4.9	5.4	8.5 9.1	8.8	9.7
					Middle	3.3	17.8 17.8	17.8	8.0 8.0	8.0	33.6 33.6	33.6	93.9 97.0	95.5	7.3 7.5	7.4		4.4 4.7	4.6		9.2 10.4	9.8	
					Bottom	5.5	17.8 17.8	17.8	8.0 8.0	8.0	33.6 33.6	33.6	94.6 99.6	97.1	7.4 7.8	7.6	7.6	6.8 6.6	6.7		10.2 11.0	10.6	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10B(N) - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	12:58	5.8	Surface	1.0	21.3 21.3	21.3	8.0 8.0	8.0	33.1 33.1	33.1	91.4 91.3	91.4	6.7 6.7	6.7	6.7	6.0 5.7	5.9	6.0	8.6 7.8	8.2	9.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.8	21.3 21.3	21.3	8.0 8.0	8.0	33.1 33.1	33.1	91.1 91.1	91.1	6.7 6.7	6.7	6.7	6.2 6.0	6.1		11.7 10.2	11.0	
4-Dec-13	Sunny	Moderate	14:49	4.7	Surface	1.0	21.1 21.1	21.1	7.9 7.9	7.9	32.8 32.8	32.8	92.0 91.3	91.7	6.8 6.7	6.7	6.7	9.1 9.3	9.2	9.2	12.3 11.9	12.1	12.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	21.1 21.1	21.1	7.9 7.9	7.9	32.8 32.8	32.8	91.3 94.1	92.7	6.7 6.9	6.8	6.8	9.1 9.0	9.1		13.8 12.4	13.1	
6-Dec-13	Sunny	Moderate	16:32	4.8	Surface	1.0	20.7 20.7	20.7	8.0 8.0	8.0	32.5 32.5	32.5	91.3 91.3	91.3	6.8 6.8	6.8	6.8	5.6 5.4	5.5	5.5	8.5 9.6	9.1	8.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	20.7 20.7	20.7	8.0 8.0	8.0	32.5 32.6	32.6	91.3 91.2	91.3	6.8 6.8	6.8	6.8	5.5 5.2	5.4		8.1 8.6	8.4	
9-Dec-13	Sunny	Moderate	19:17	5.5	Surface	1.0	20.6 20.6	20.6	8.0 8.0	8.0	32.4 32.4	32.4	91.2 91.1	91.2	6.8 6.8	6.8	6.8	3.4 3.5	3.5	3.5	6.3 4.4	5.4	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	20.6 20.6	20.6	8.0 8.0	8.0	32.4 32.4	32.4	91.0 91.1	91.1	6.8 6.8	6.8	6.8	3.4 3.3	3.4		6.4 6.9	6.7	
11-Dec-13	Fine	Moderate	06:41	4.8	Surface	1.0	20.7 20.7	20.7	7.9 7.9	7.9	32.6 32.5	32.6	90.1 90.6	90.4	6.7 6.7	6.7	6.7	2.4 2.5	2.5	2.5	9.7 10.6	10.2	10.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	20.7 20.7	20.7	7.9 7.9	7.9	32.5 32.6	32.6	91.2 90.1	90.7	6.8 6.7	6.7	6.7	2.5 2.4	2.5		10.9 10.9	10.9	
13-Dec-13	Cloudy	Moderate	08:59	5.0	Surface	1.0	20.6 20.6	20.6	7.9 7.9	7.9	32.9 32.9	32.9	91.6 92.7	92.2	6.8 6.9	6.8	6.8	3.1 3.1	3.1	3.2	5.4 3.4	4.4	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	20.6 20.6	20.6	7.9 7.9	7.9	32.9 32.9	32.9	94.2 92.0	93.1	7.0 6.8	6.9	6.9	3.2 3.2	3.2		7.1 5.8	6.5	
16-Dec-13	Rainy	Moderate	12:52	4.1	Surface	1.0	20.0 20.0	20.0	8.0 8.0	8.0	33.0 33.0	33.0	96.5 99.7	98.1	7.5 7.7	7.6	7.6	4.9 5.2	5.1	5.2	7.0 7.4	7.2	6.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	20.0 20.0	20.0	8.0 8.0	8.0	33.0 33.0	33.0	97.9 95.7	96.8	7.6 7.4	7.5	7.5	5.4 5.1	5.3		6.0 6.4	6.2	
18-Dec-13	Sunny	Moderate	14:11	5.5	Surface	1.0	19.7 19.7	19.7	8.0 8.0	8.0	33.3 33.3	33.3	91.0 91.1	91.1	6.9 6.9	6.9	6.9	4.9 5.1	5.0	5.1	6.2 6.8	6.5	7.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	19.6 19.7	19.7	8.0 8.0	8.0	33.3 33.3	33.3	91.1 91.0	91.1	6.9 6.9	6.9	6.9	5.2 5.1	5.2		8.7 7.7	8.2	
20-Dec-13	Sunny	Moderate	15:12	5.5	Surface	1.0	19.6 19.6	19.6	8.0 8.0	8.0	33.7 33.7	33.7	93.1 93.1	93.1	7.0 7.0	7.0	7.0	5.0 4.8	4.9	4.8	5.8 5.9	5.9	6.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	19.6 19.6	19.6	8.0 8.0	8.0	33.7 33.7	33.7	93.1 93.0	93.1	7.0 7.0	7.0	7.0	4.8 4.4	4.6		7.7 7.2	7.5	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10B(N) - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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*
23-Dec-13	Sunny	Moderate	17:17	4.8	Surface	1.0	19.0 19.0	19.0	8.0 8.0	8.0	33.4 33.4	33.4	92.0 92.2	92.1	7.0 7.0	7.0	7.0	3.7 3.7	3.7	3.8	7.3 7.7	7.5	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	19.0 19.0	19.0	8.0 8.0	8.0	33.4 33.4	33.4	92.0 92.1	92.1	7.0 7.0	7.0	7.0	3.7 3.8	3.8		7.5 8.1	7.8	
25-Dec-13	Sunny	Moderate	19:31	5.0	Surface	1.0	18.8 18.8	18.8	8.0 8.0	8.0	33.6 33.6	33.6	93.2 93.1	93.2	7.1 7.1	7.1	7.1	2.7 2.7	2.7	2.8	3.4 4.9	4.2	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	18.8 18.8	18.8	8.0 8.1	8.1	33.6 33.6	33.6	93.2 93.2	93.2	7.1 7.1	7.1	7.1	2.8 2.8	2.8		5.5 4.2	4.9	
27-Dec-13	Sunny	Moderate	06:12	5.6	Surface	1.0	18.5 18.5	18.5	8.0 8.0	8.0	33.5 33.6	33.6	95.5 95.9	95.7	7.3 7.4	7.3	7.3	2.1 2.3	2.2	2.4	3.0 4.9	4.0	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	18.4 18.5	18.5	8.0 8.0	8.0	33.3 33.6	33.4	96.2 97.0	96.6	7.4 7.4	7.4	7.4	2.6 2.5	2.6		6.3 6.4	6.4	
30-Dec-13	Sunny	Moderate	09:55	5.5	Surface	1.0	17.7 17.7	17.7	8.0 8.0	8.0	33.4 33.5	33.5	97.9 94.5	96.2	7.6 7.4	7.5	7.5	2.8 2.6	2.7	2.7	5.1 6.8	6.0	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	17.7 17.7	17.7	8.0 8.0	8.0	33.4 33.5	33.4	102.2 95.6	98.9	8.0 7.5	7.7	7.7	2.8 2.6	2.7		7.1 8.7	7.9	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10B(N) - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling 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-Dec-13	Sunny	Moderate	05:29	5.7	Surface	1.0	21.3 21.3	21.3	7.9 7.8	7.8	32.8 32.6	32.7	93.3 98.1	95.7	6.8 7.2	7.0	7.0	8.9 9.3	9.1	9.0	15.0 15.7	15.4	15.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	21.2 21.3	21.3	7.8 7.8	7.8	32.5 32.7	32.6	94.2 95.0	94.6	7.0 7.0	7.0	7.0	8.3 9.2	8.8		15.0 14.8	14.9	
4-Dec-13	Sunny	Moderate	07:39	5.3	Surface	1.0	20.9 20.9	20.9	7.9 7.9	7.9	32.8 32.8	32.8	92.9 93.6	93.3	6.9 6.9	6.9	6.9	14.7 14.5	14.6	14.6	16.4 18.4	17.4	19.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	20.9 20.9	20.9	7.9 7.9	7.9	32.7 32.8	32.8	94.7 93.1	93.9	7.0 6.9	6.9	6.9	14.4 14.8	14.6		20.6 20.5	20.6	
6-Dec-13	Sunny	Moderate	09:15	5.1	Surface	1.0	20.7 20.7	20.7	7.9 7.9	7.9	32.5 32.4	32.5	92.1 92.9	92.5	6.8 6.9	6.9	6.9	13.5 13.5	13.5	13.6	21.1 20.9	21.0	22.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	20.6 20.7	20.7	7.9 7.9	7.9	32.4 32.5	32.4	94.1 92.2	93.2	7.0 6.8	6.9	6.9	13.7 13.7	13.7		24.4 23.2	23.8	
9-Dec-13	Sunny	Moderate	11:39	5.7	Surface	1.0	20.6 20.6	20.6	7.9 7.8	7.8	32.1 32.0	32.1	90.7 91.4	91.1	6.8 6.8	6.8	6.8	6.4 6.4	6.4	6.5	13.8 14.6	14.2	15.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	20.6 20.6	20.6	7.8 7.8	7.8	31.9 32.1	32.0	92.7 90.7	91.7	6.9 6.8	6.8	6.8	6.5 6.5	6.5		15.8 15.6	15.7	
11-Dec-13	Sunny	Moderate	15:35	5.2	Surface	1.0	20.7 20.7	20.7	8.0 8.0	8.0	32.7 32.7	32.7	90.4 90.3	90.4	6.7 6.7	6.7	6.7	2.6 2.6	2.6	2.7	9.5 8.8	9.2	10.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	20.8 20.8	20.8	8.0 8.0	8.0	32.9 32.8	32.8	90.3 90.4	90.4	6.7 6.7	6.7	6.7	2.7 2.7	2.7		10.6 11.3	11.0	
13-Dec-13	Fine	Moderate	16:55	5.4	Surface	1.0	20.6 20.6	20.6	8.0 8.0	8.0	33.2 33.2	33.2	90.1 90.1	90.1	6.7 6.7	6.7	6.7	3.1 3.0	3.1	3.2	5.2 5.9	5.6	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	20.6 20.6	20.6	8.0 8.0	8.0	33.3 33.3	33.3	90.1 89.9	90.0	6.7 6.6	6.6	6.6	3.2 3.1	3.2		5.0 5.9	5.5	
16-Dec-13	Rainy	Moderate	06:06	4.5	Surface	1.0	20.3 20.3	20.3	7.9 7.9	7.9	32.9 32.9	32.9	90.6 96.2	93.4	6.7 7.2	7.0	7.0	5.8 5.8	5.8	5.9	6.4 6.3	6.4	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	20.3 20.3	20.3	7.9 7.9	7.9	32.9 32.8	32.8	90.4 91.4	90.9	6.7 6.8	6.8	6.8	5.7 6.1	5.9		6.9 7.9	7.4	
18-Dec-13	Sunny	Moderate	07:06	5.6	Surface	1.0	19.7 19.7	19.7	8.0 8.0	8.0	33.3 33.4	33.4	92.3 91.7	92.0	6.9 6.9	6.9	6.9	7.5 7.3	7.4	7.5	13.4 13.4	13.4	13.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.6	19.7 19.7	19.7	8.0 8.0	8.0	33.4 33.3	33.4	91.3 91.4	91.4	6.9 6.9	6.9	6.9	7.5 7.7	7.6		13.8 13.8	13.8	
20-Dec-13	Sunny	Moderate	08:20	5.7	Surface	1.0	19.6 19.6	19.6	7.9 7.9	7.9	33.4 33.4	33.4	95.7 94.1	94.9	7.2 7.1	7.1	7.1	7.5 7.4	7.5	7.7	13.5 14.5	14.0	14.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	19.5 19.6	19.6	7.9 7.9	7.9	33.3 33.4	33.4	97.5 94.3	95.9	7.4 7.1	7.2	7.2	7.8 7.7	7.8		14.2 13.8	14.0	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

Appendix J - Marine Water Quality Monitoring Results

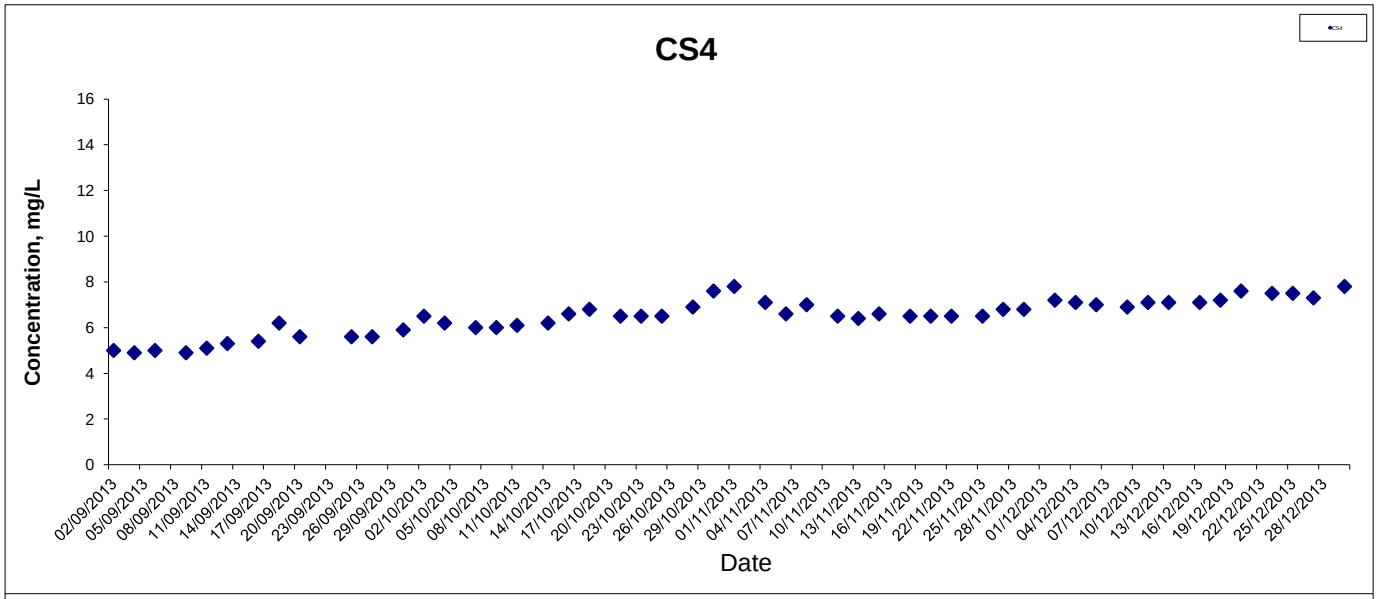
Water Quality Monitoring Results at SR10B(N) - Mid-FloodTide

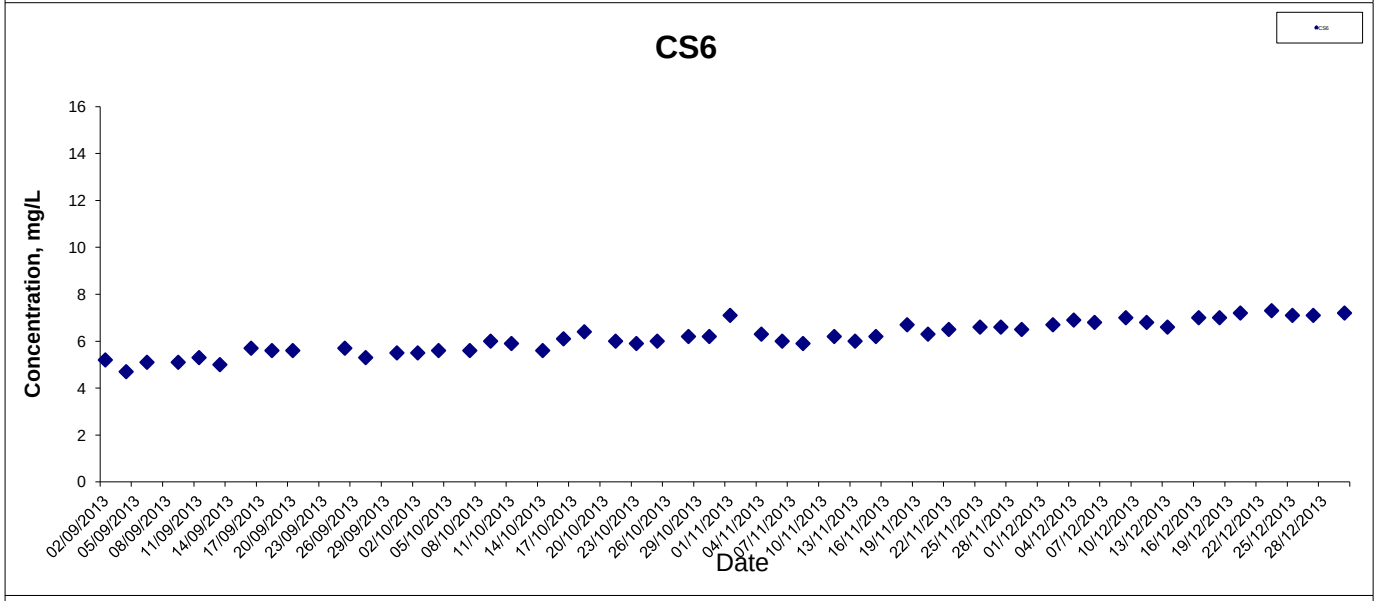
Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
23-Dec-13	Sunny	Moderate	09:48	5.3	Surface	1.0	19.1 19.1	19.1	8.0 8.0	8.0	33.5 33.4	33.5	93.4 94.7	94.1	7.1 7.2	7.1	7.1	4.9 4.8	4.9	4.9	7.8 8.5	8.2	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	19.0 19.1	19.1	8.0 8.0	8.0	33.4 33.5	33.4	97.6 93.8	95.7	7.4 7.1	7.3	7.3	4.8 4.7	4.8		7.4 8.6	8.0	
25-Dec-13	Sunny	Moderate	11:30	5.4	Surface	1.0	18.9 18.9	18.9	8.0 8.0	8.0	33.4 33.5	33.4	95.5 94.3	94.9	7.3 7.2	7.2	7.2	2.8 3.0	2.9	2.9	5.5 6.7	6.1	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	18.9 18.9	18.9	8.0 8.0	8.0	33.4 33.4	33.4	94.8 98.1	96.5	7.2 7.5	7.4	7.4	2.8 2.9	2.9		6.3 5.5	5.9	
27-Dec-13	Sunny	Moderate	14:57	5.4	Surface	1.0	18.6 18.6	18.6	8.1 8.1	8.1	33.6 33.6	33.6	93.2 93.3	93.3	7.1 7.2	7.1	7.1	2.7 2.6	2.7	2.8	6.4 6.1	6.3	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	18.6 18.6	18.6	8.1 8.1	8.1	33.6 33.6	33.6	93.1 93.1	93.1	7.1 7.1	7.1	7.1	2.7 3.0	2.9		6.6 6.8	6.7	
30-Dec-13	Sunny	Moderate	17:18	5.7	Surface	1.0	17.8 17.8	17.8	8.1 8.1	8.1	33.5 33.5	33.5	92.7 92.7	92.7	7.2 7.2	7.2	7.2	5.2 5.0	5.1	5.4	8.6 7.9	8.3	8.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.7	17.8 17.8	17.8	8.1 8.1	8.1	33.6 33.5	33.6	92.5 92.6	92.6	7.2 7.2	7.2	7.2	5.7 5.5	5.6		9.1 7.8	8.5	

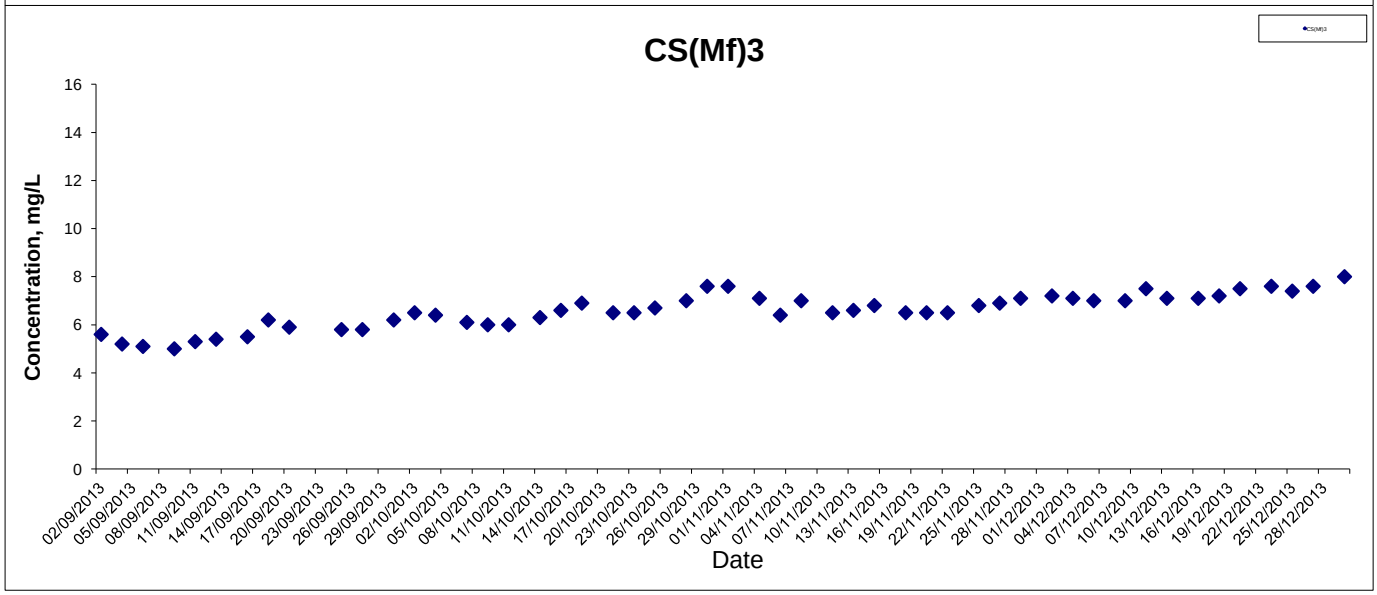
Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** Cancelled due to Thunderstorm Warning and safety concern.

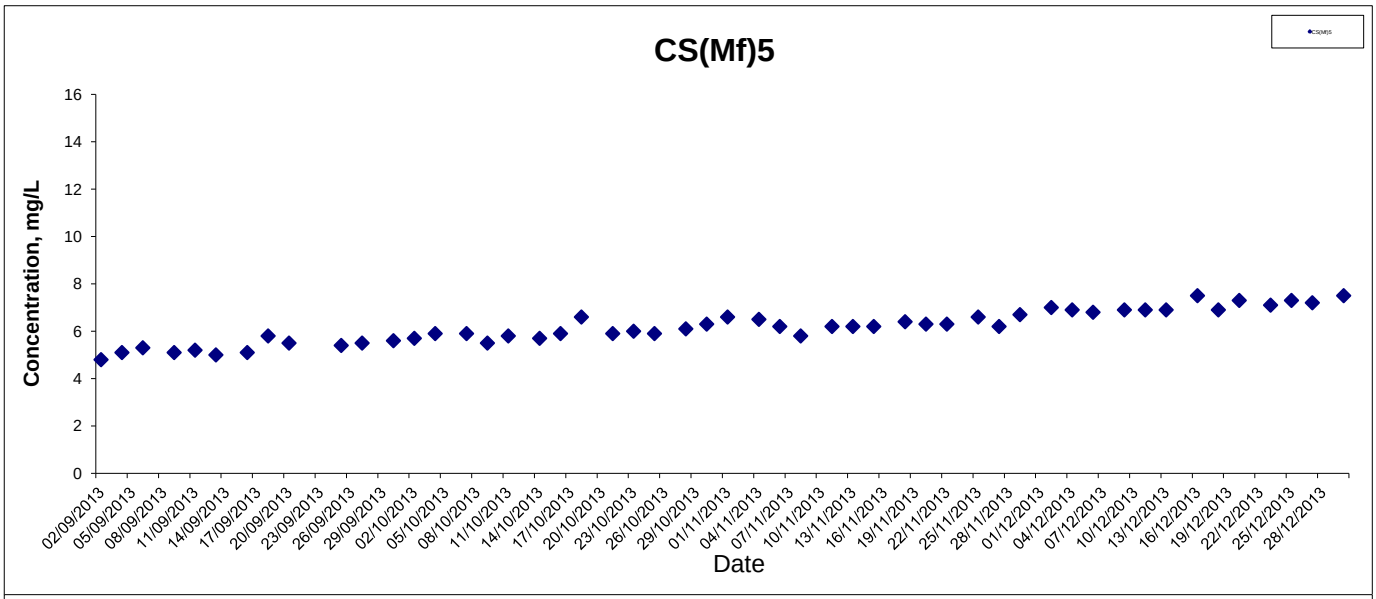
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

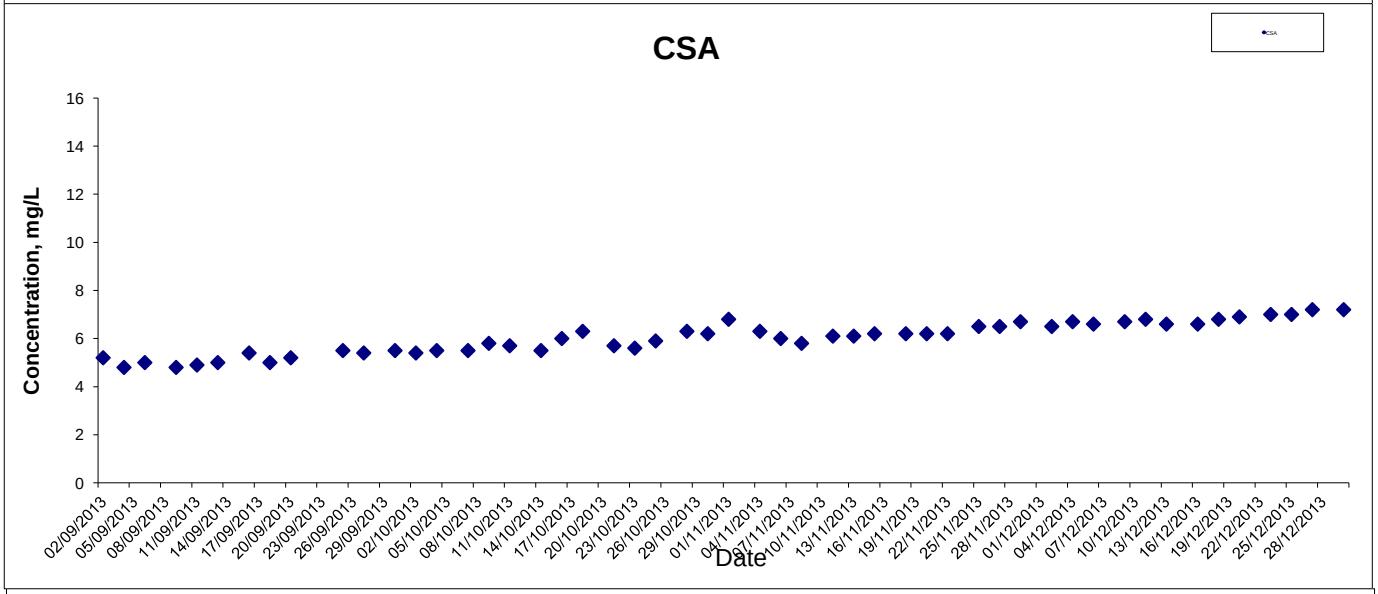


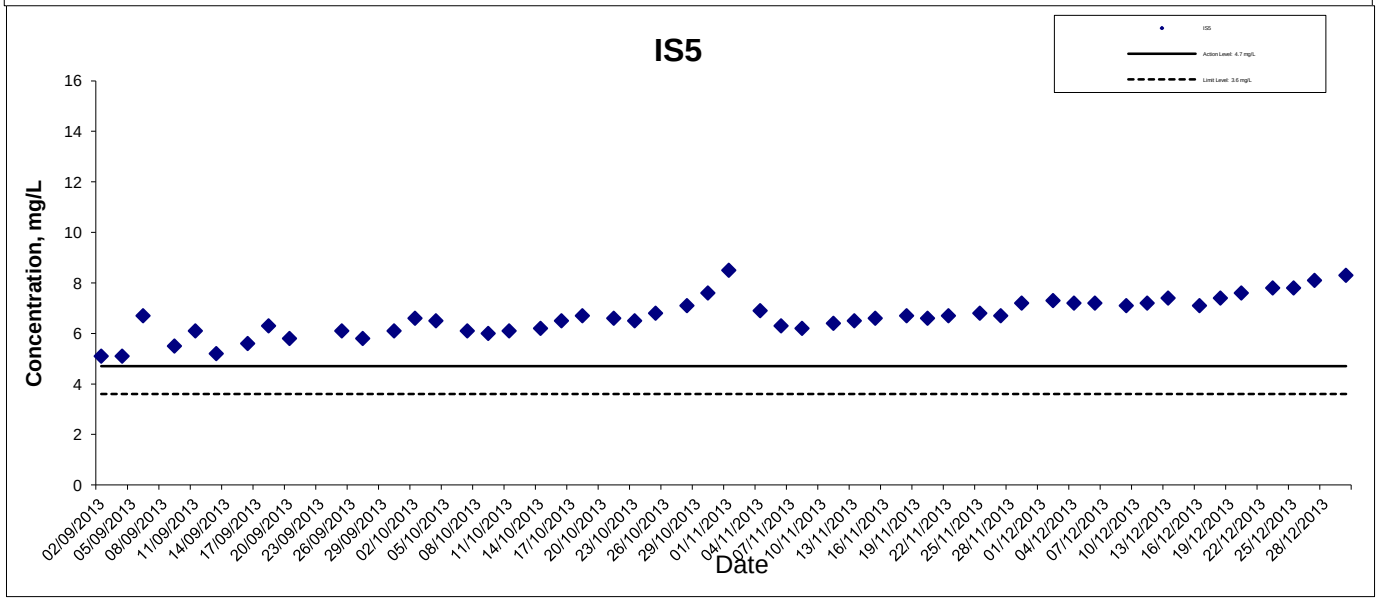




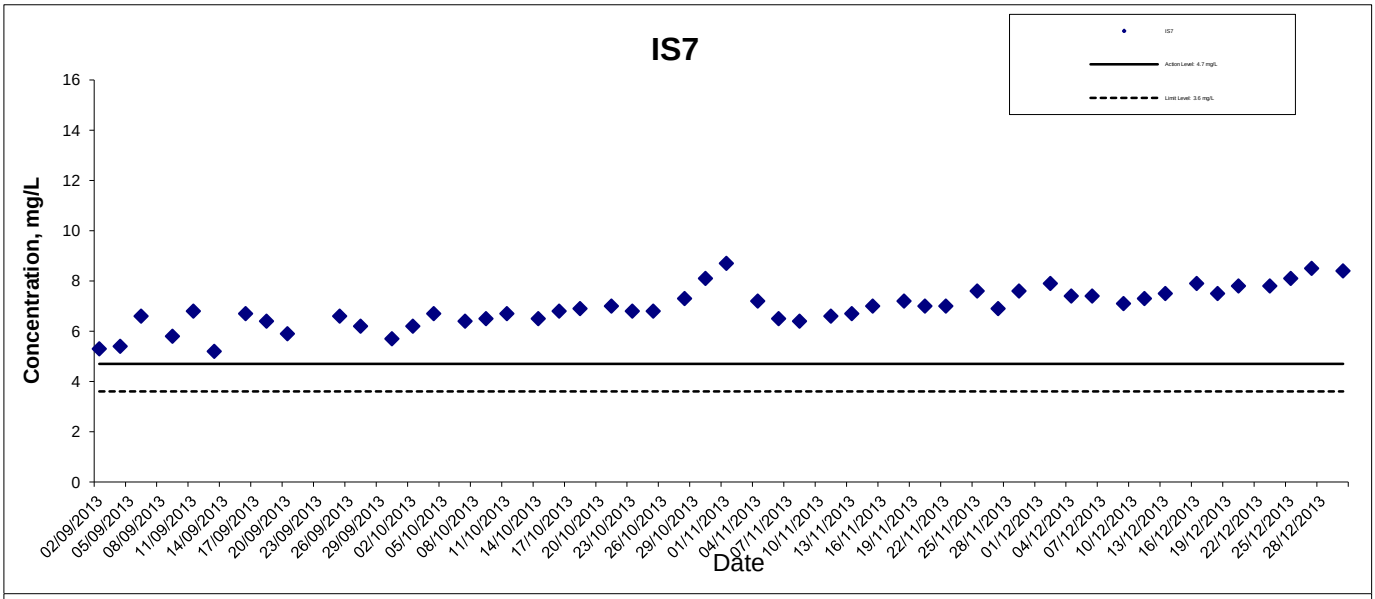
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

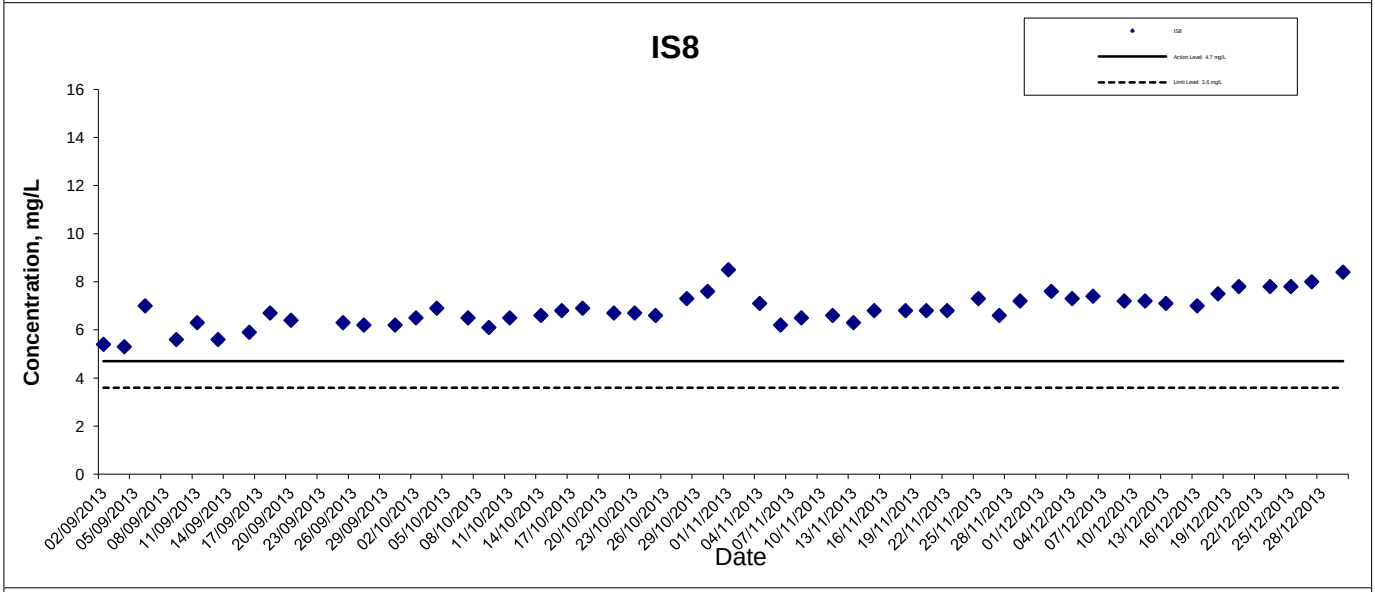


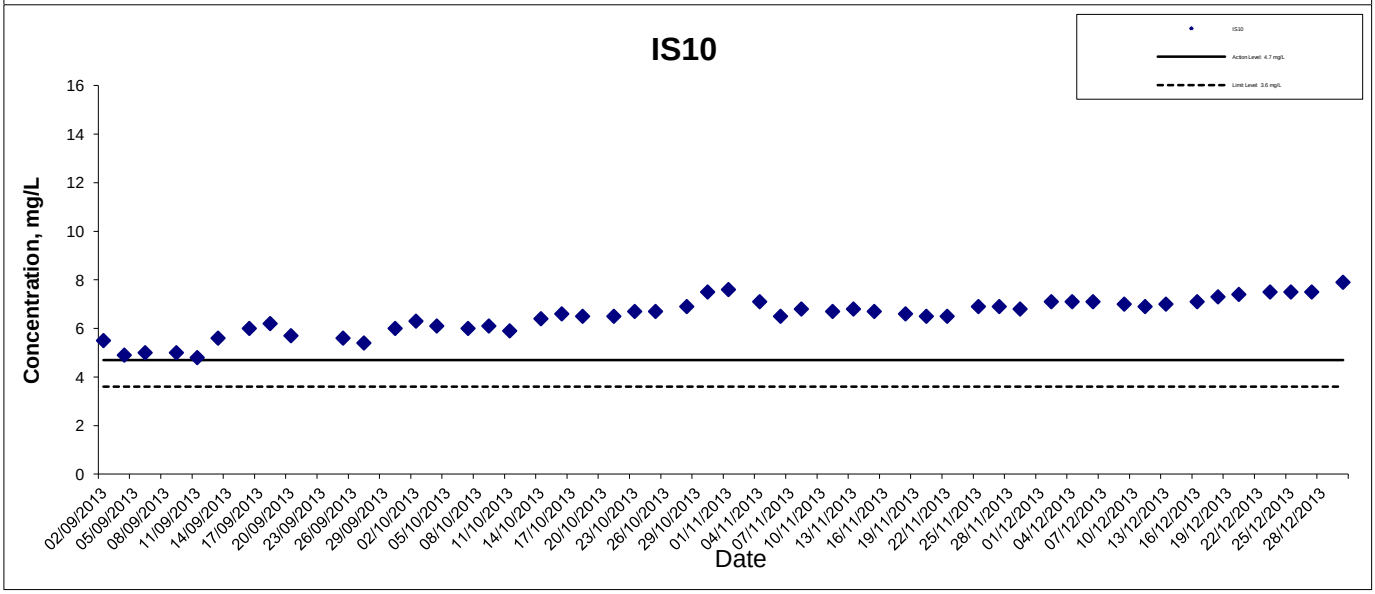




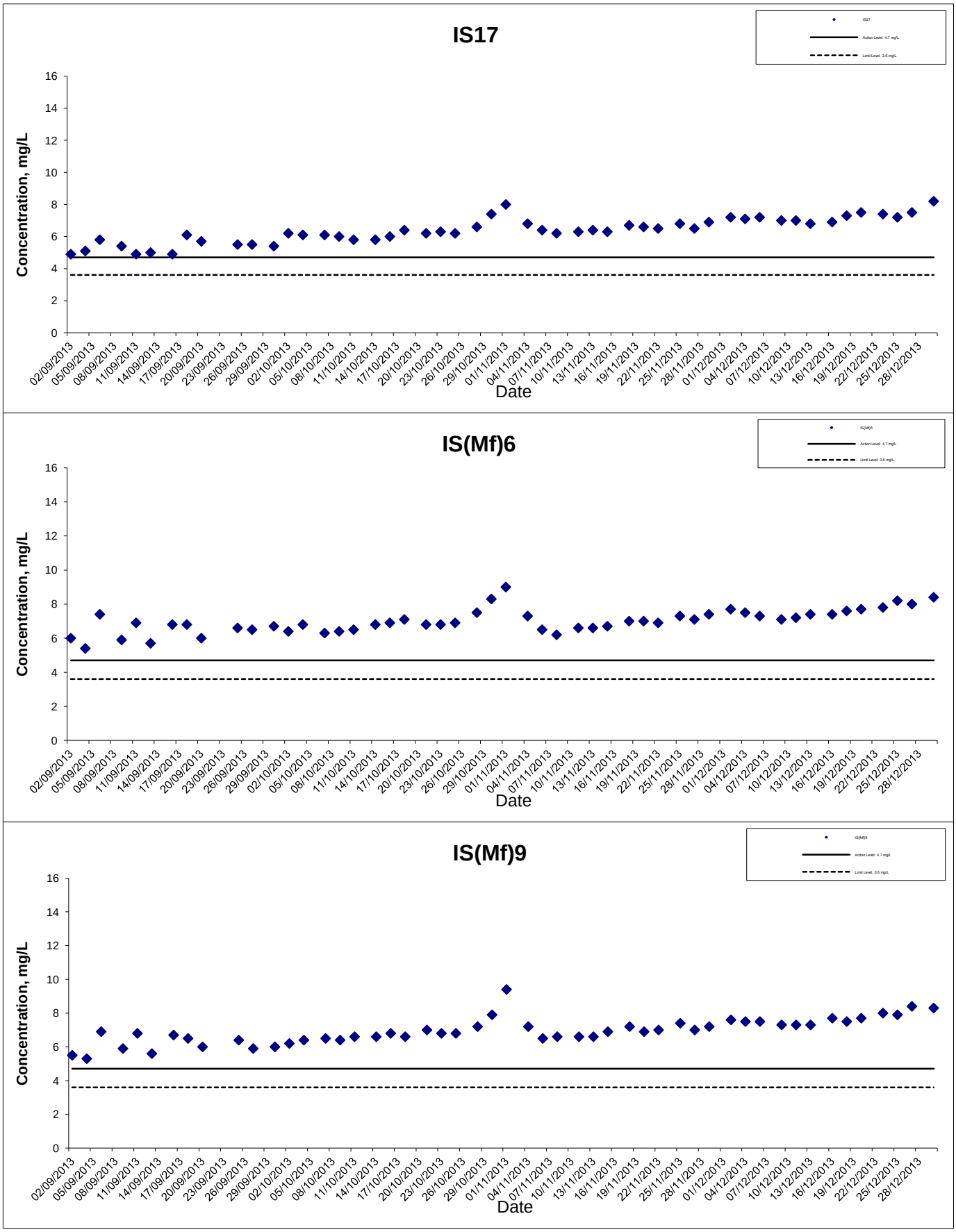
Dissolved Oxygen (Bottom) at Mid-Ebb Tide







Dissolved Oxygen (Bottom) at Mid-Ebb Tide

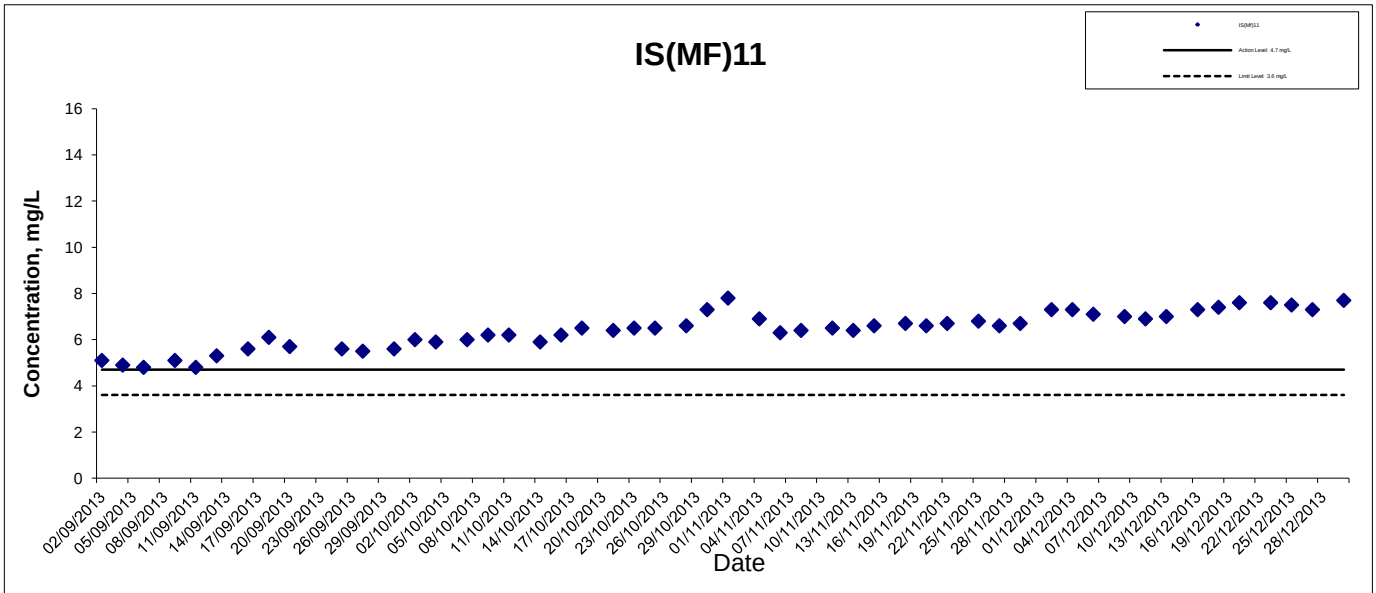


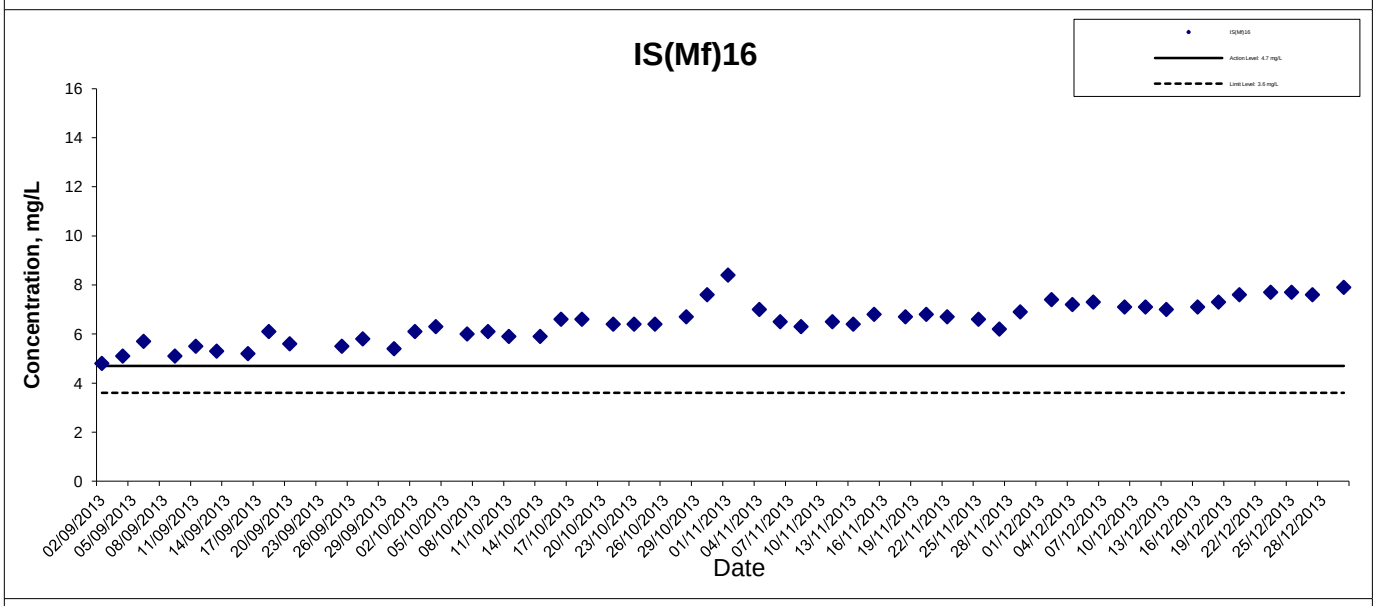
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

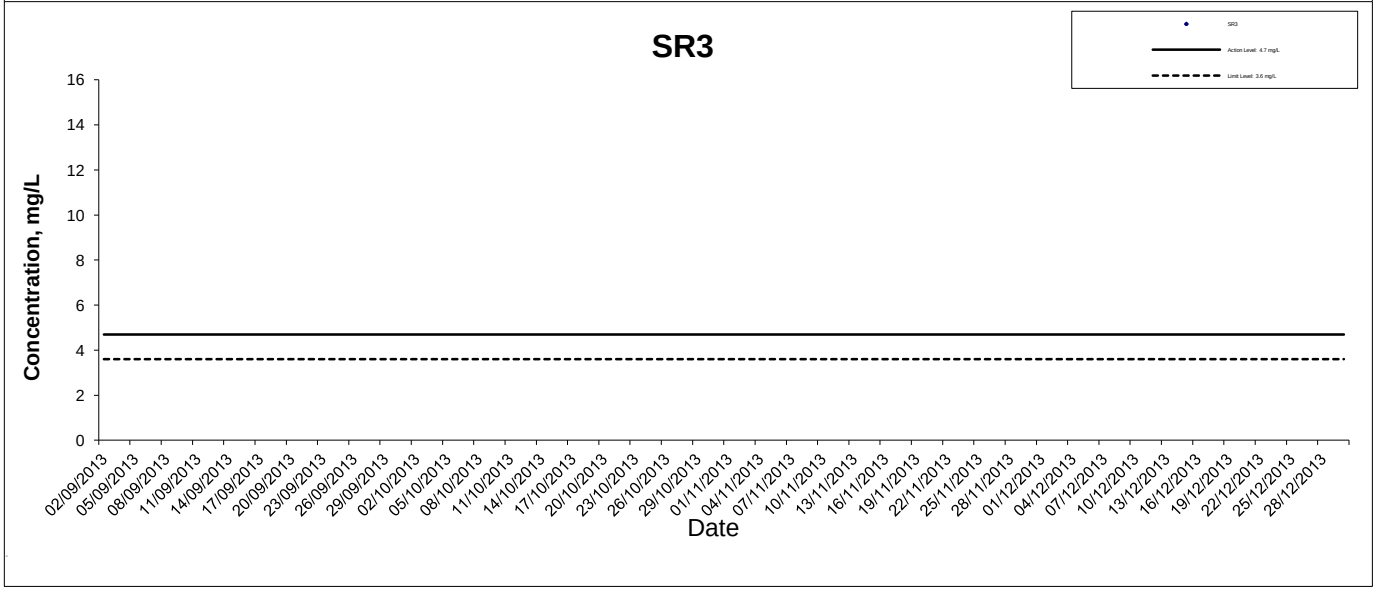
Graphical Presentation of Impact Water Quality Monitoring Results

Project No.: 60249820 **Date: Dec 2013** **Appendix J**

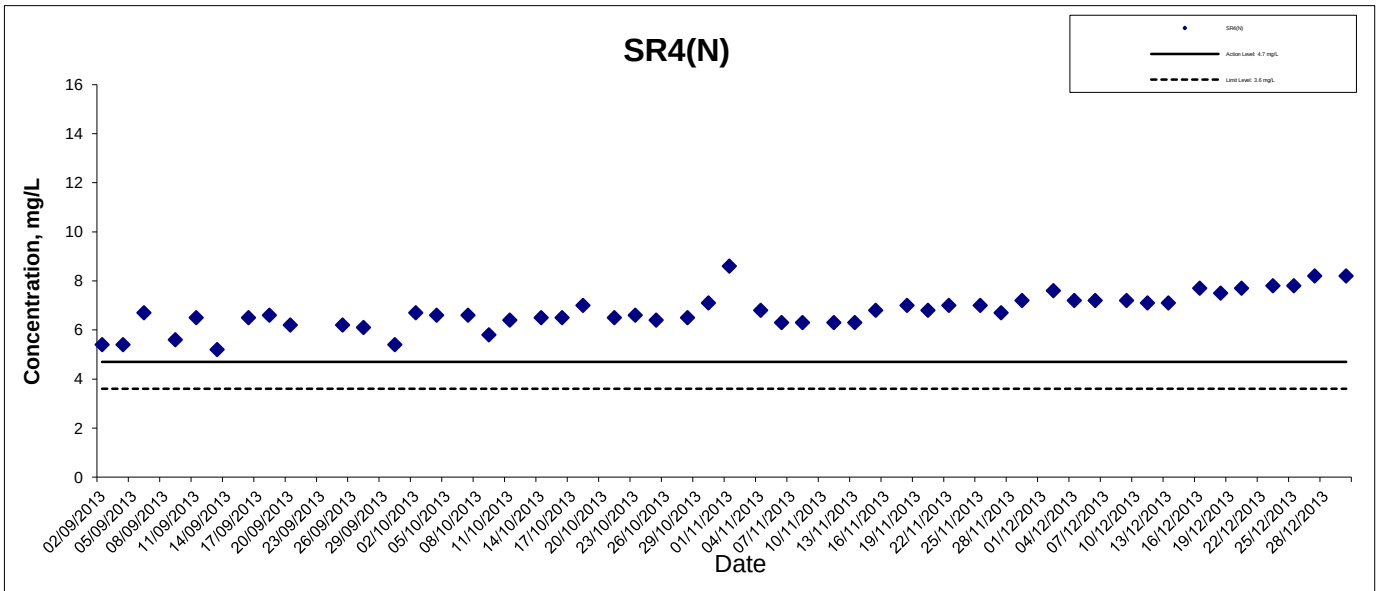
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

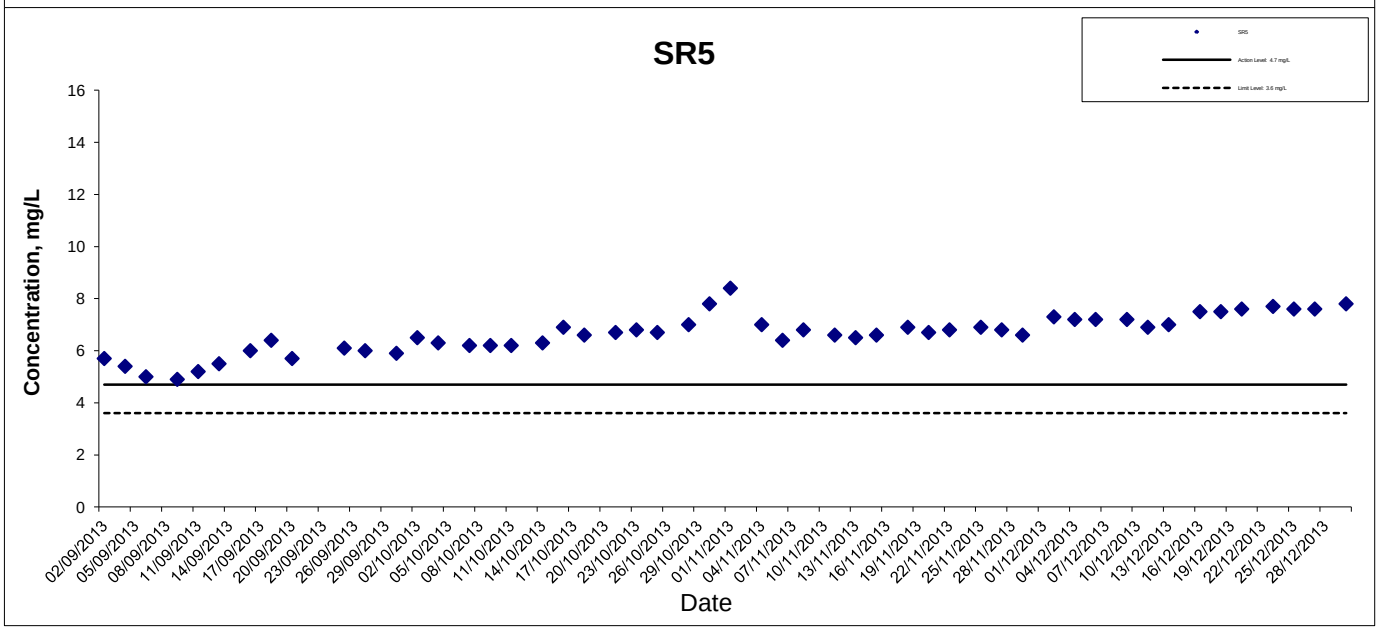


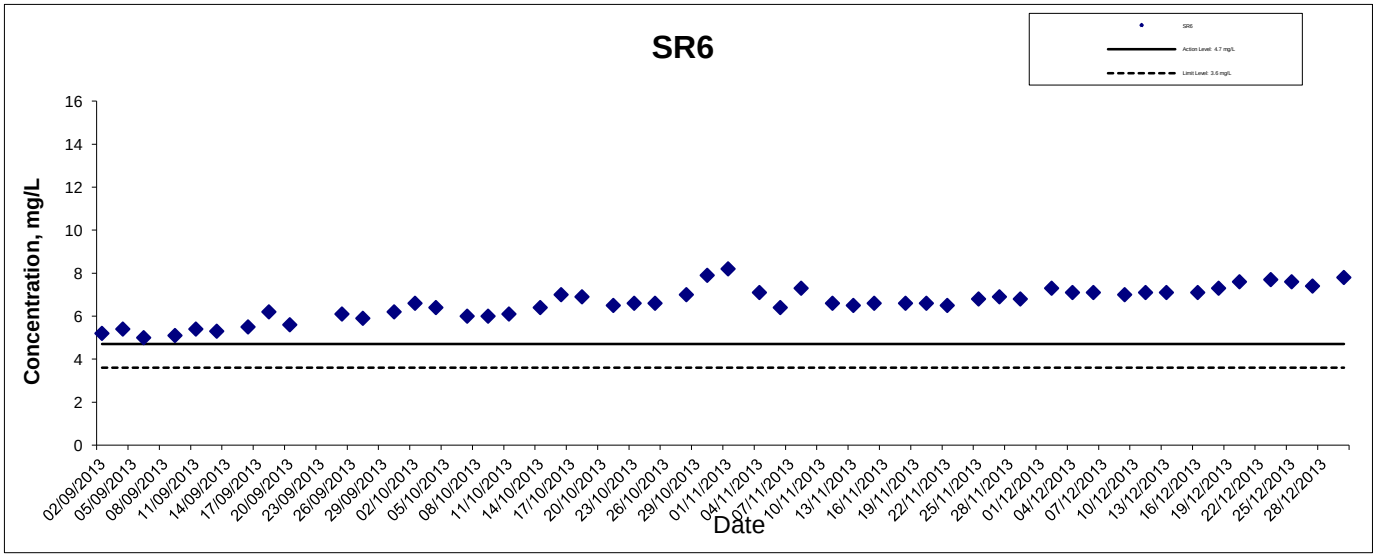




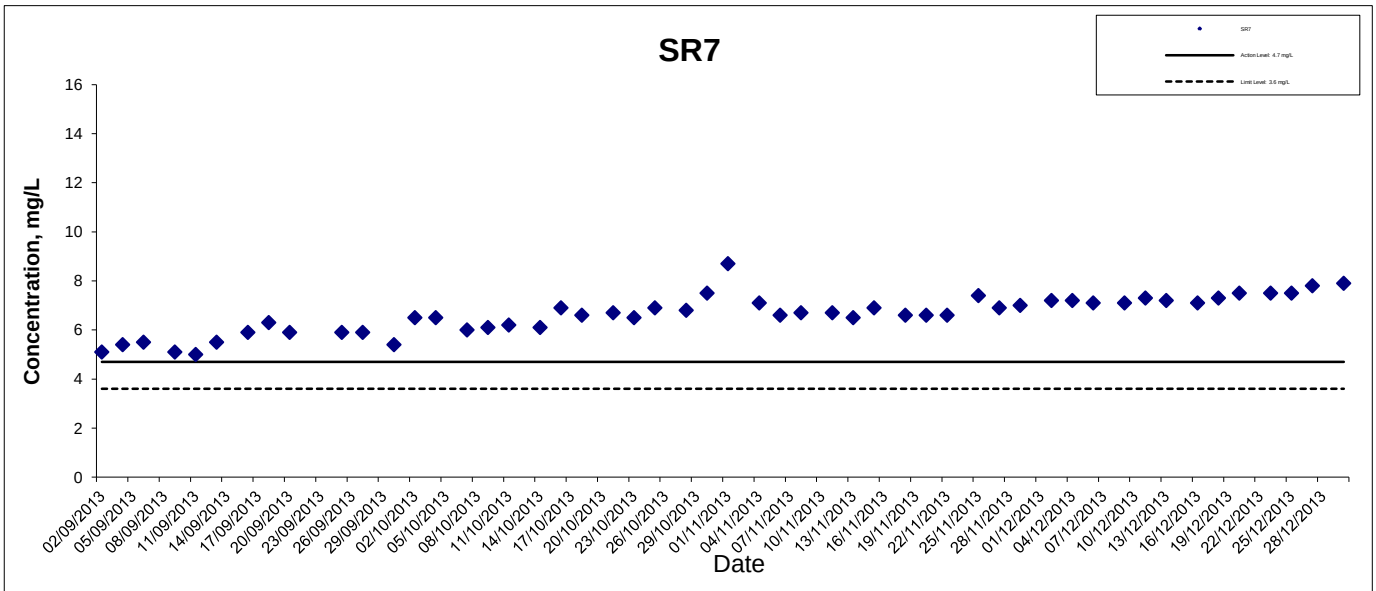
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

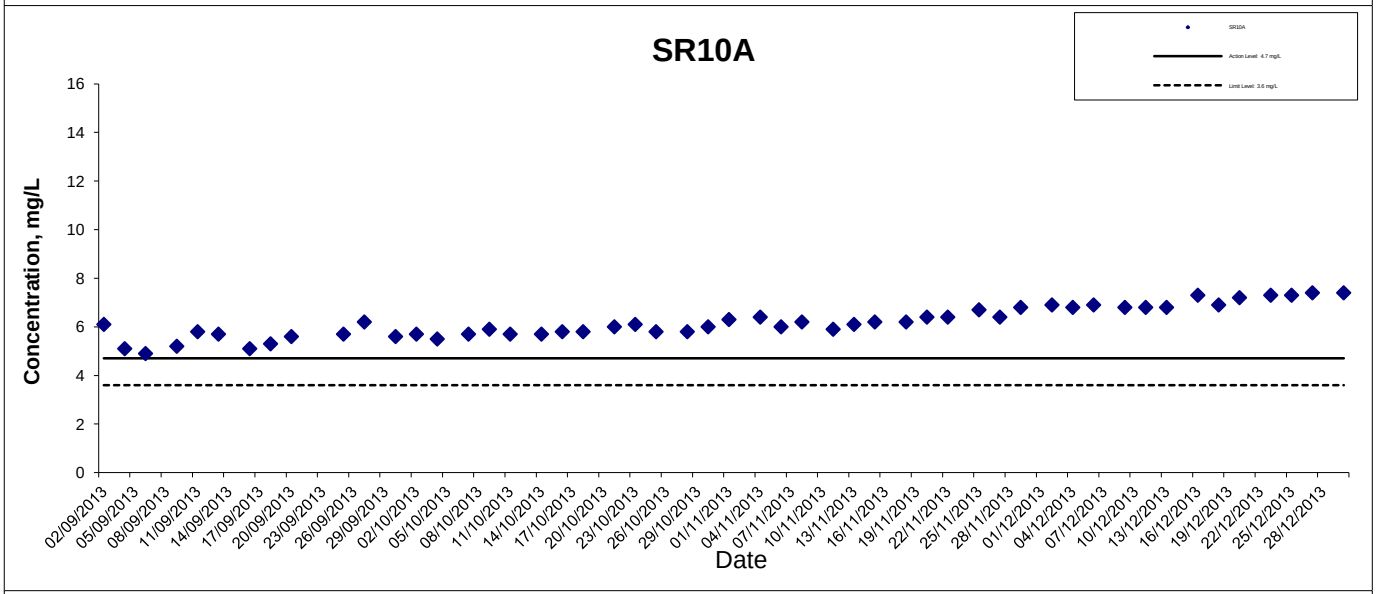


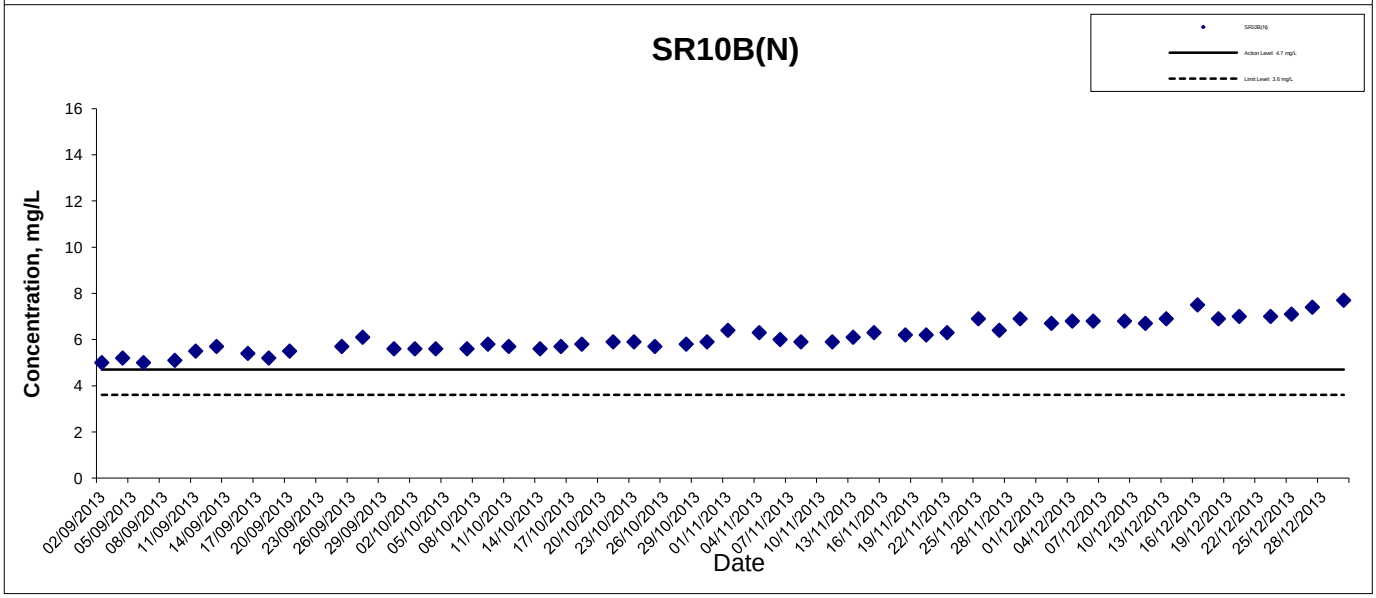




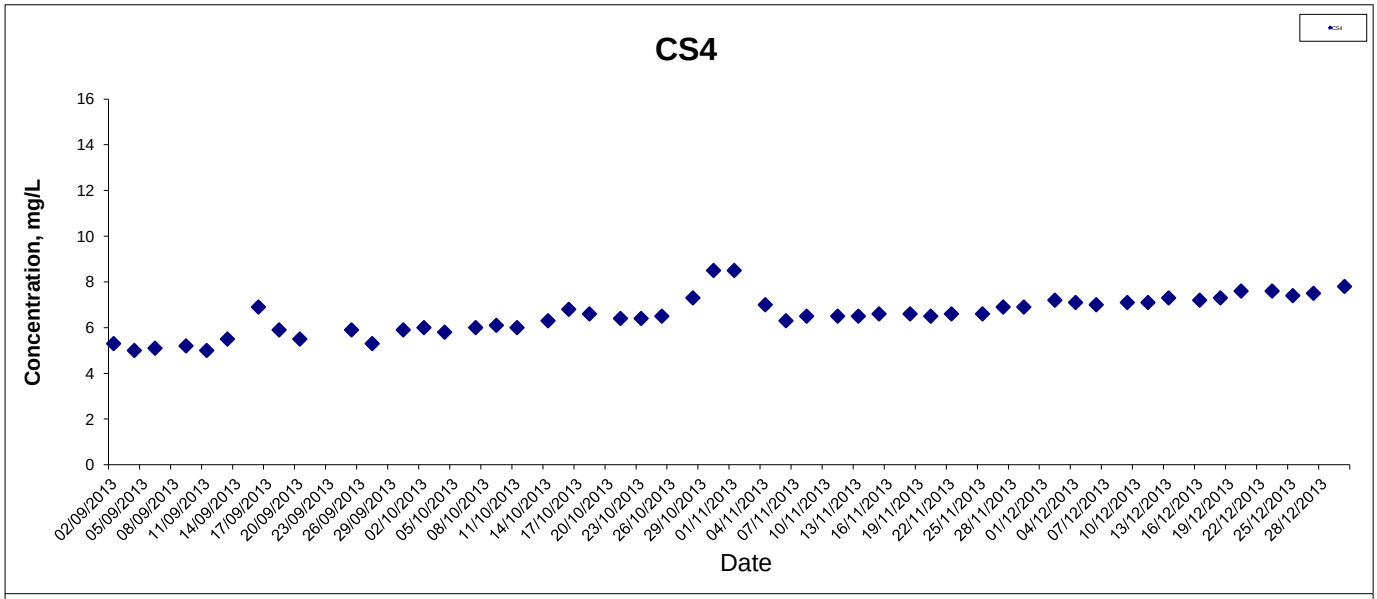
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

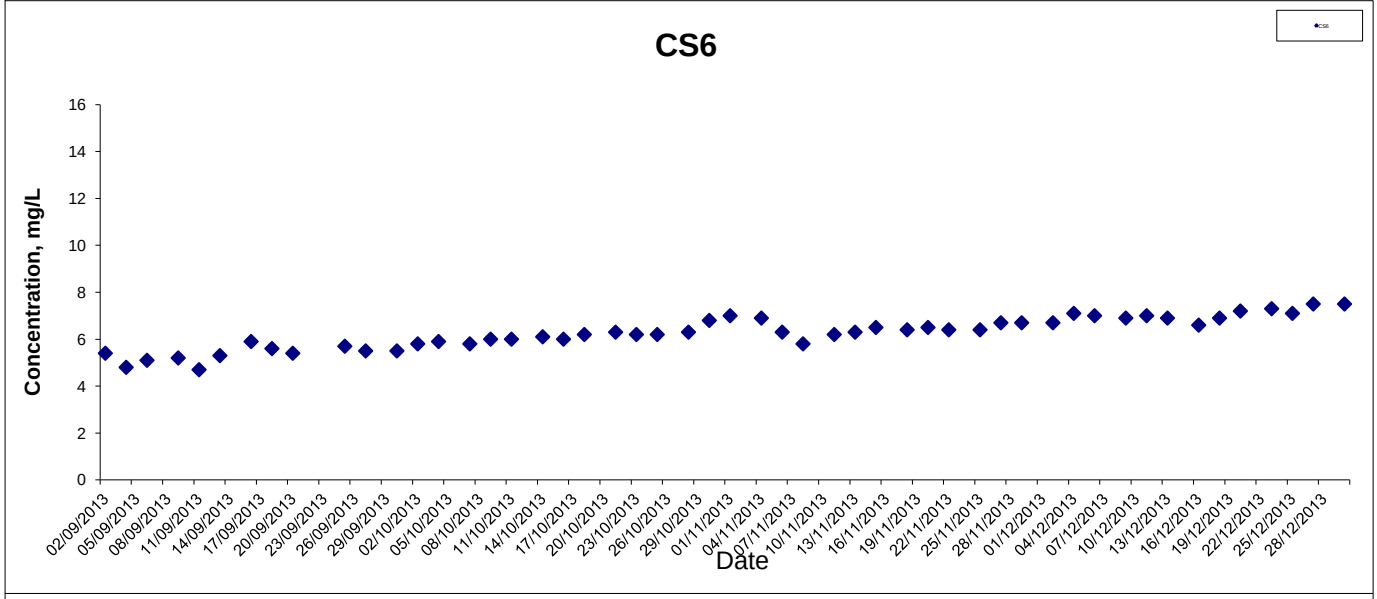


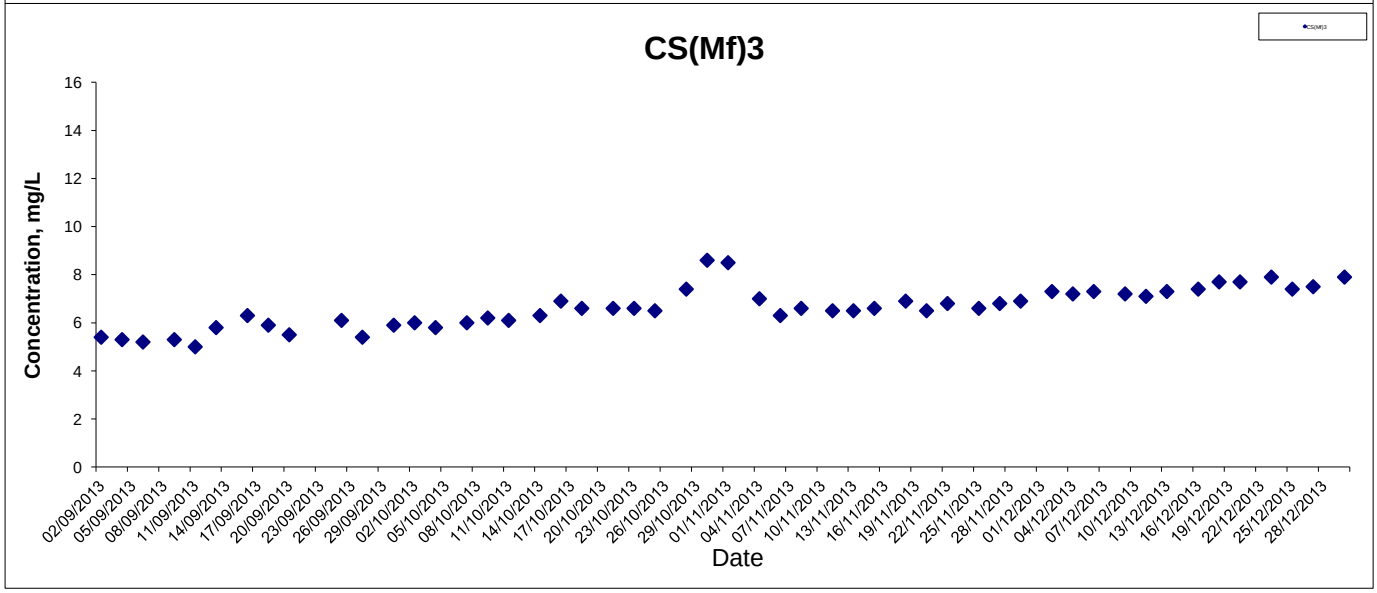




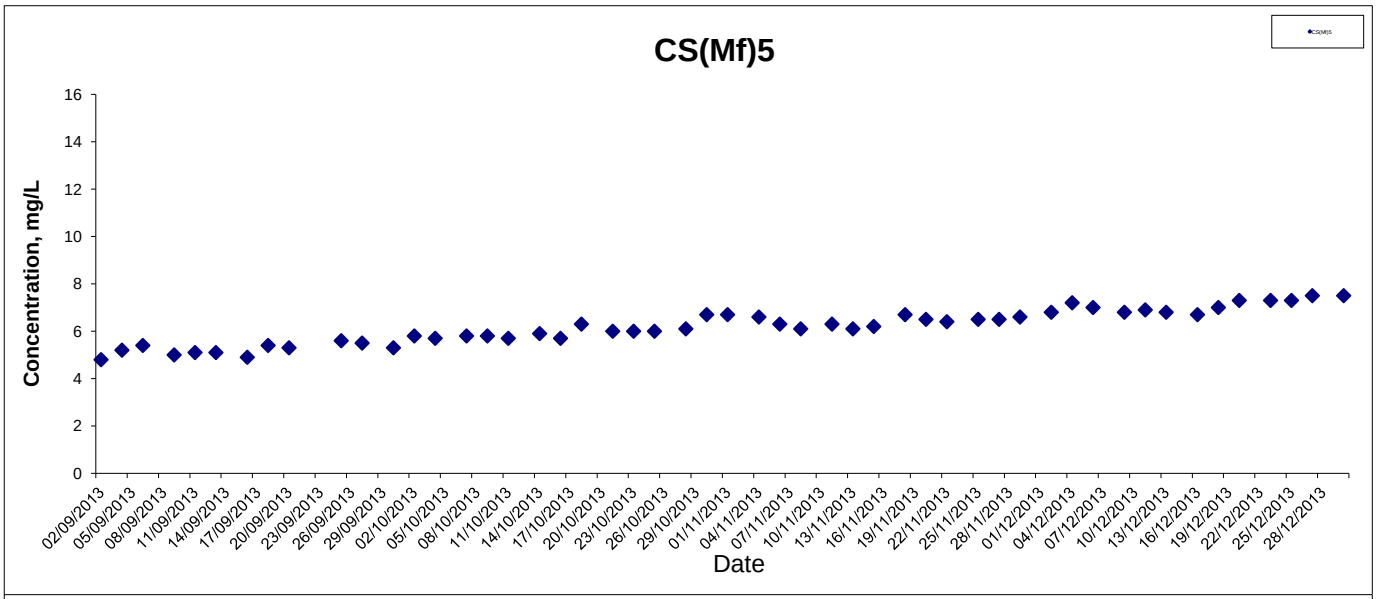
Dissolved Oxygen (Bottom) at Mid-Flood Tide

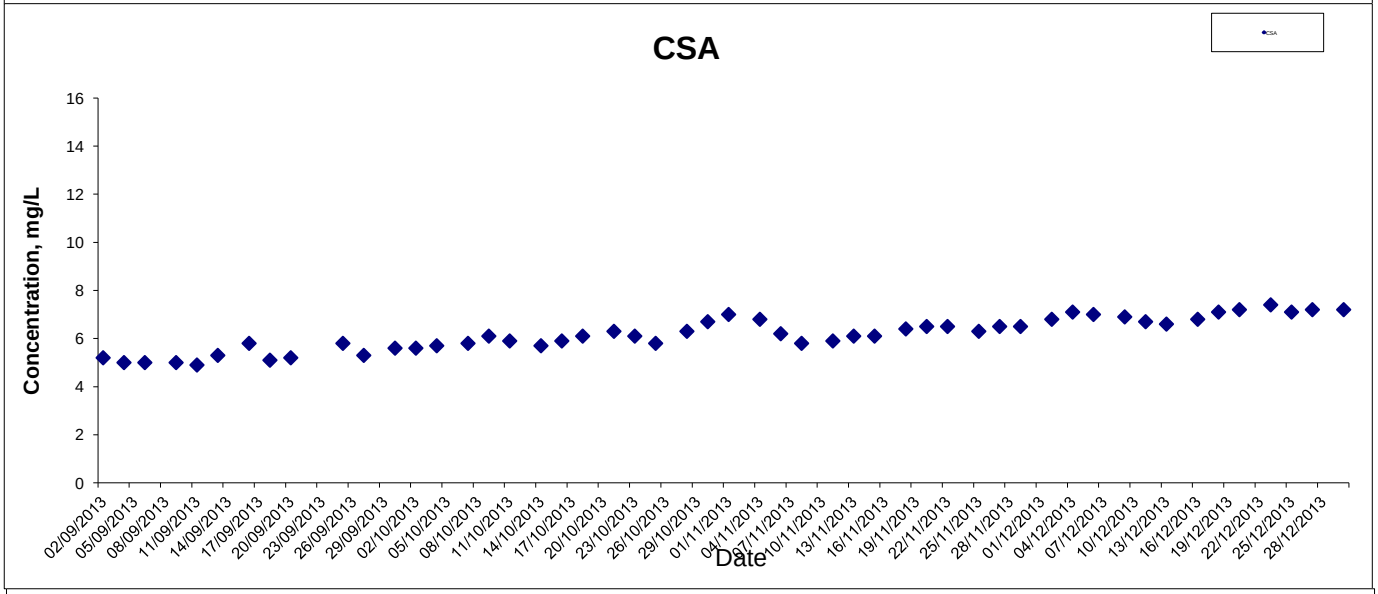


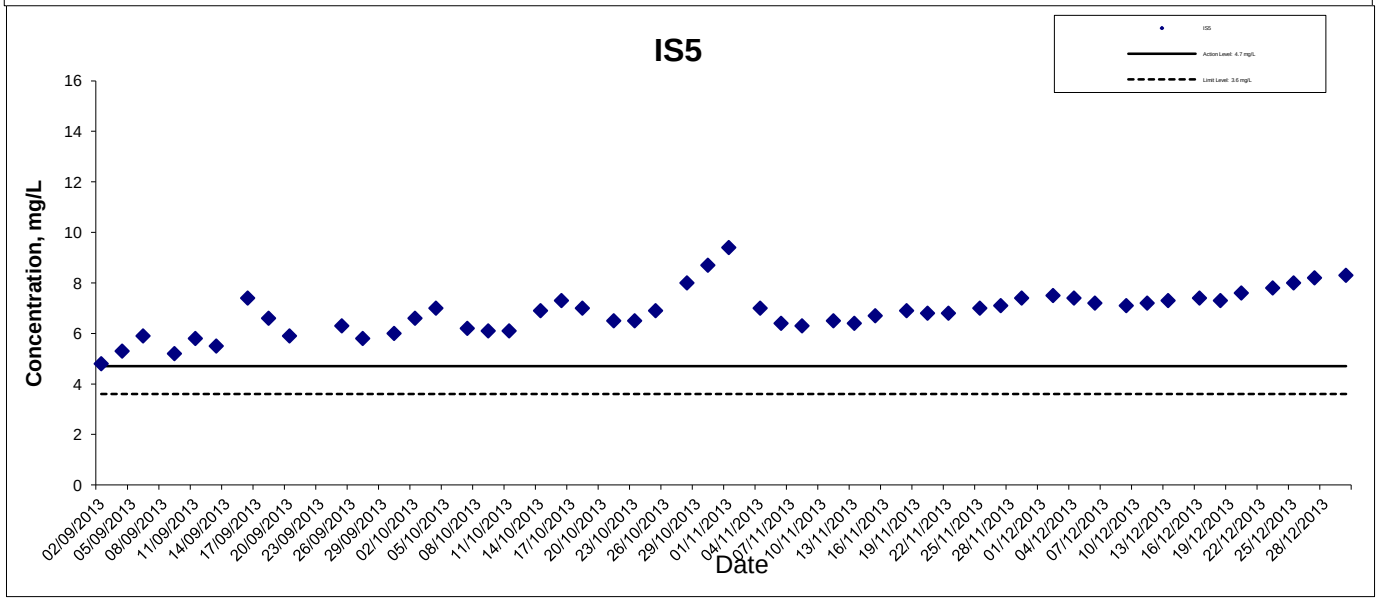




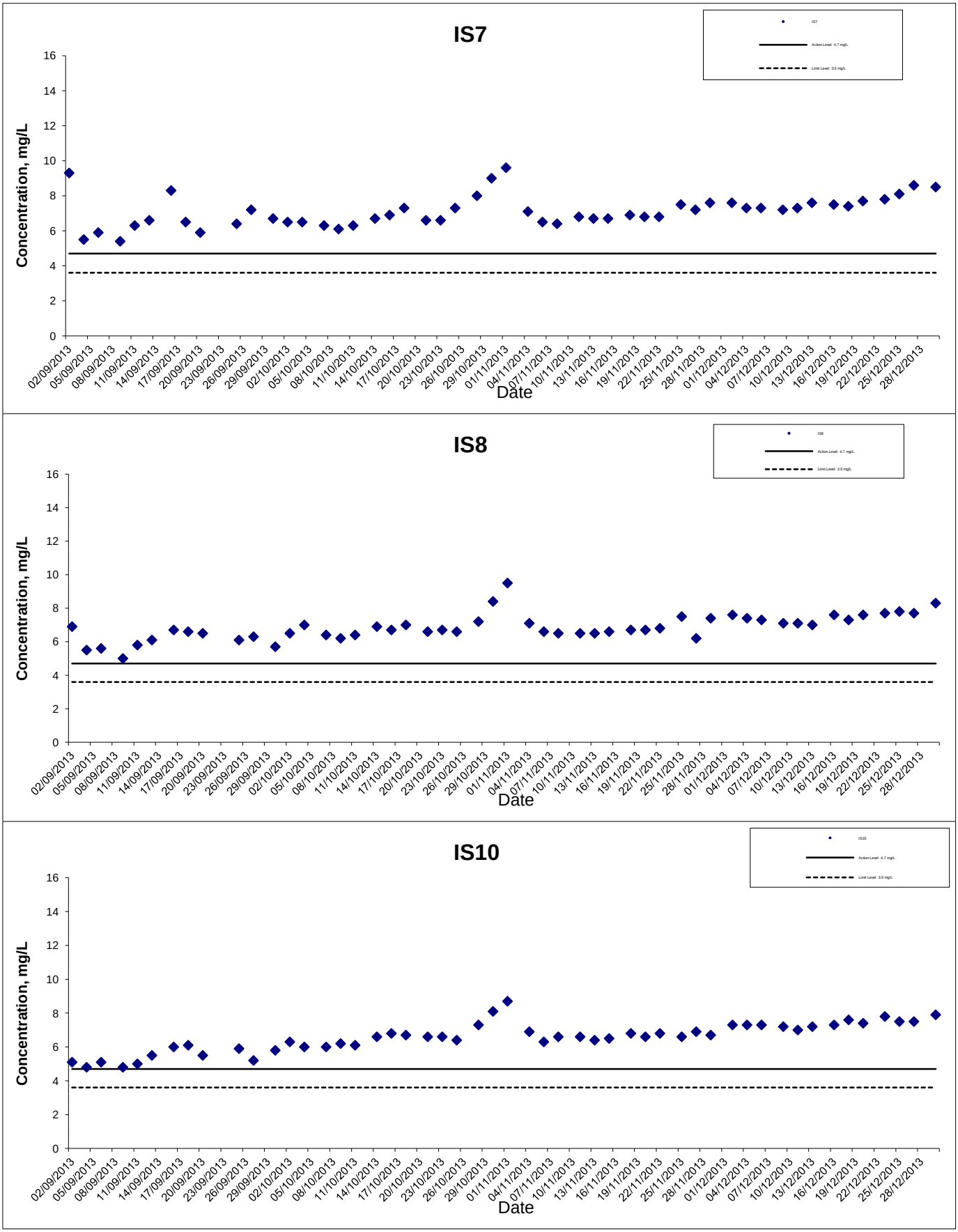
Dissolved Oxygen (Bottom) at Mid-Flood Tide



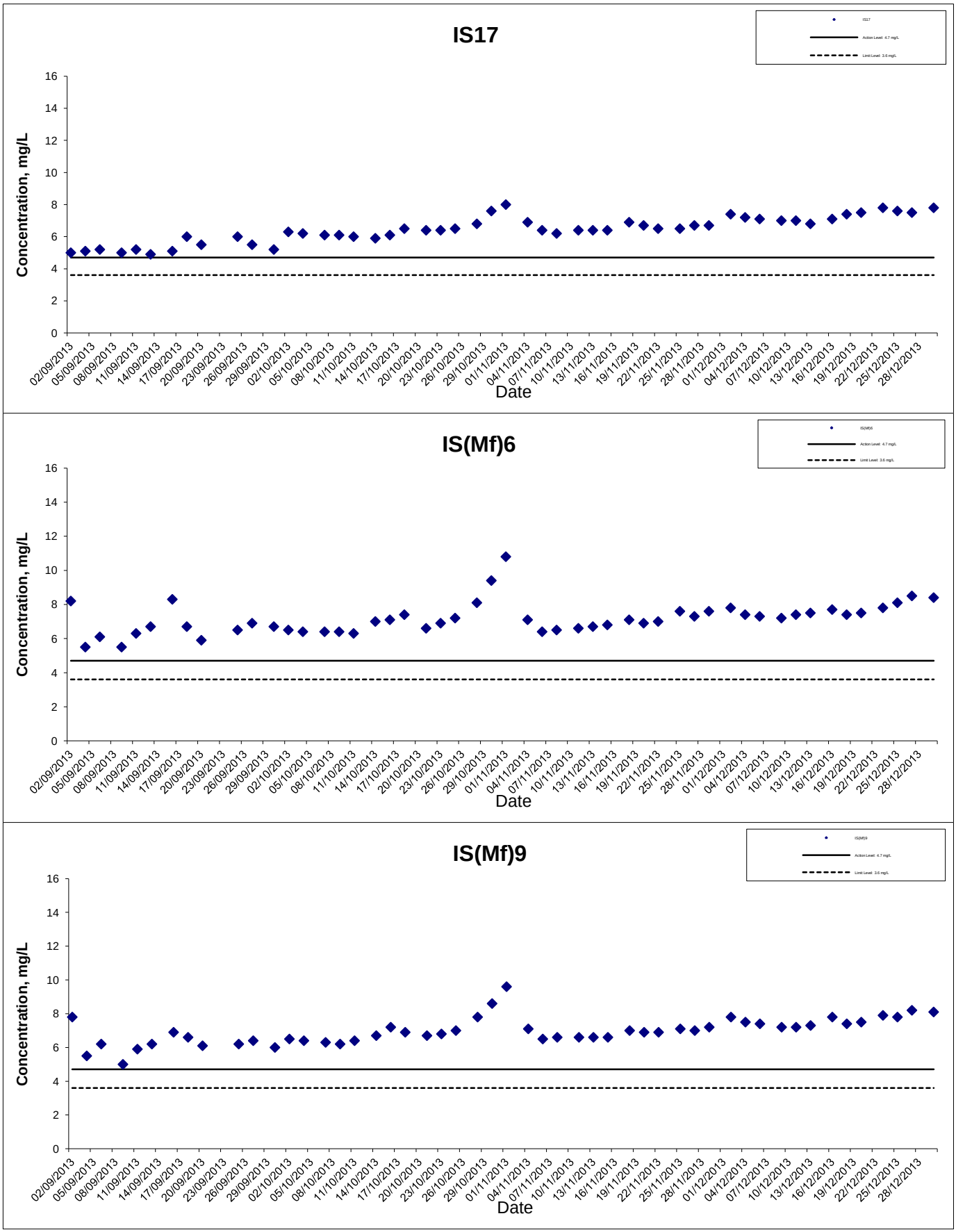




Dissolved Oxygen (Bottom) at Mid-Flood Tide



Dissolved Oxygen (Bottom) at Mid-Flood Tide

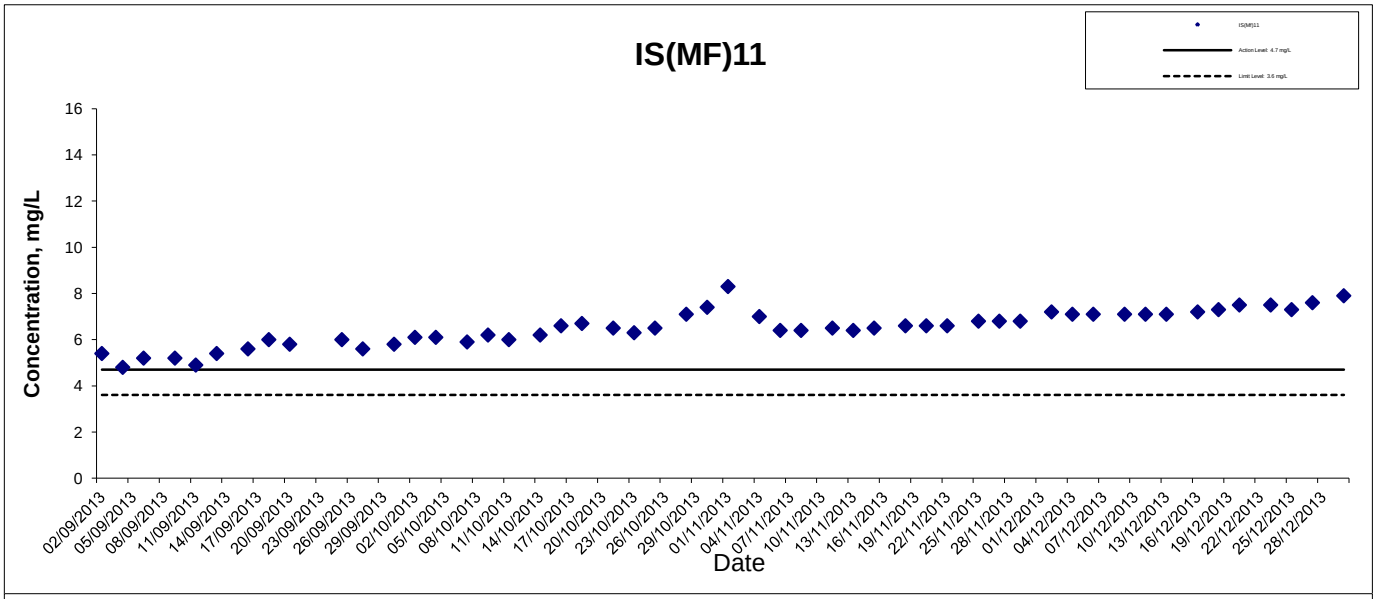


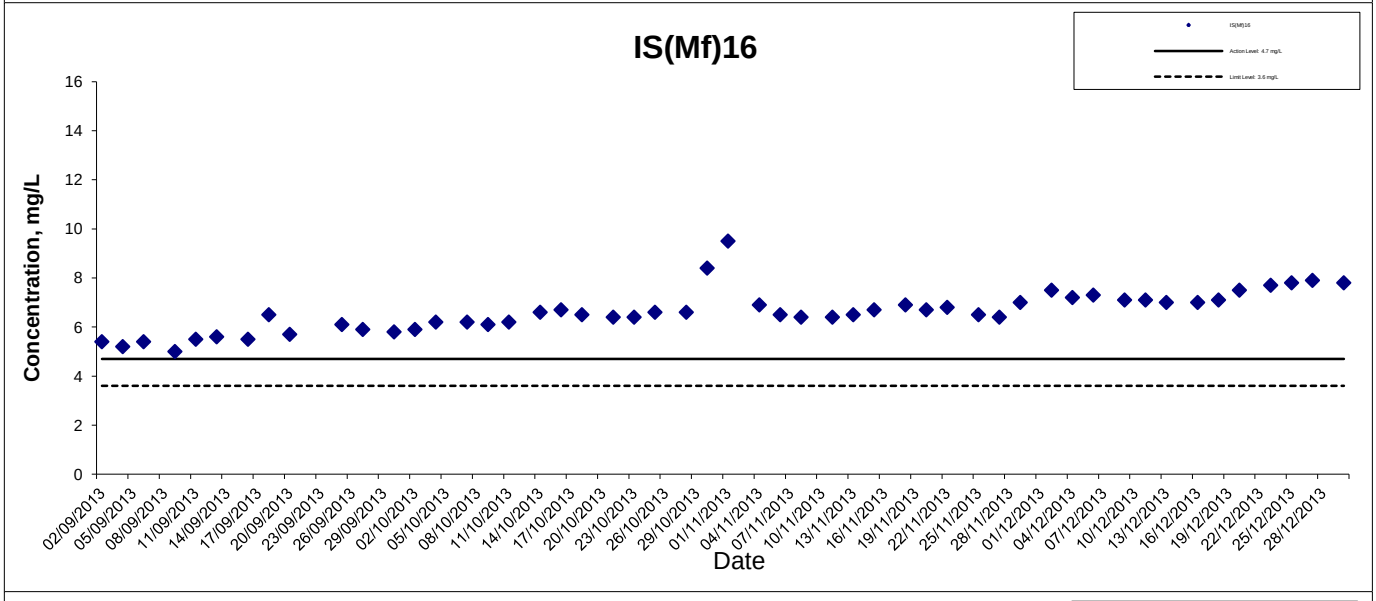
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

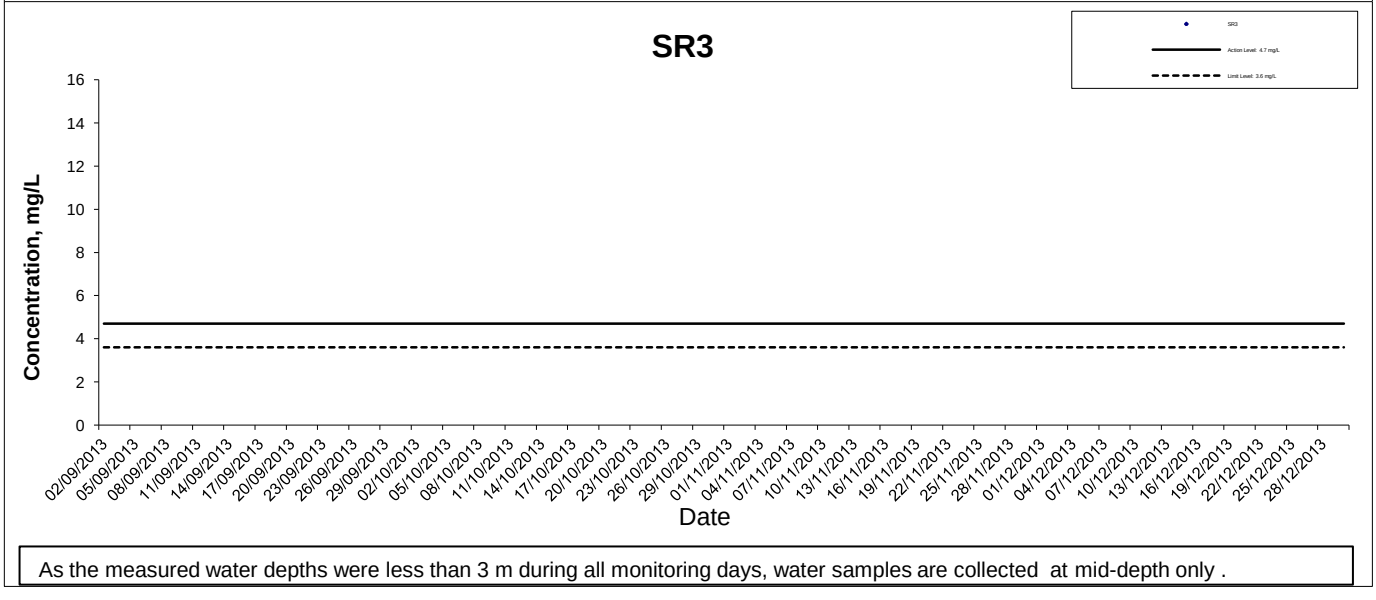
Graphical Presentation of Impact Water Quality Monitoring Results

Project No.: 60249820 **Date: Dec 2013** **Appendix J**

Dissolved Oxygen (Bottom) at Mid-Flood Tide

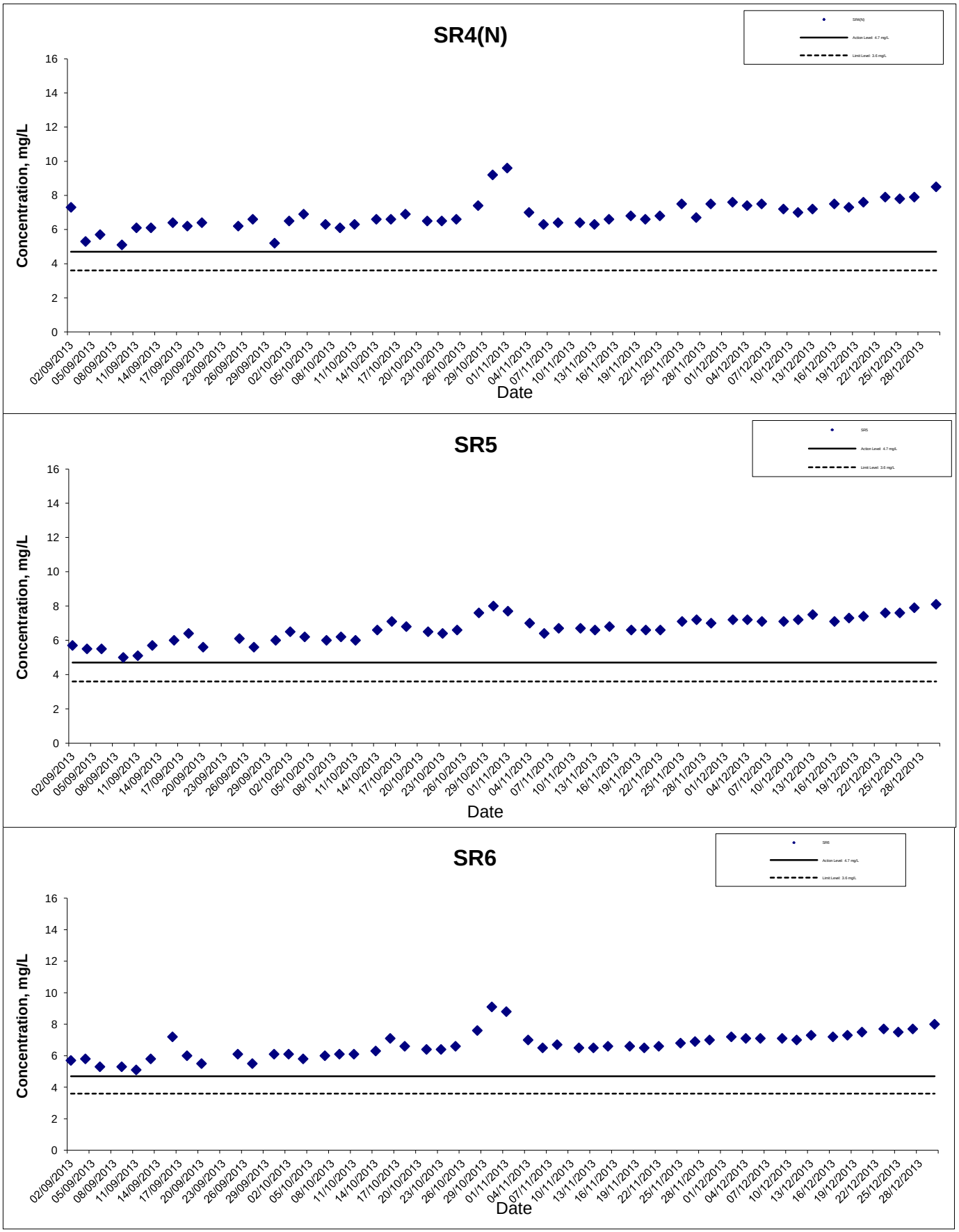




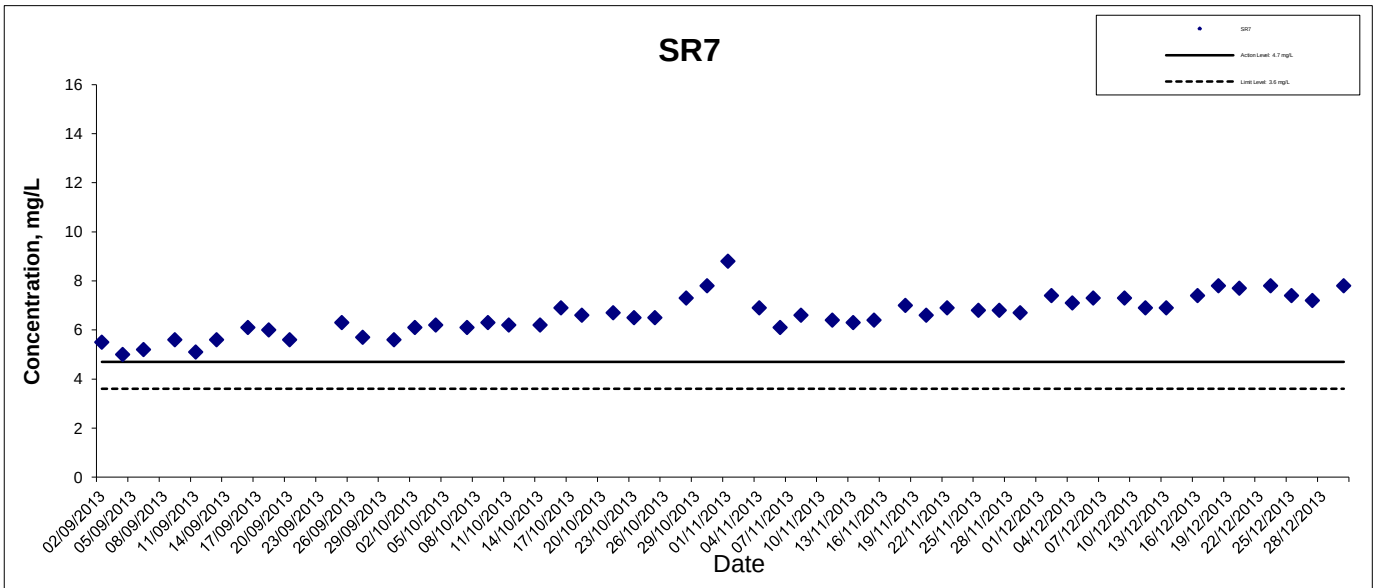


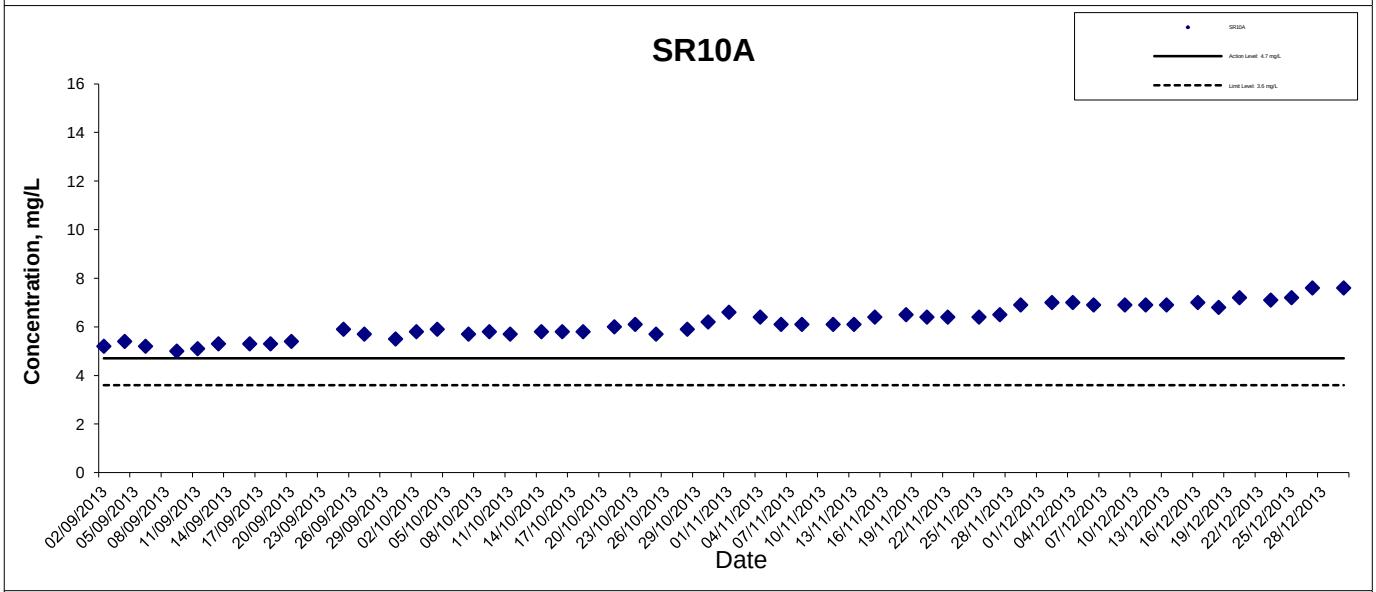
As the measured water depths were less than 3 m during all monitoring days, water samples are collected at mid-depth only .

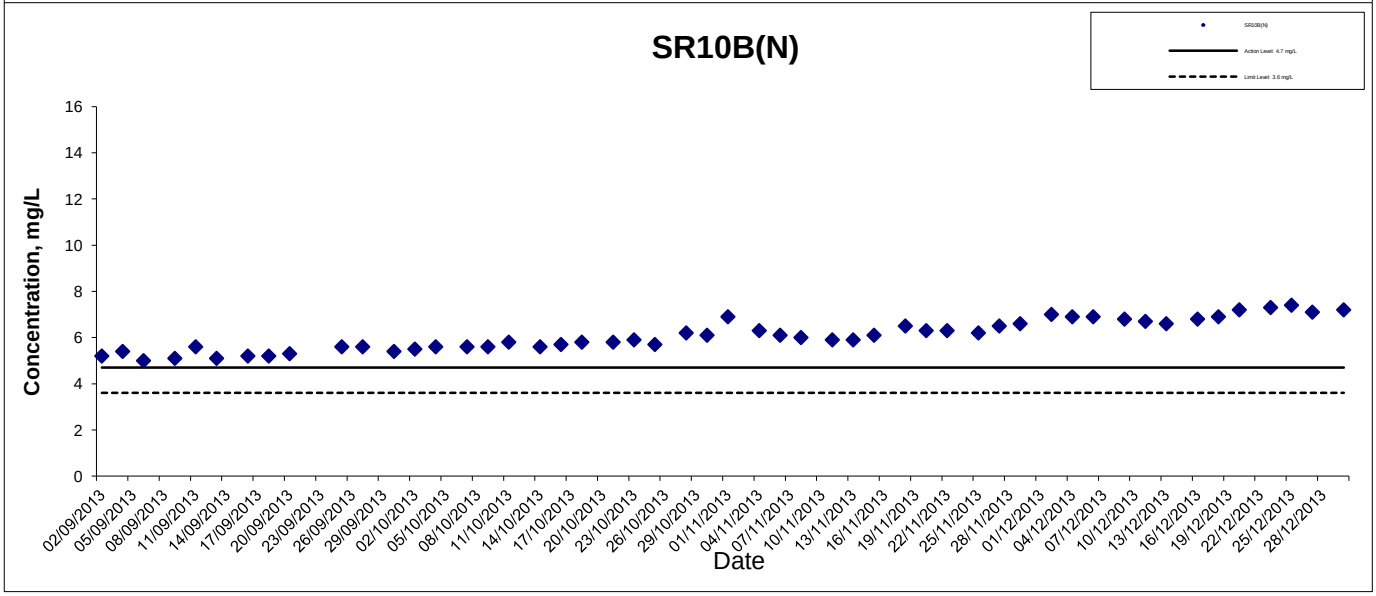
Dissolved Oxygen (Bottom) at Mid-Flood Tide



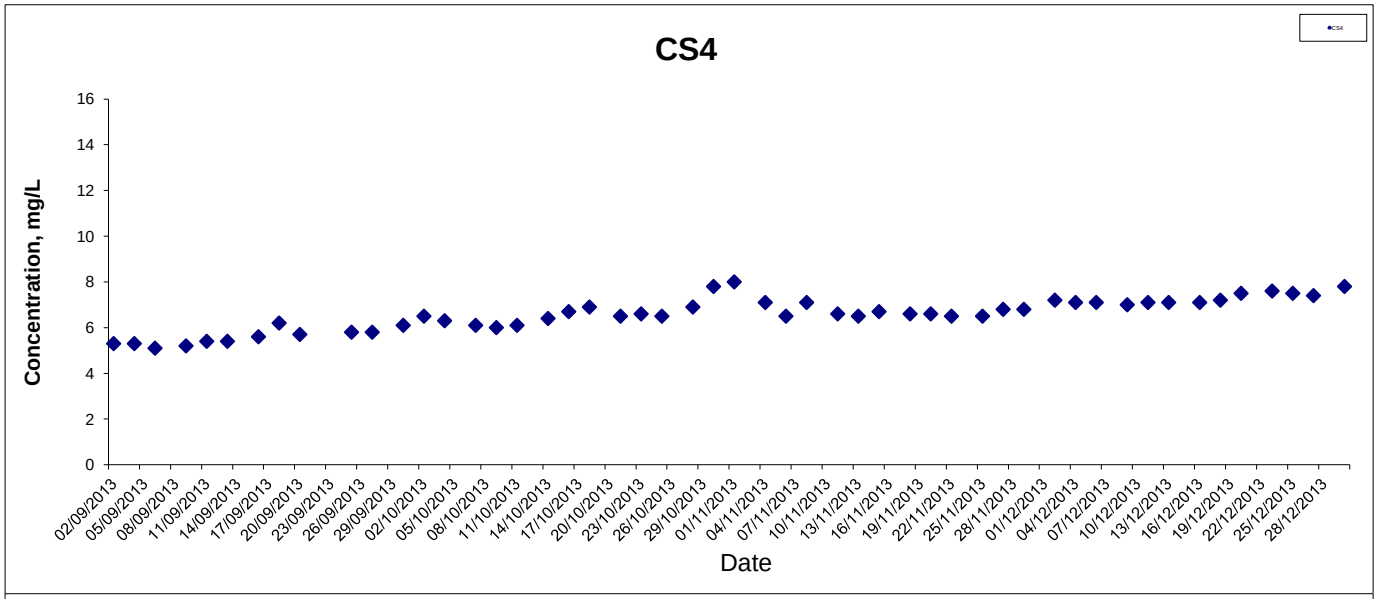
Dissolved Oxygen (Bottom) at Mid-Flood Tide

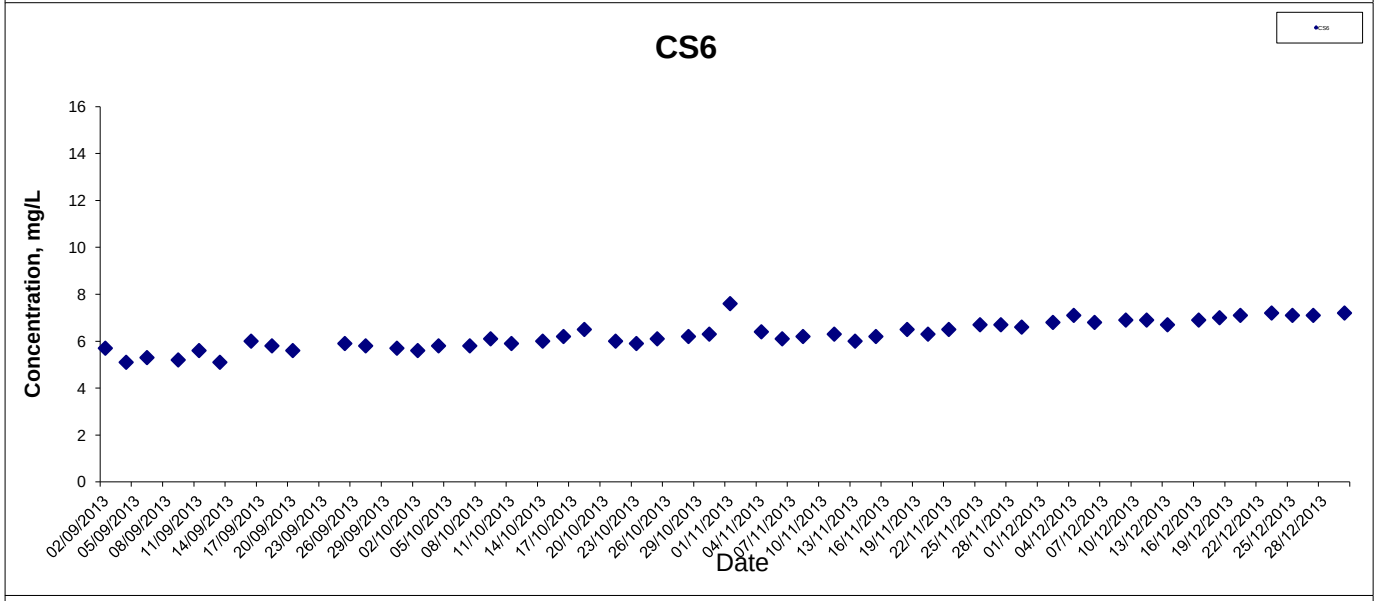


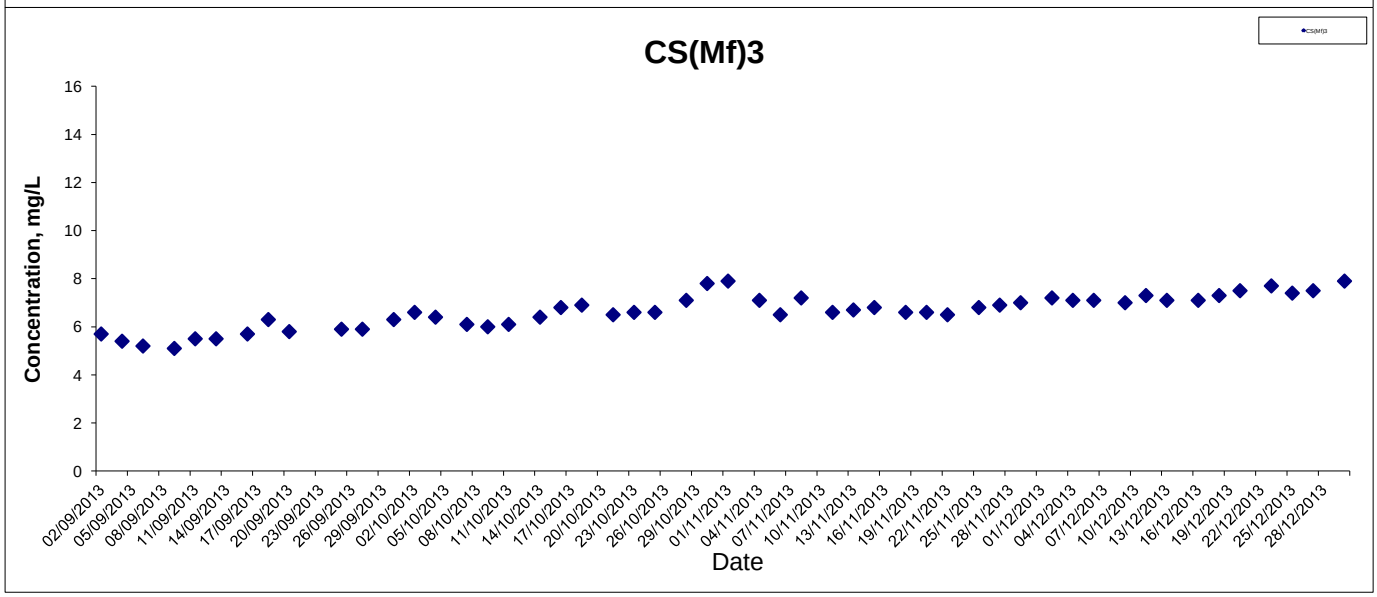




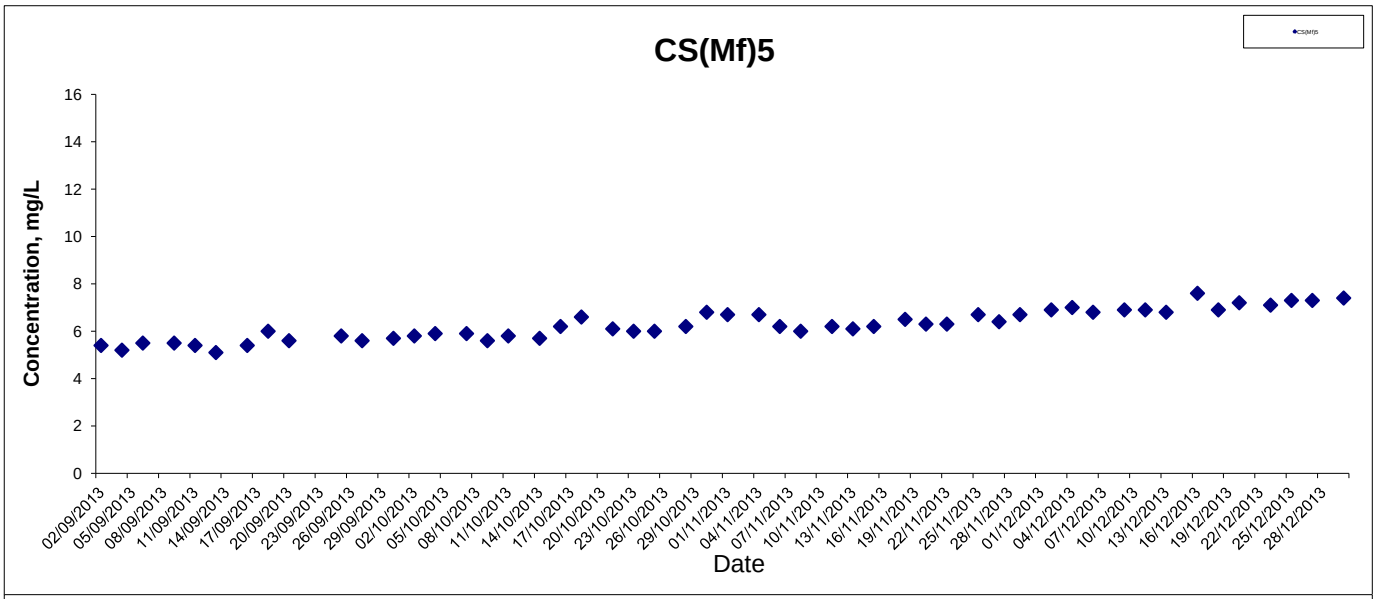
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

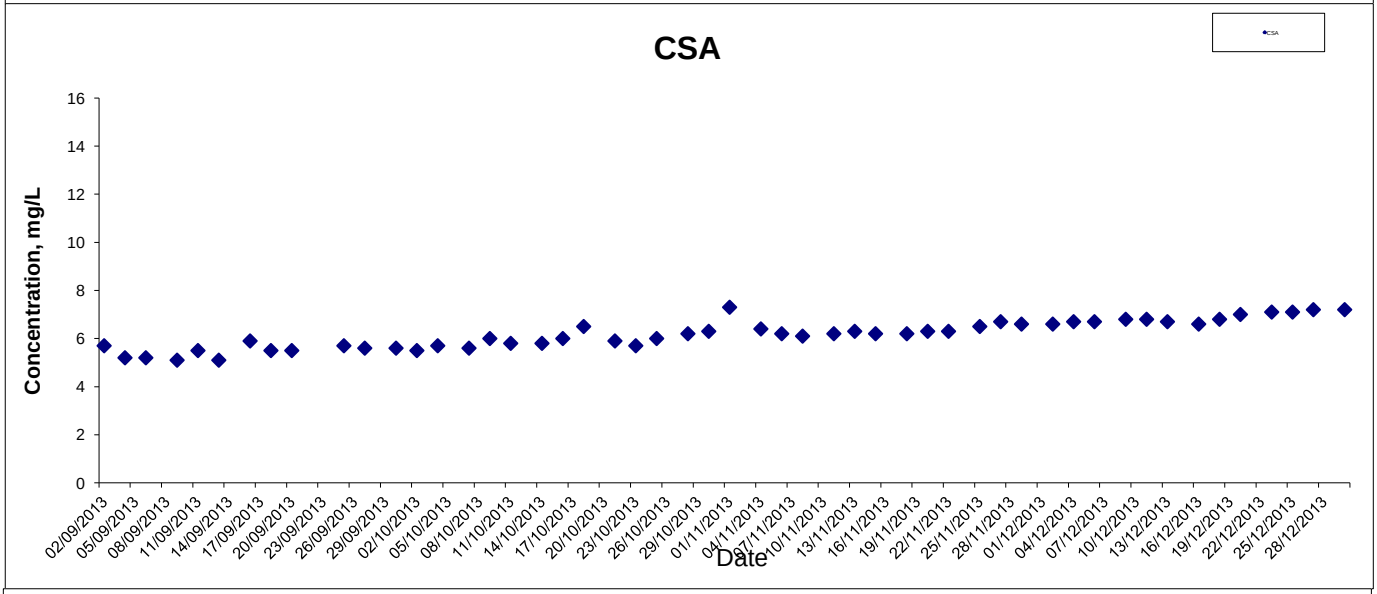


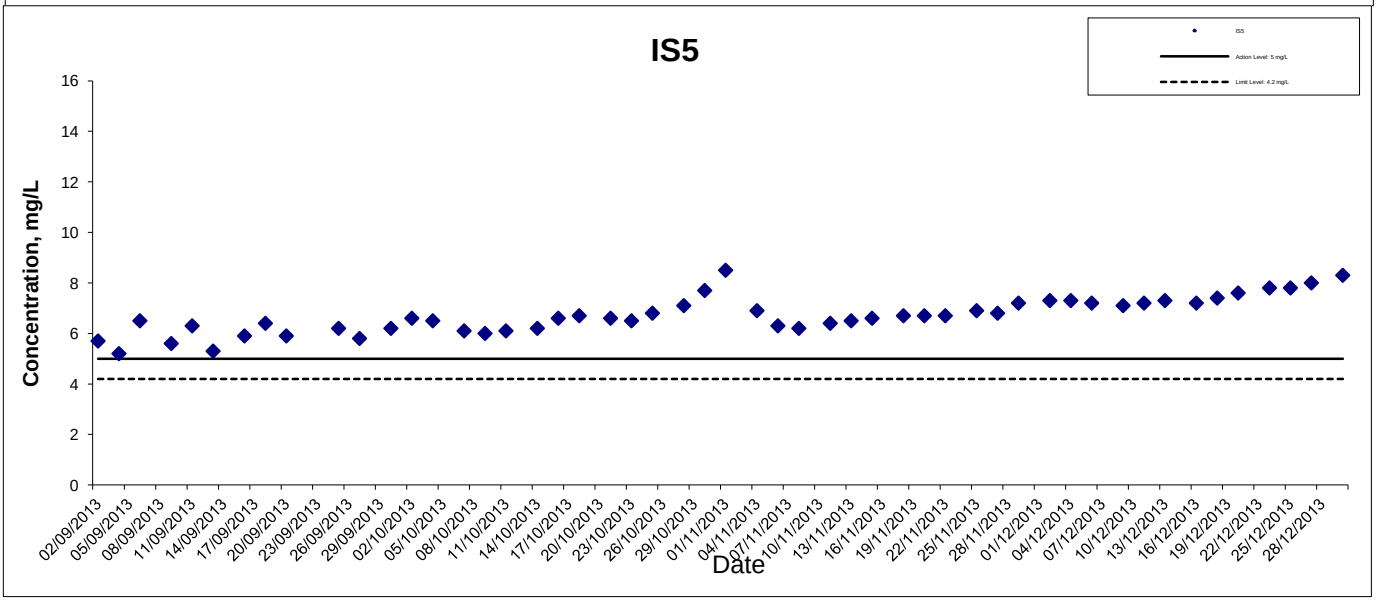




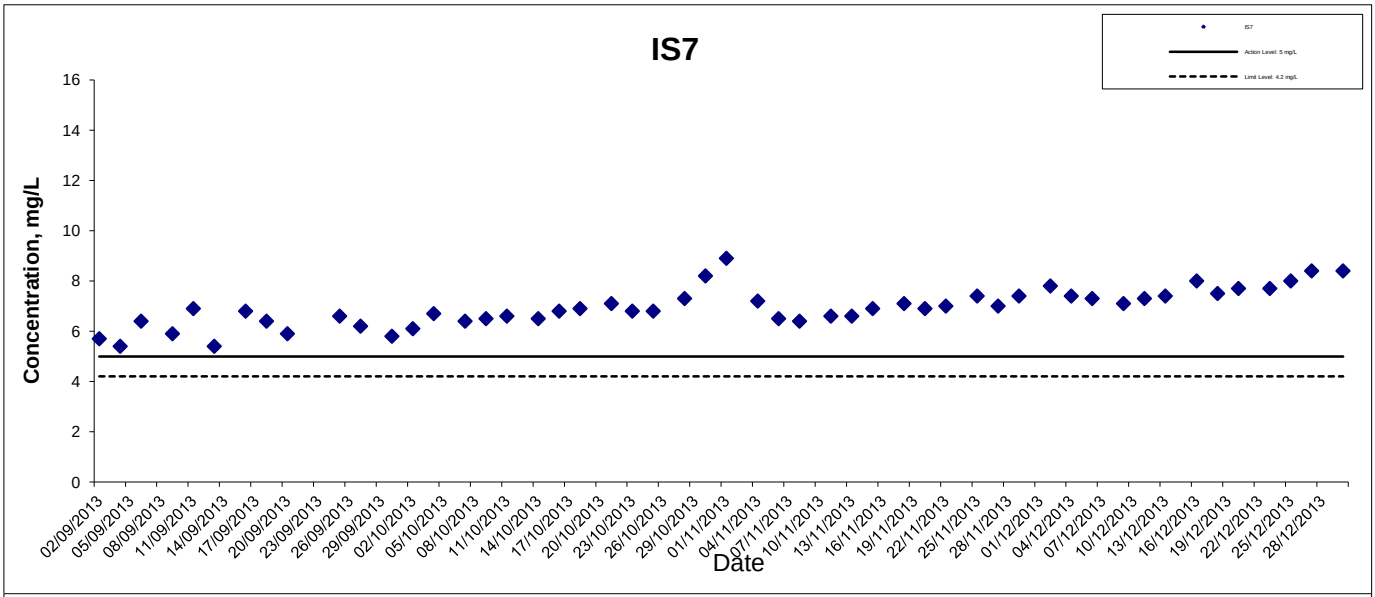
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

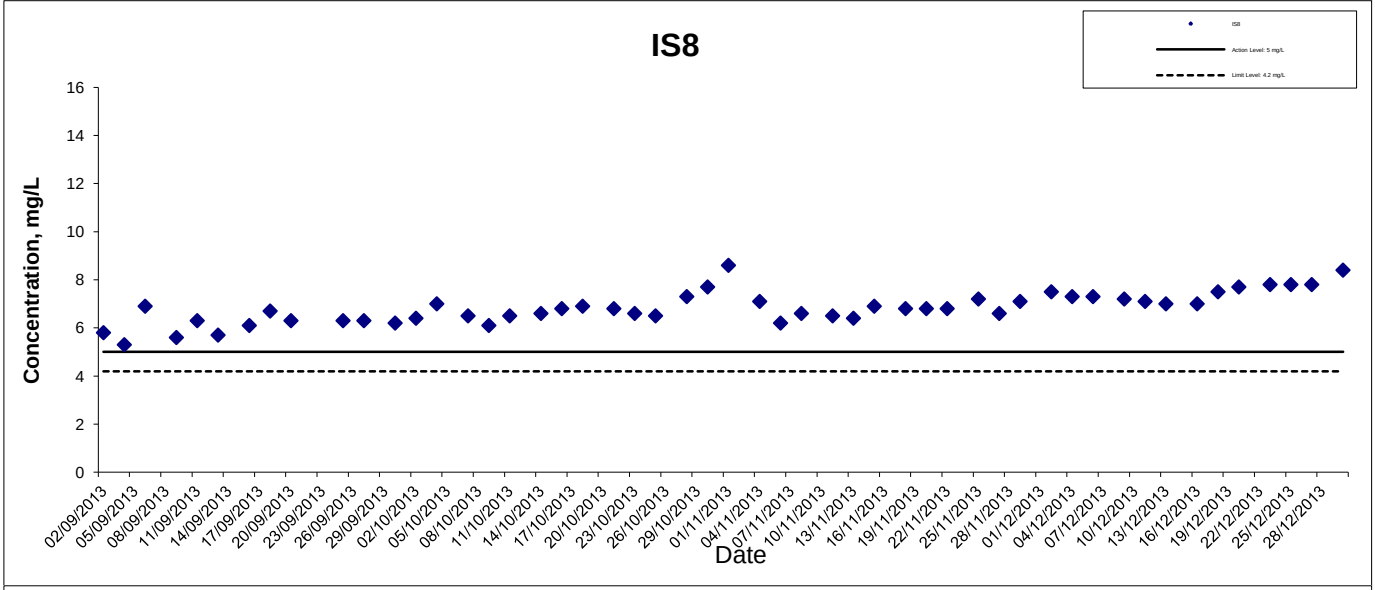


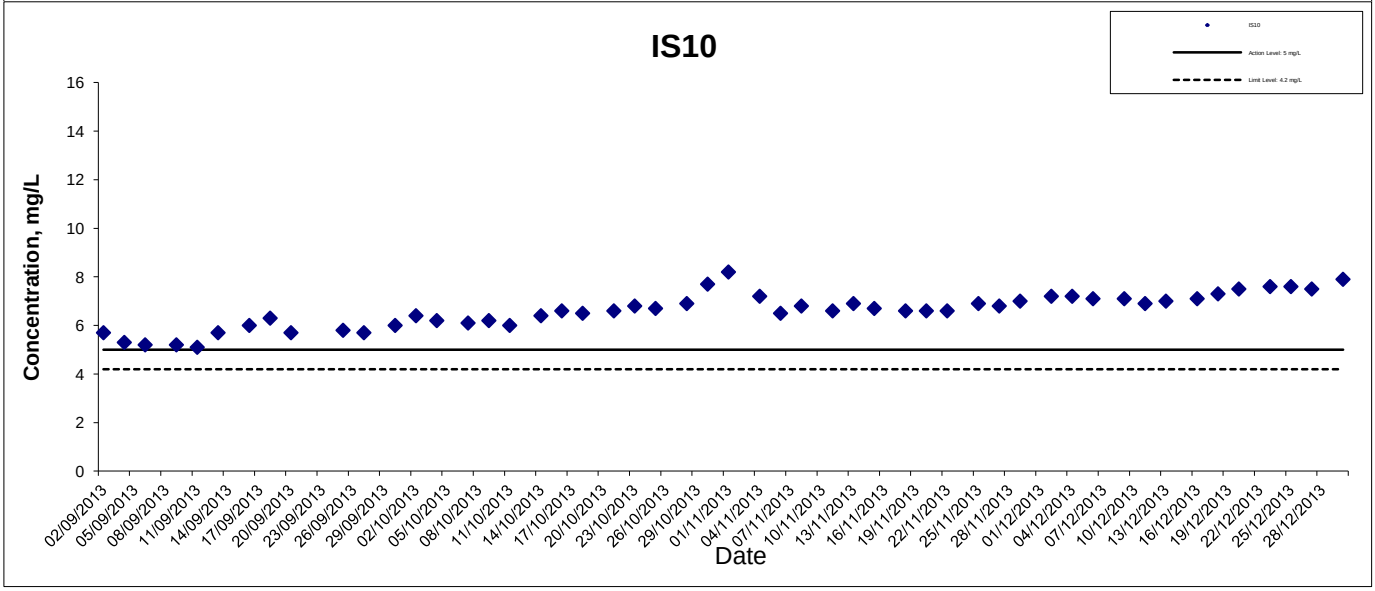




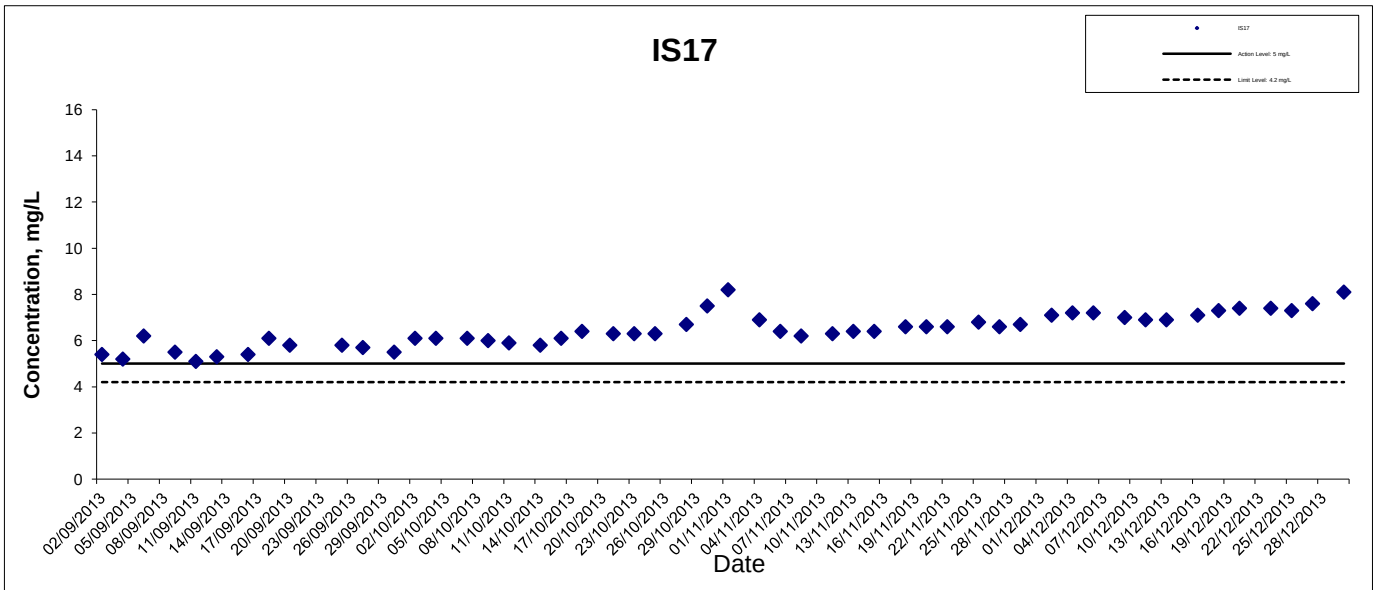
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

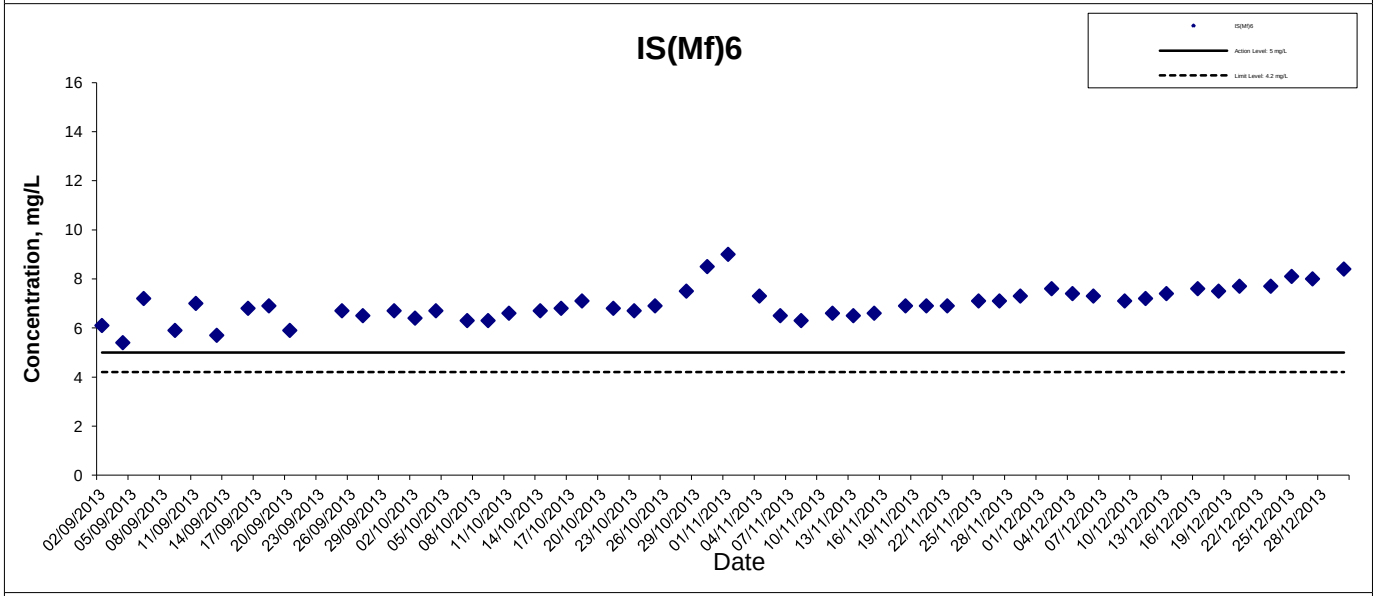


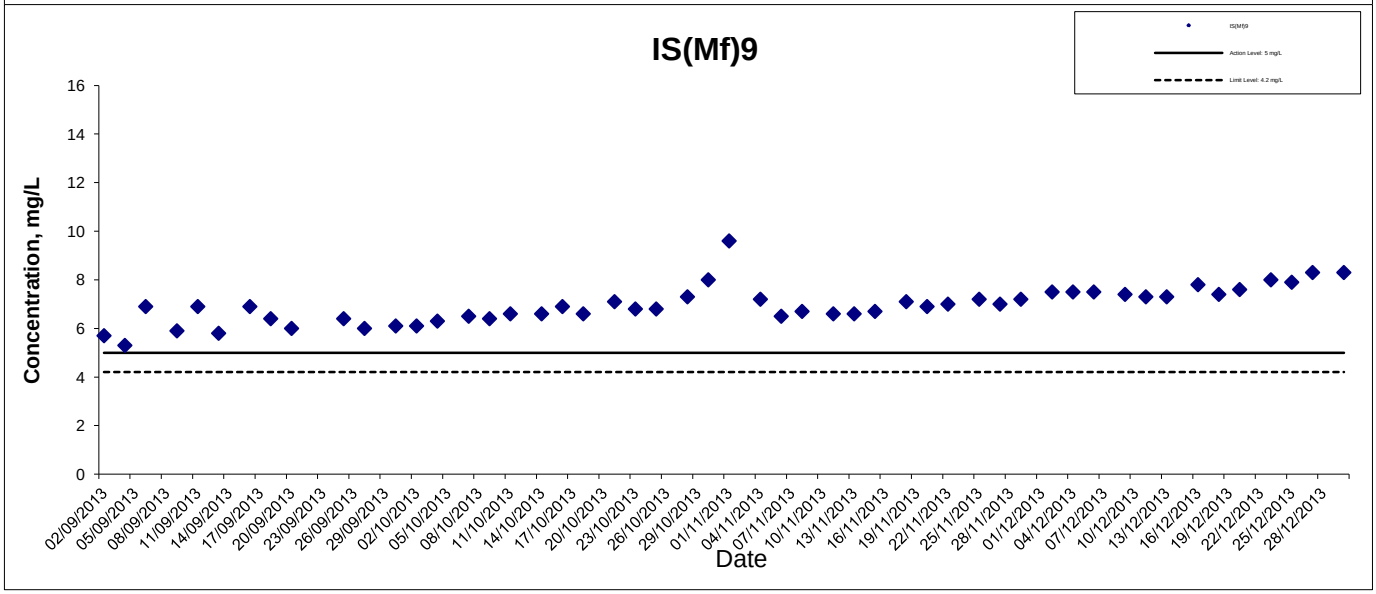




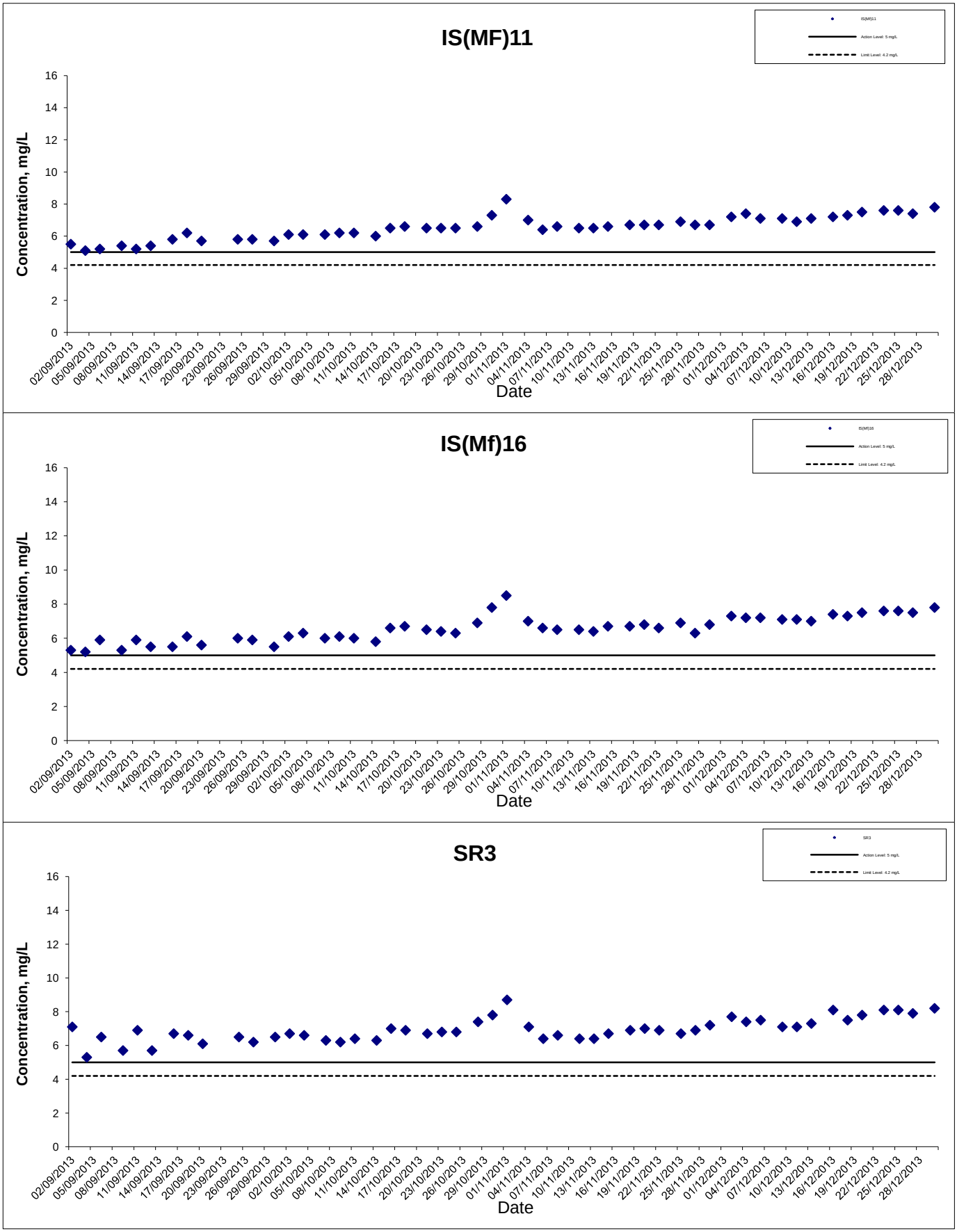
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



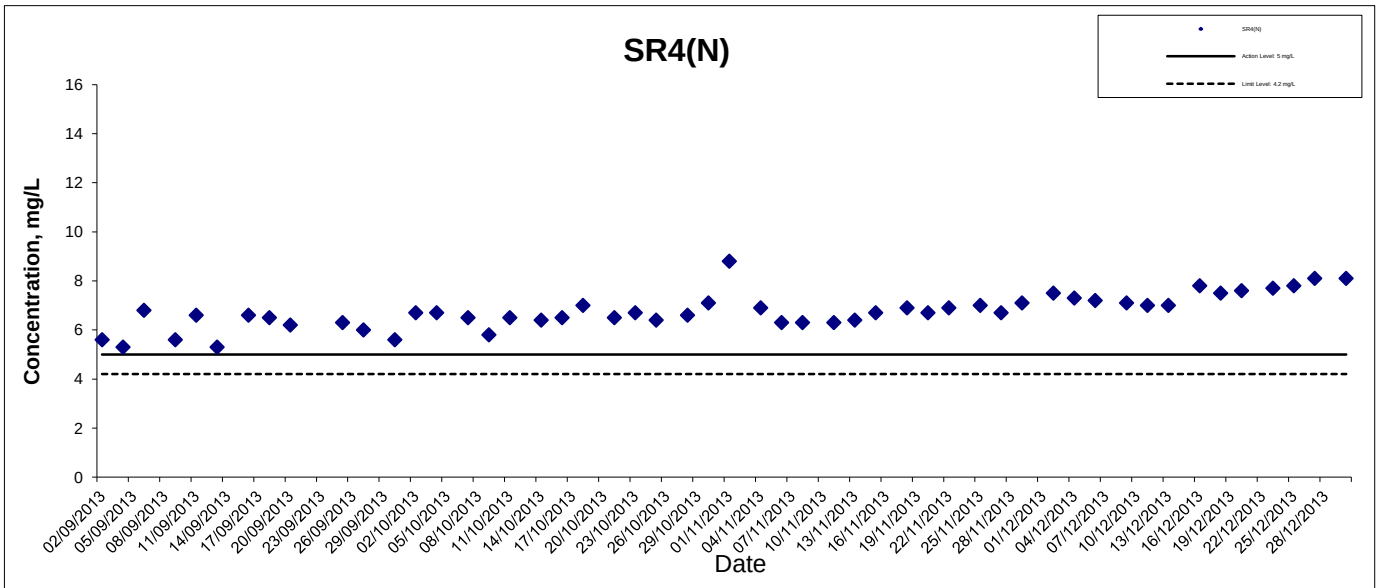


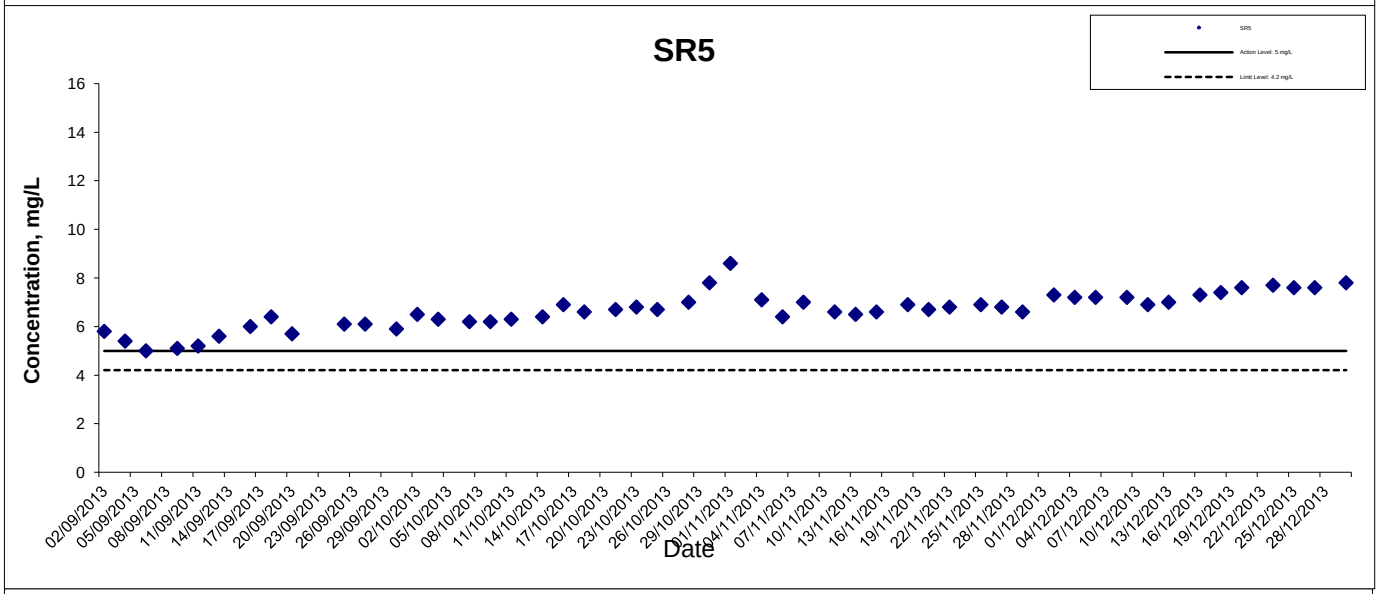


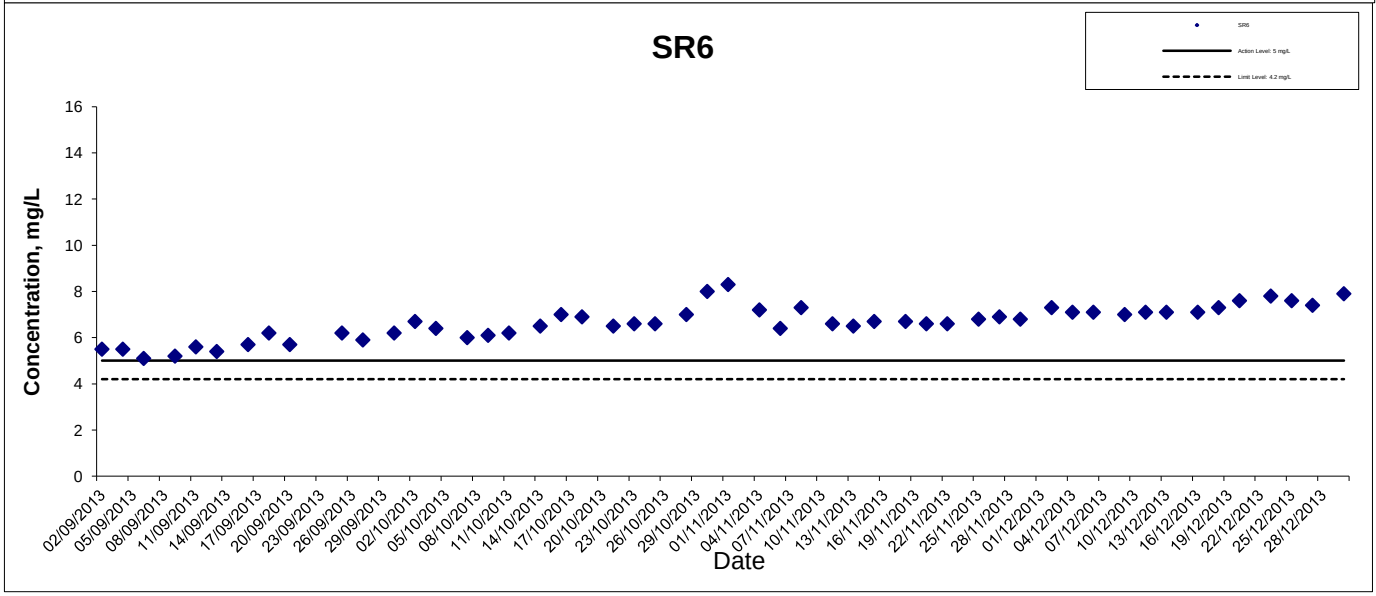
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



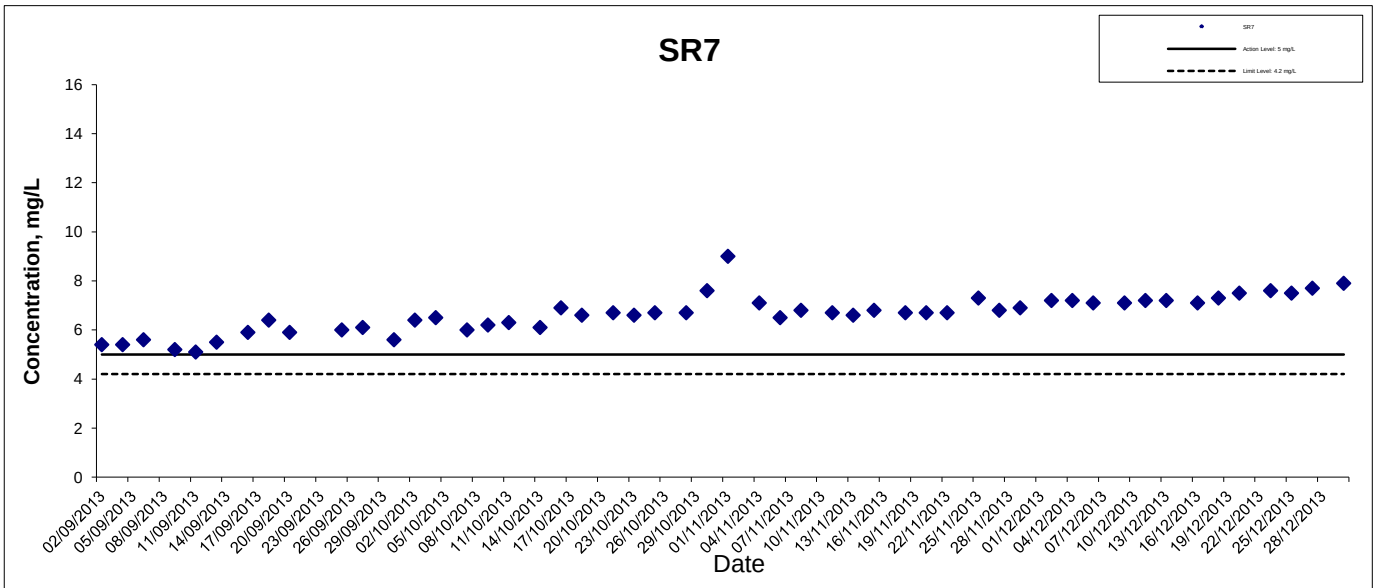
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



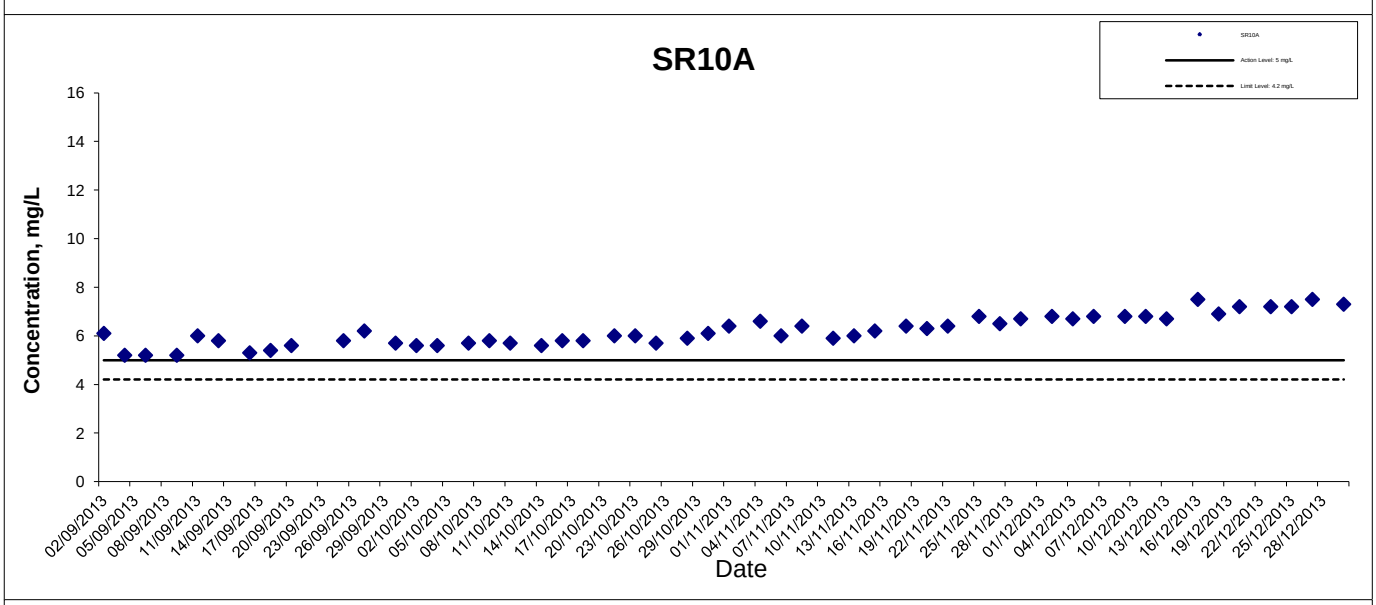




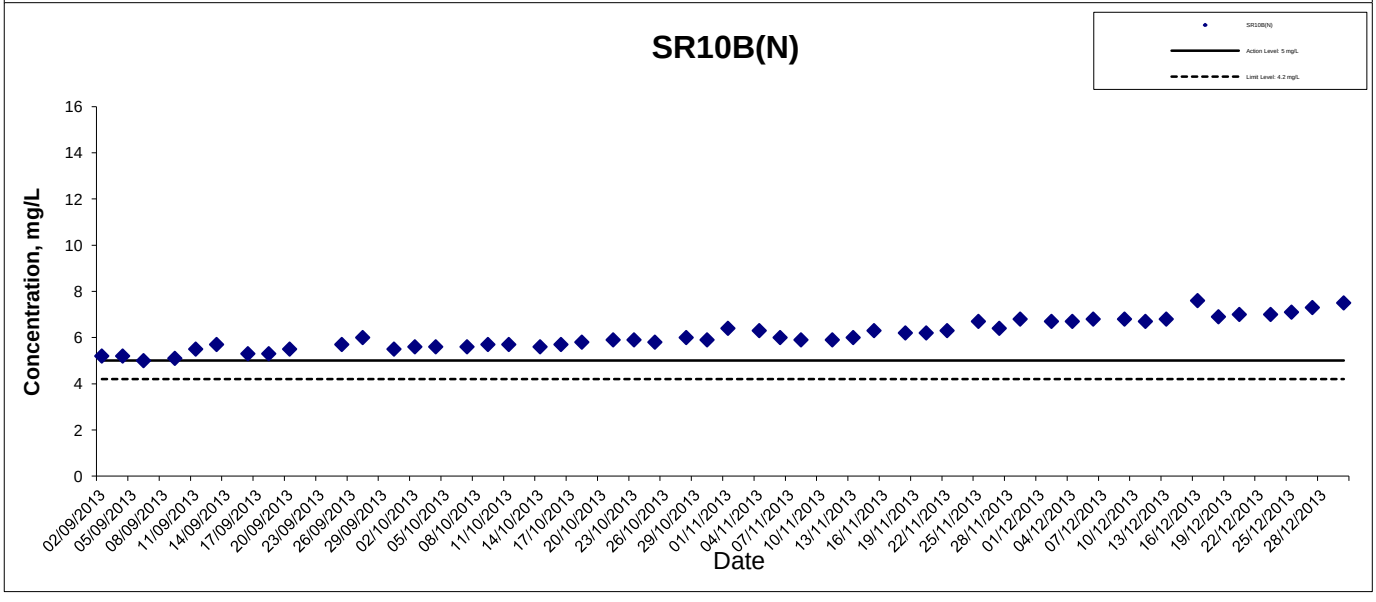
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



SR7

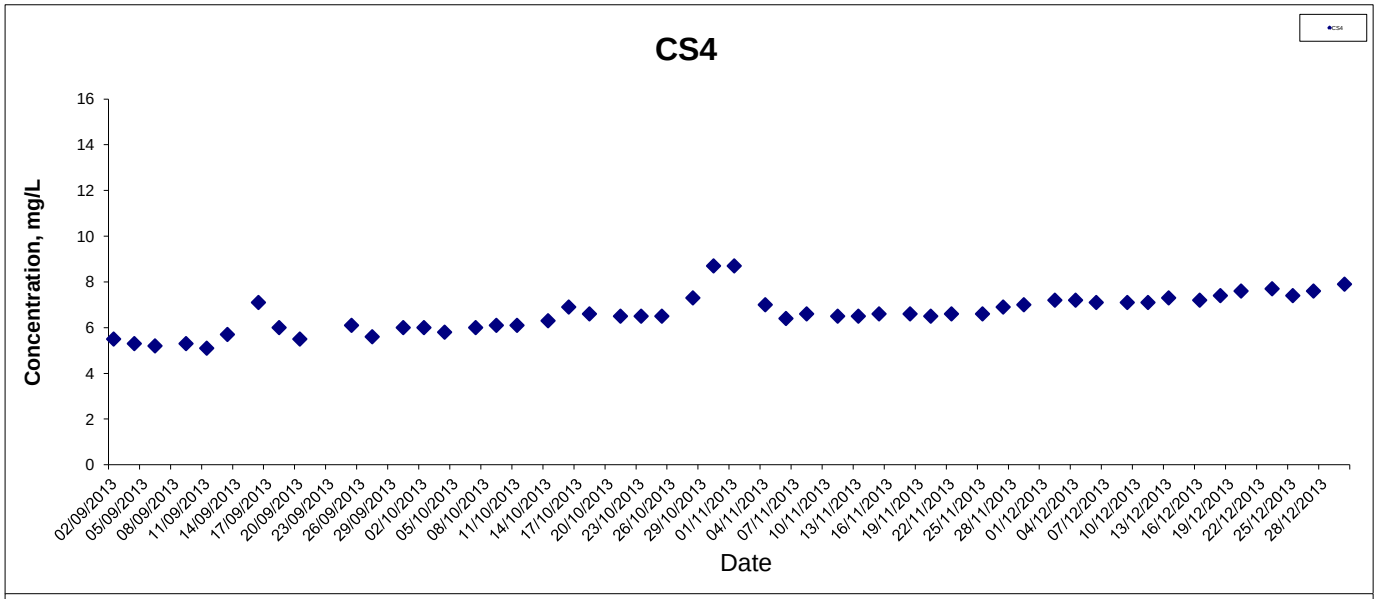


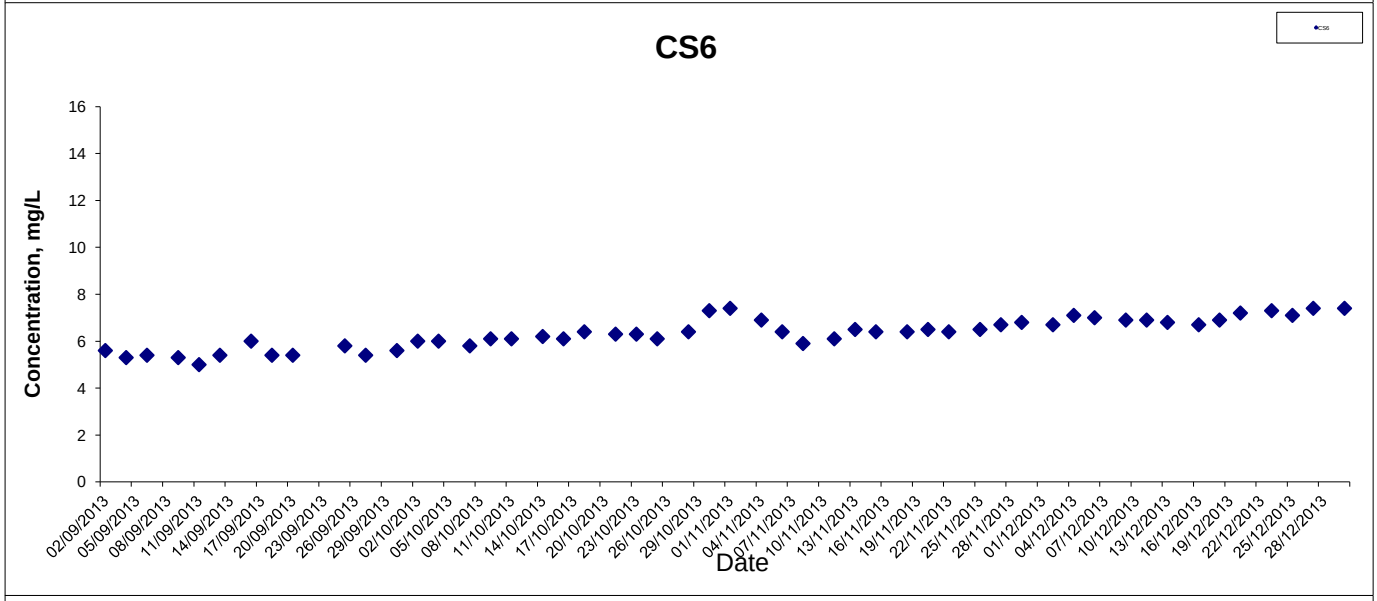
SR10A

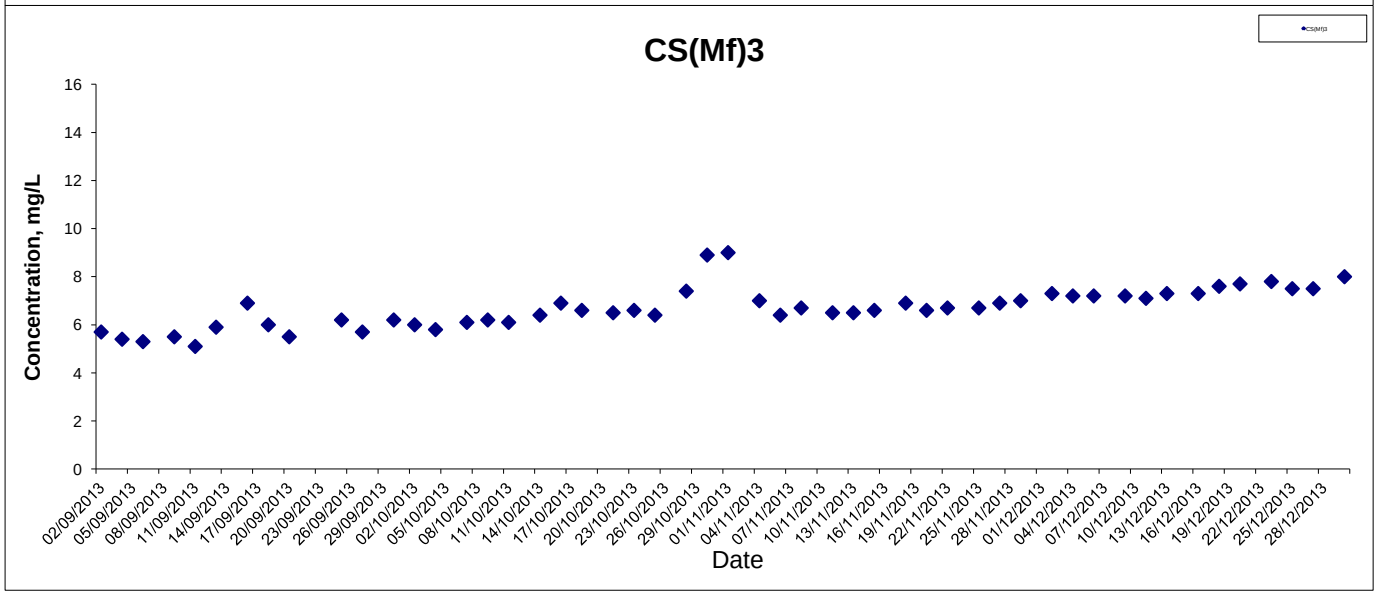


SR10B(N)

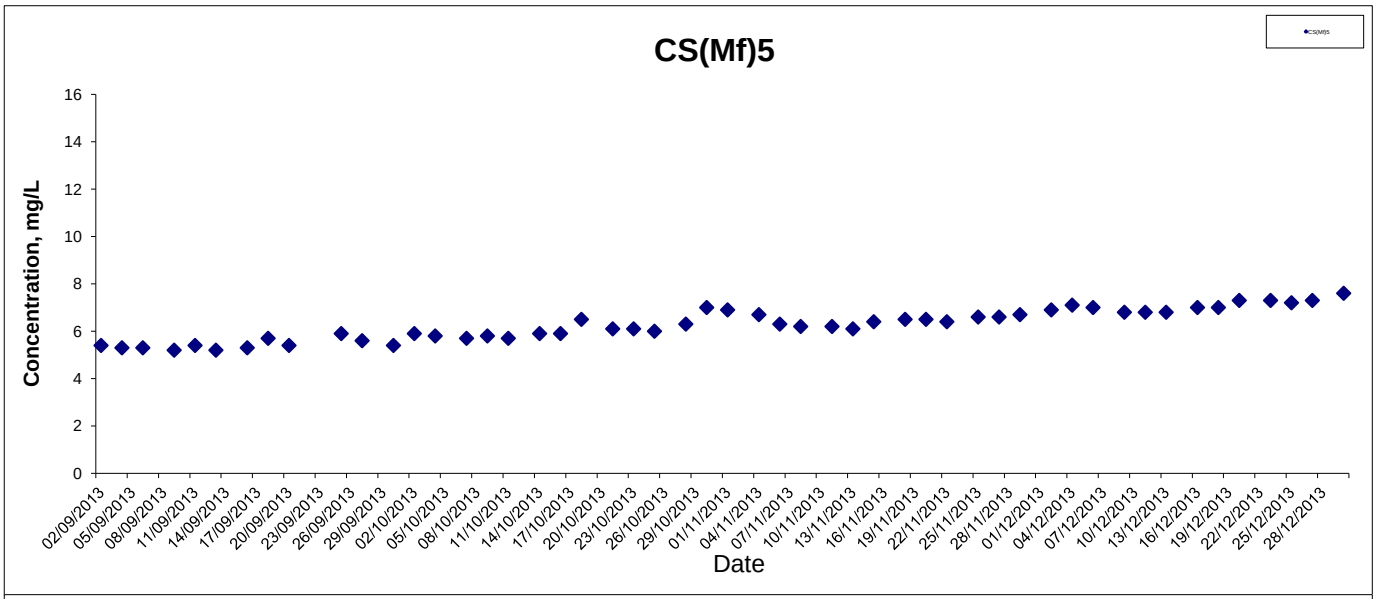
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

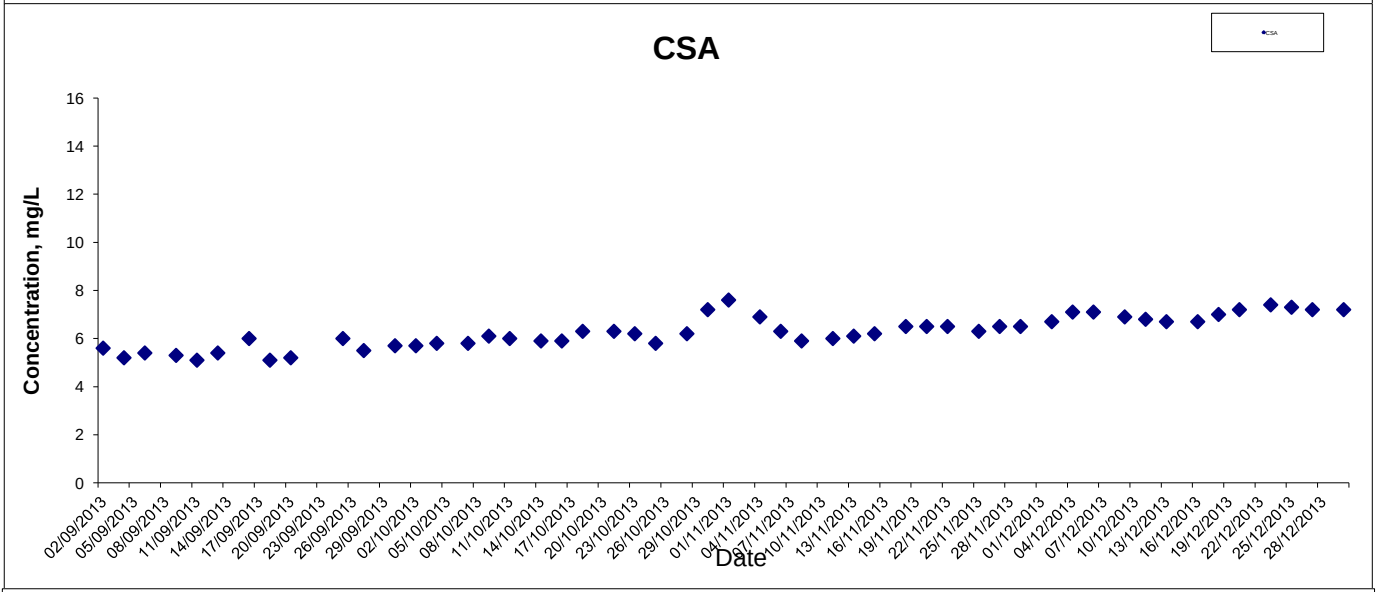


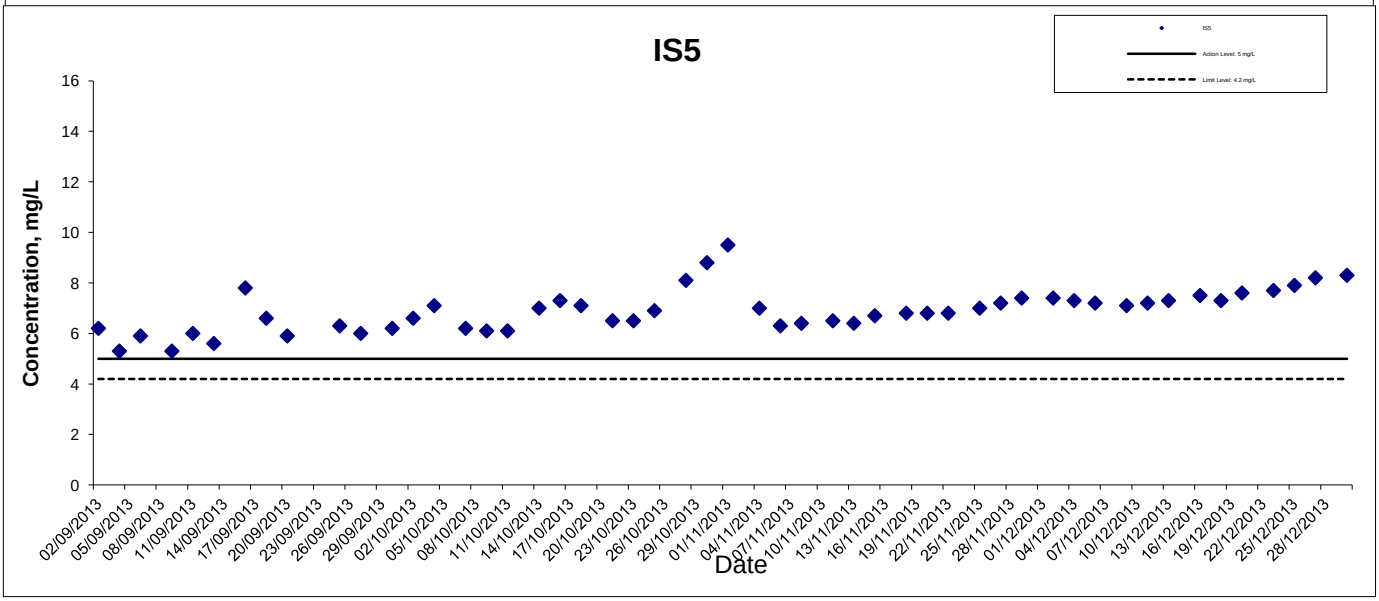




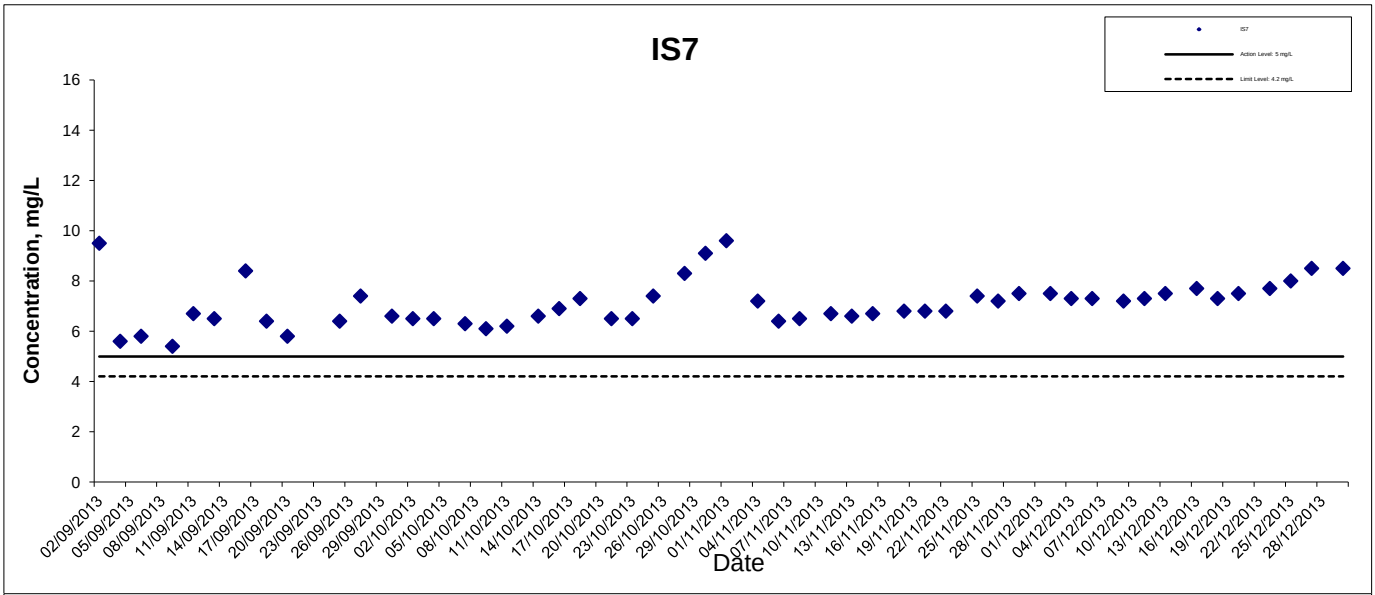
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

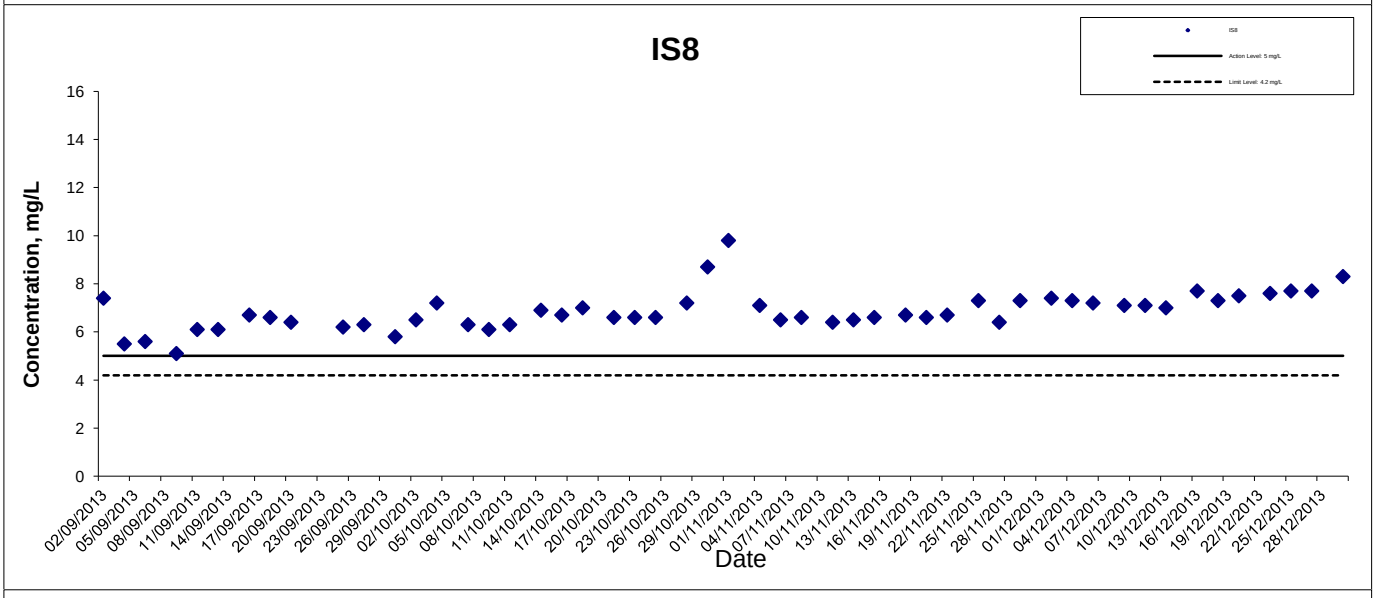


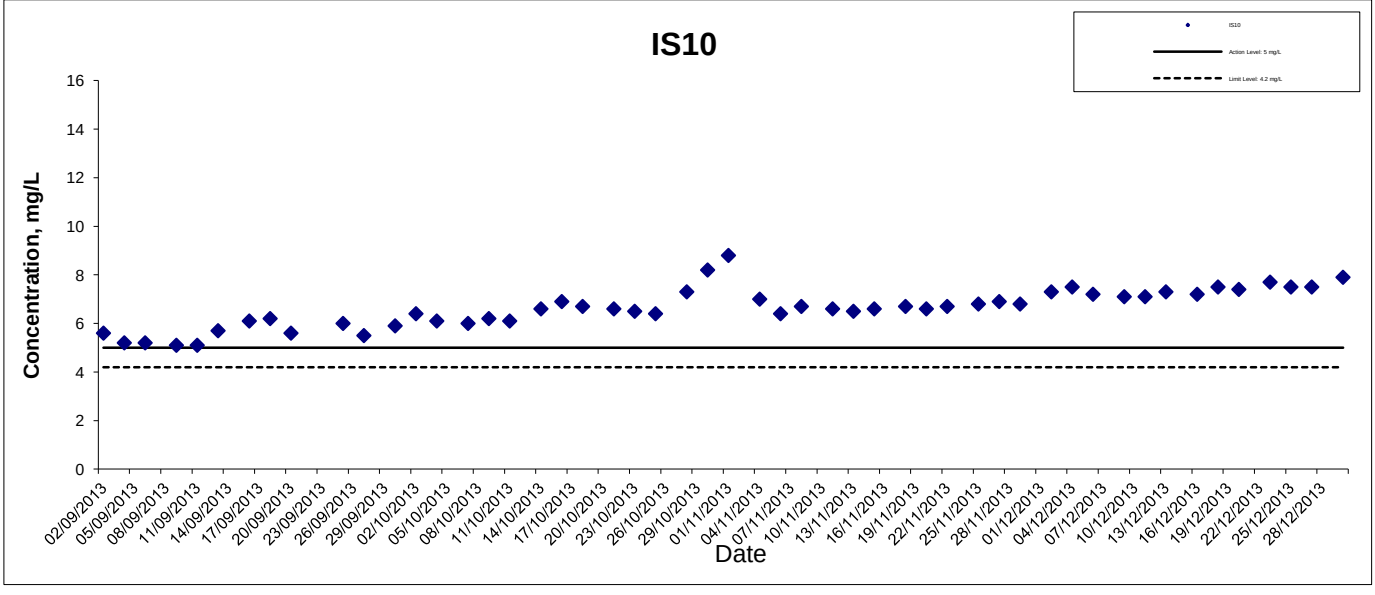




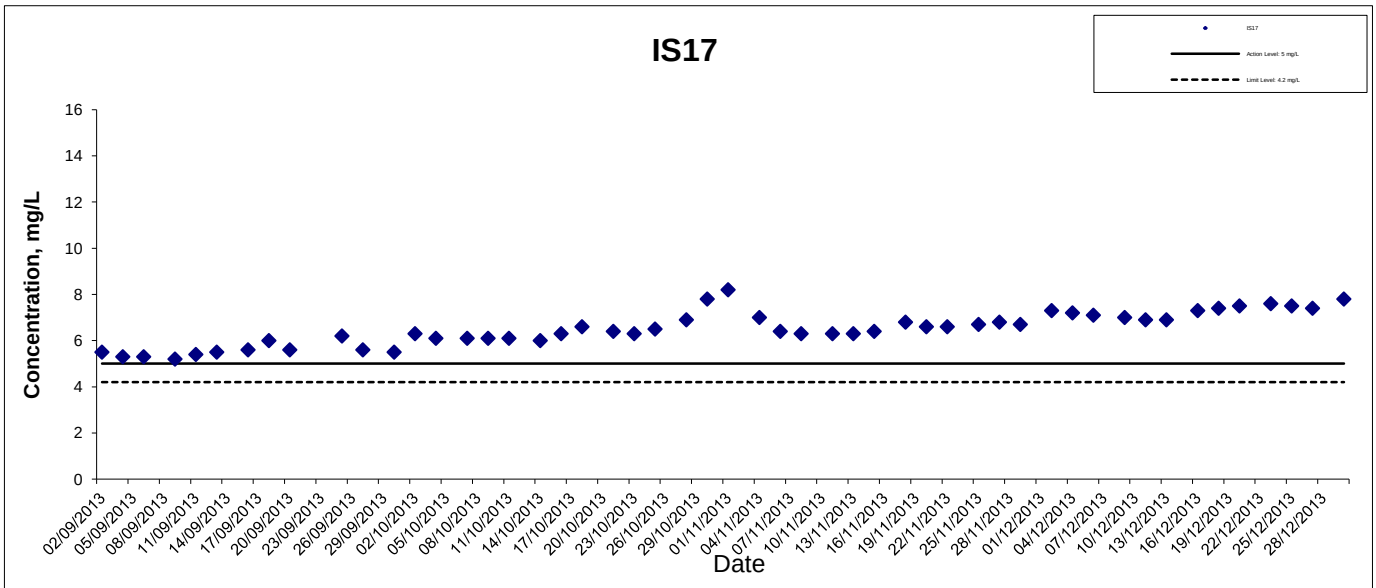
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

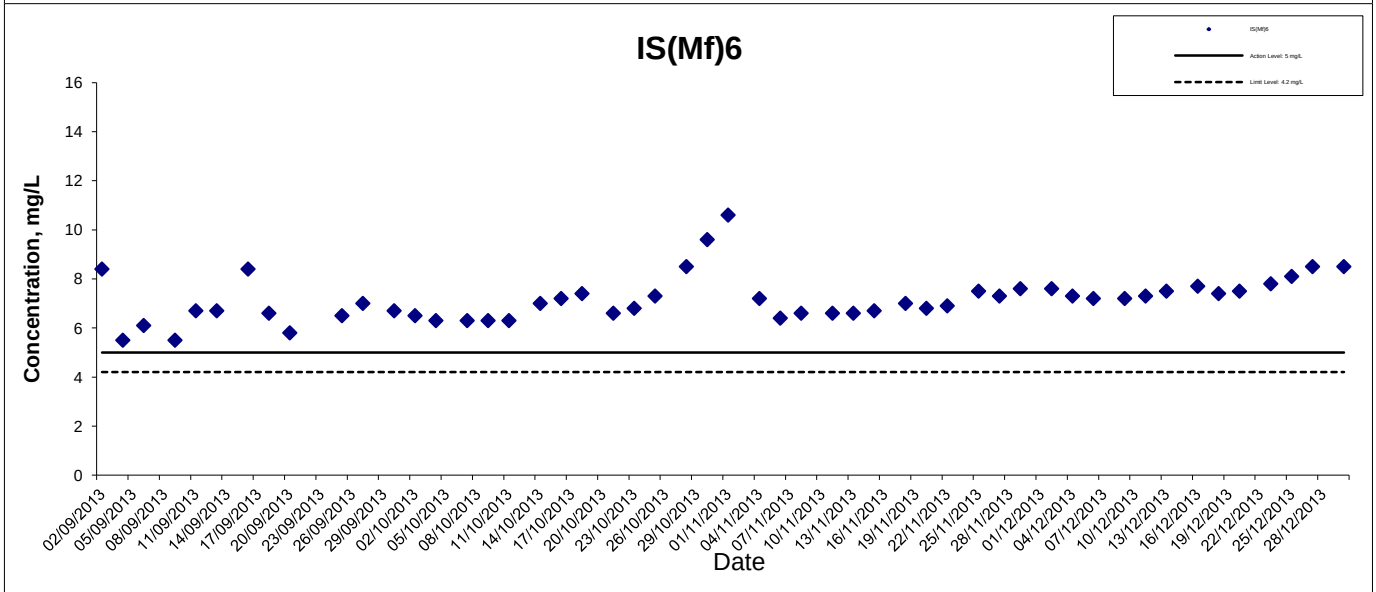


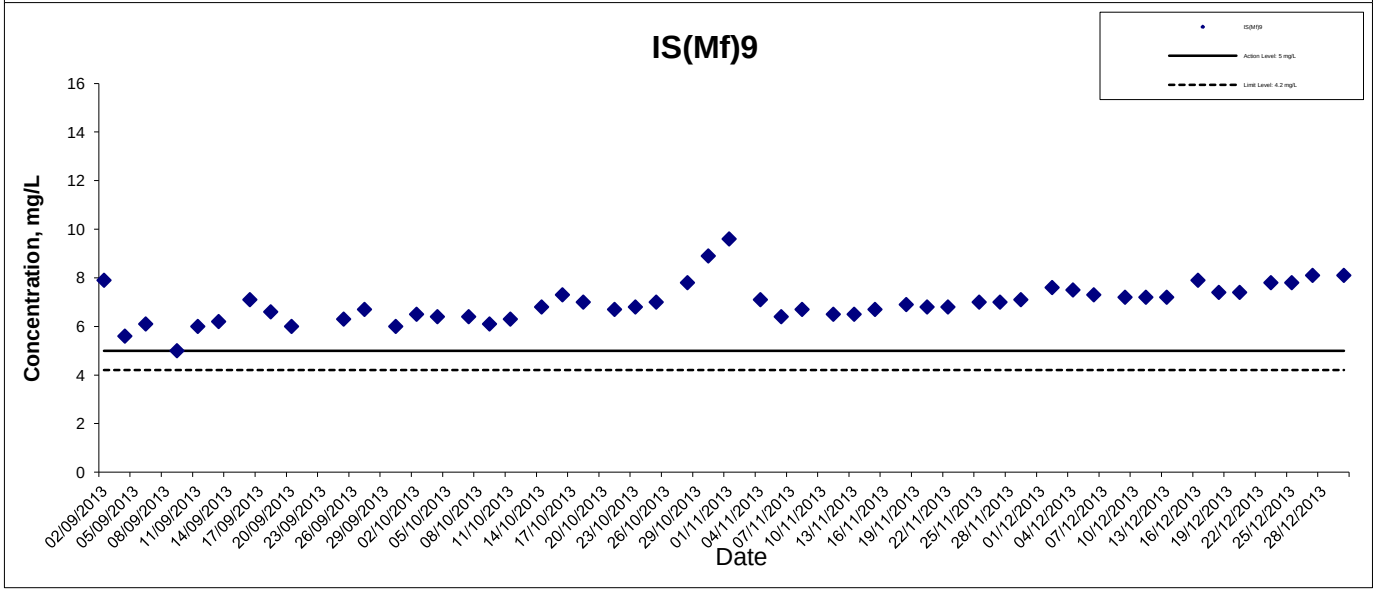




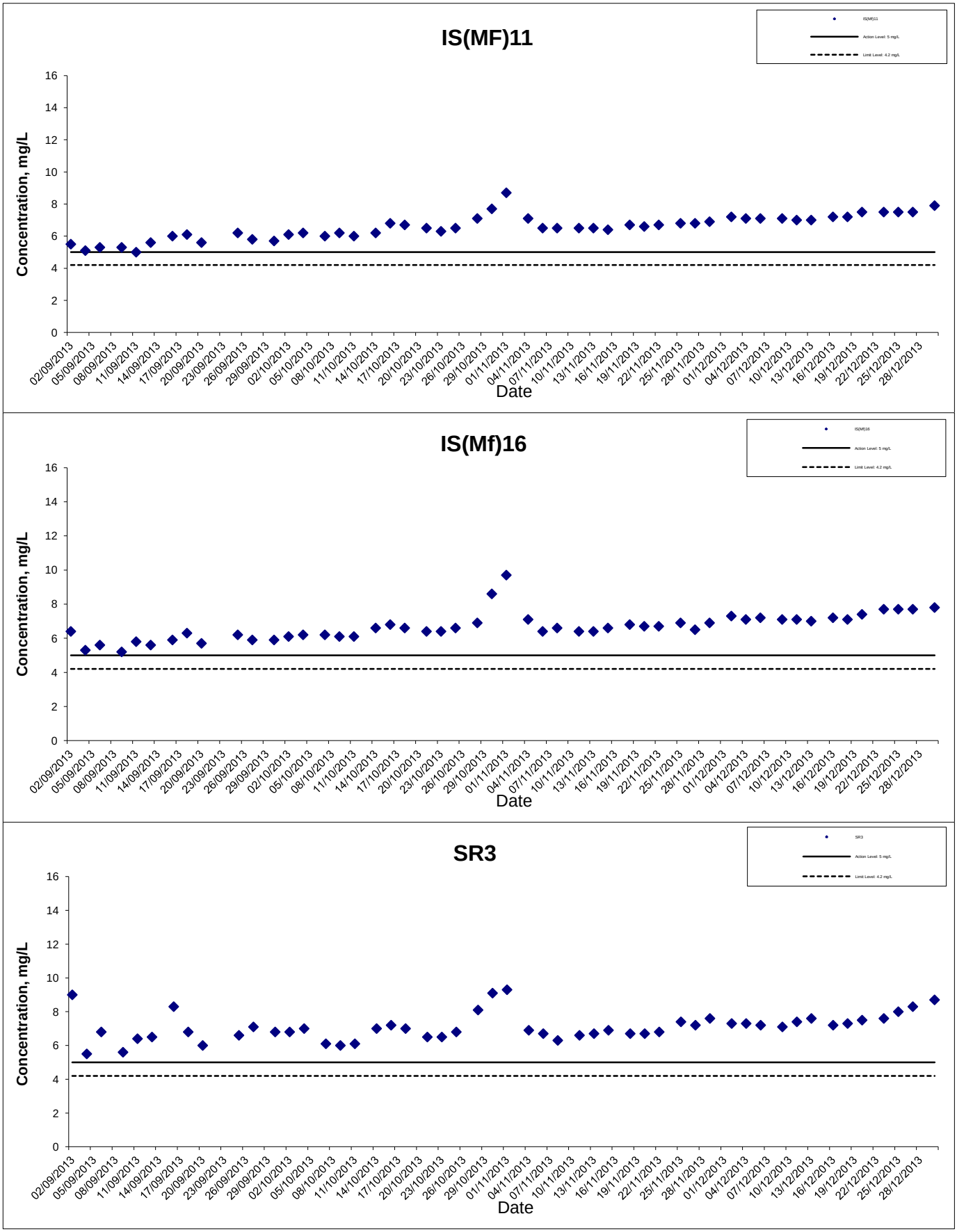
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



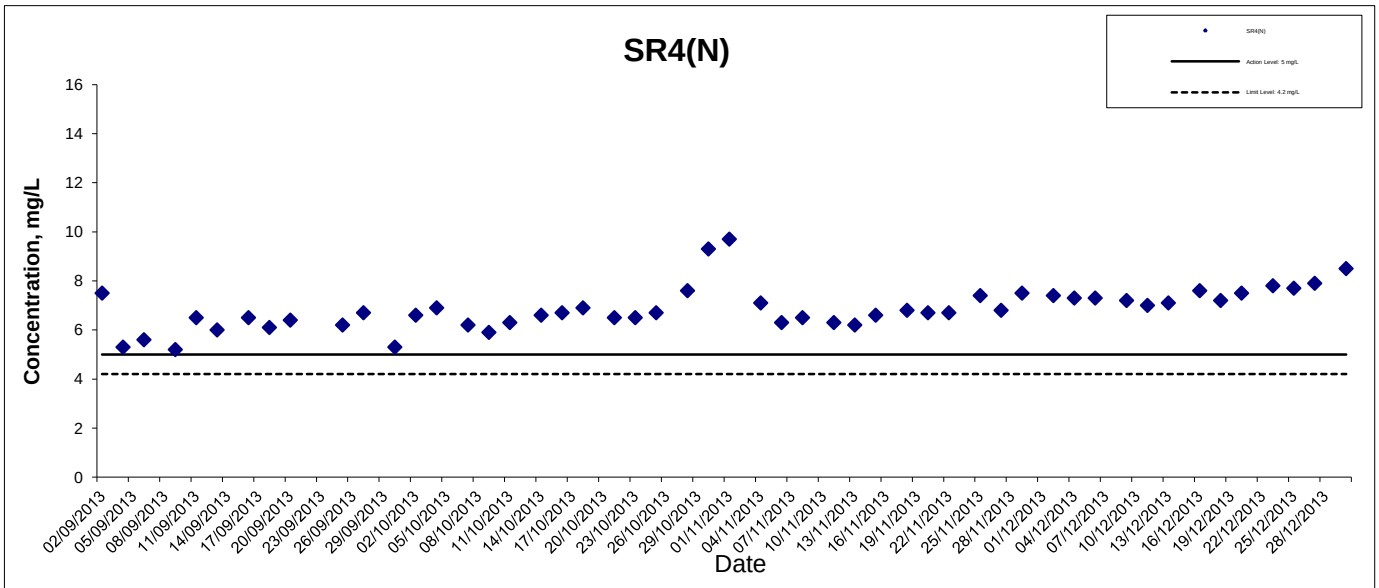


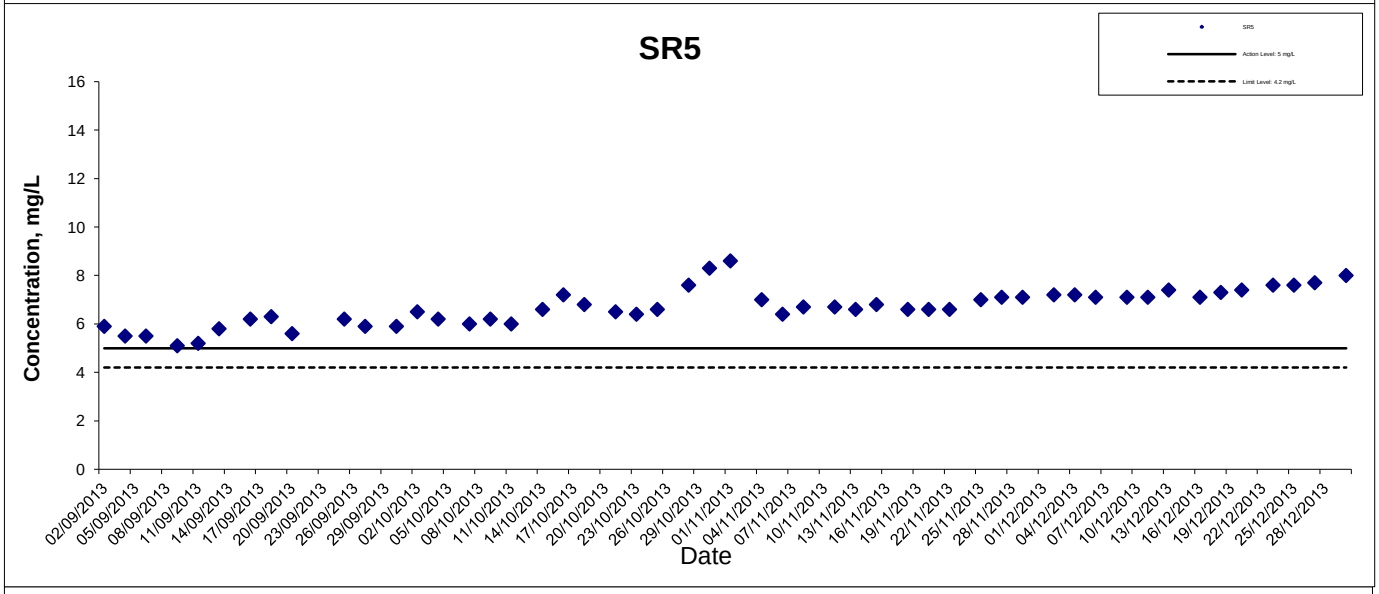


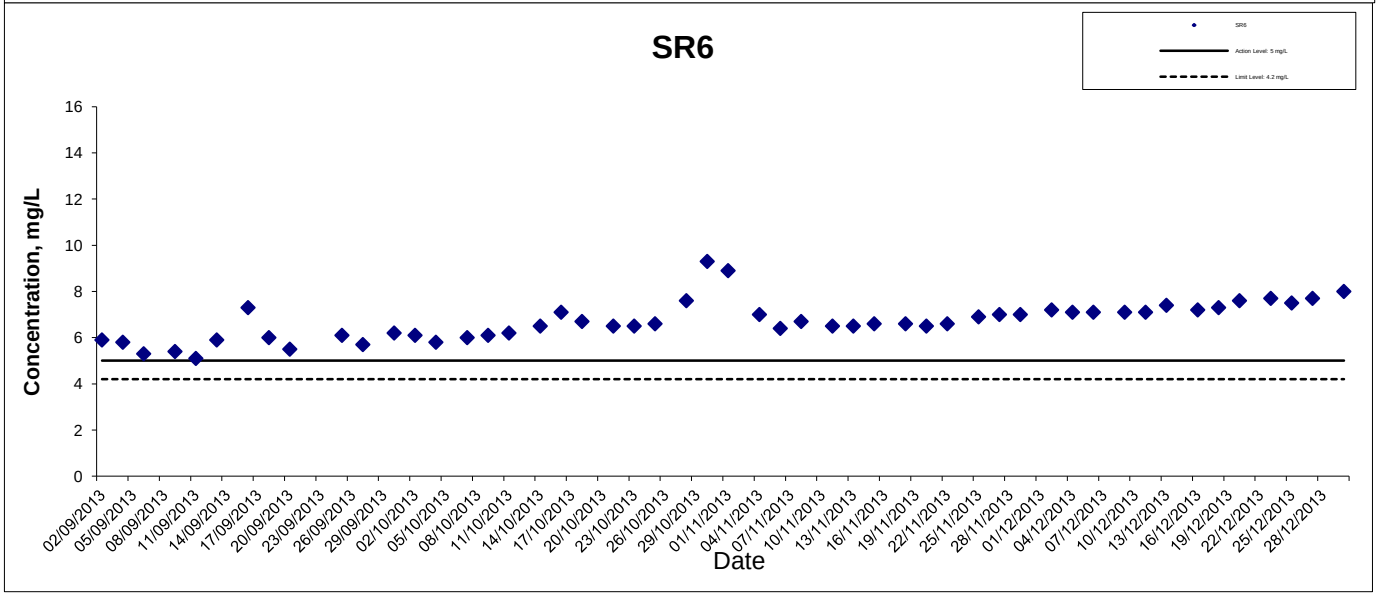
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



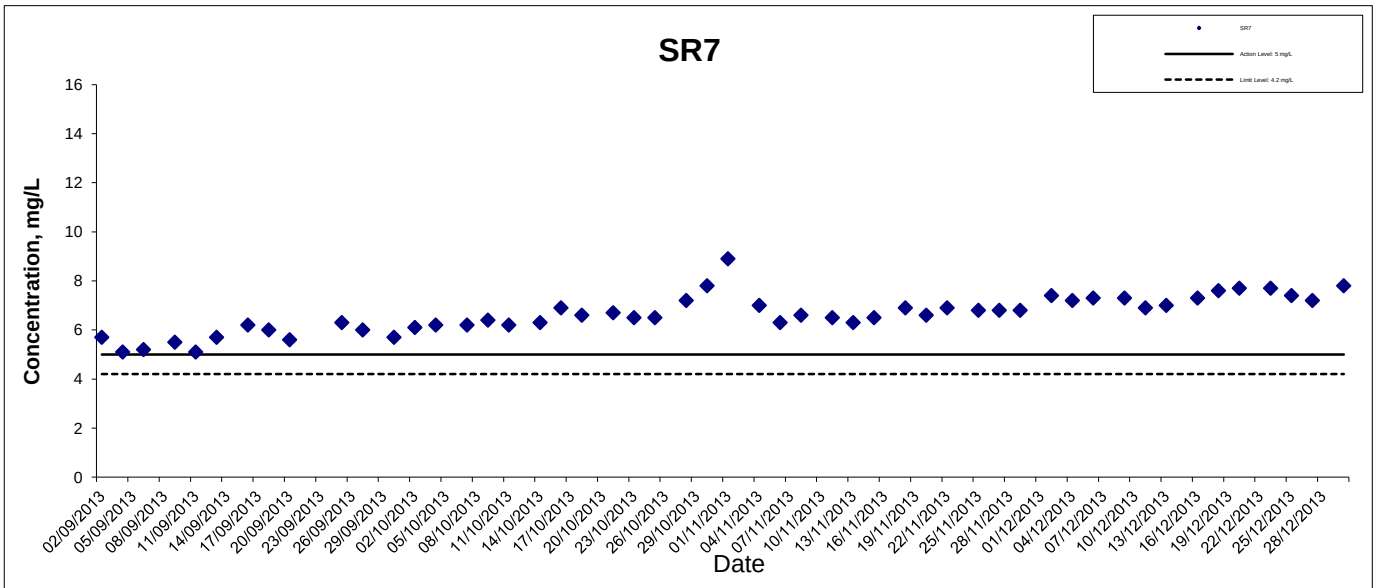
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

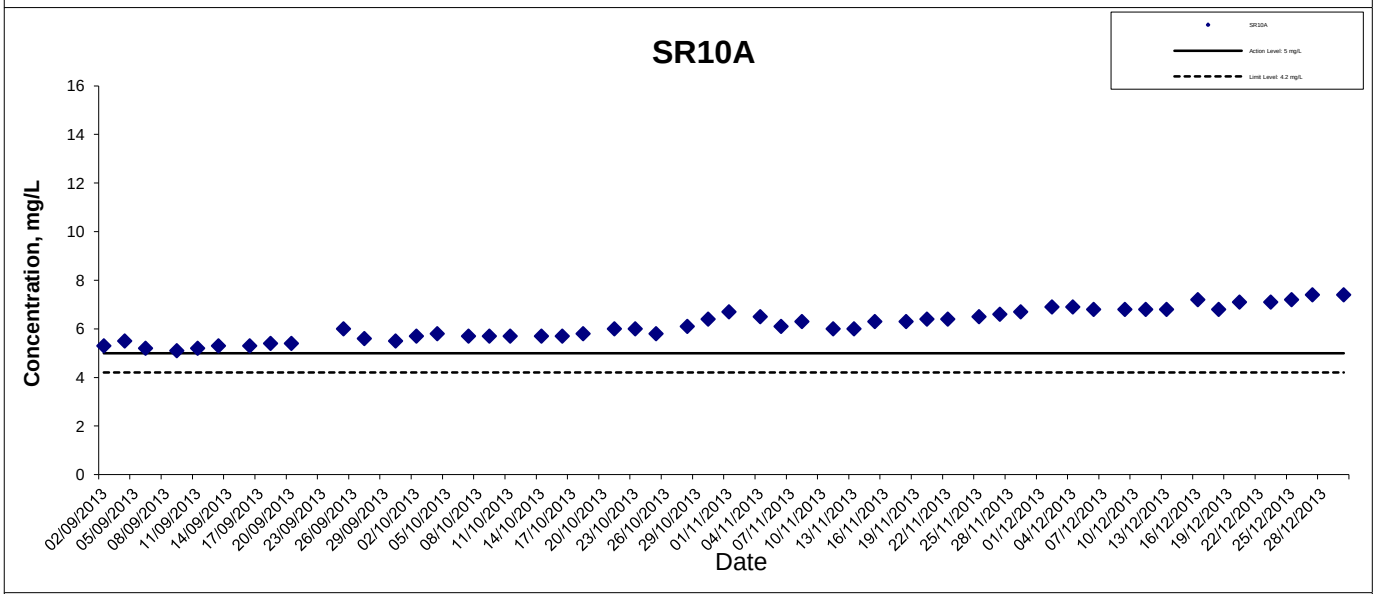


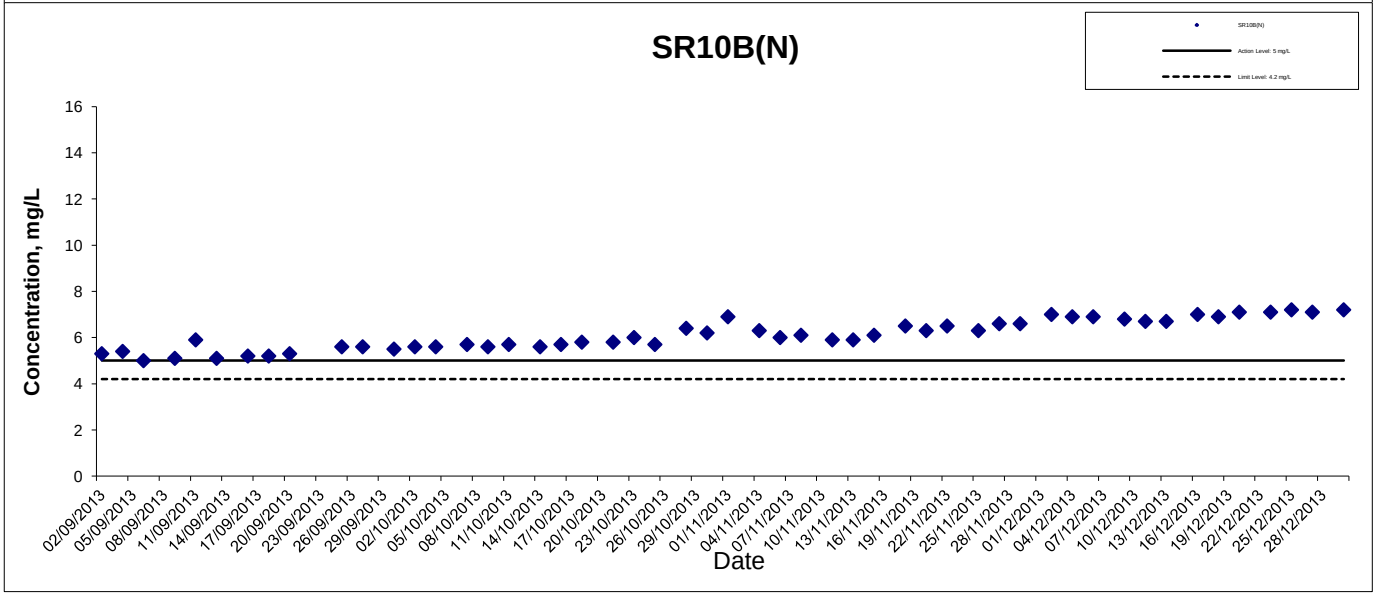




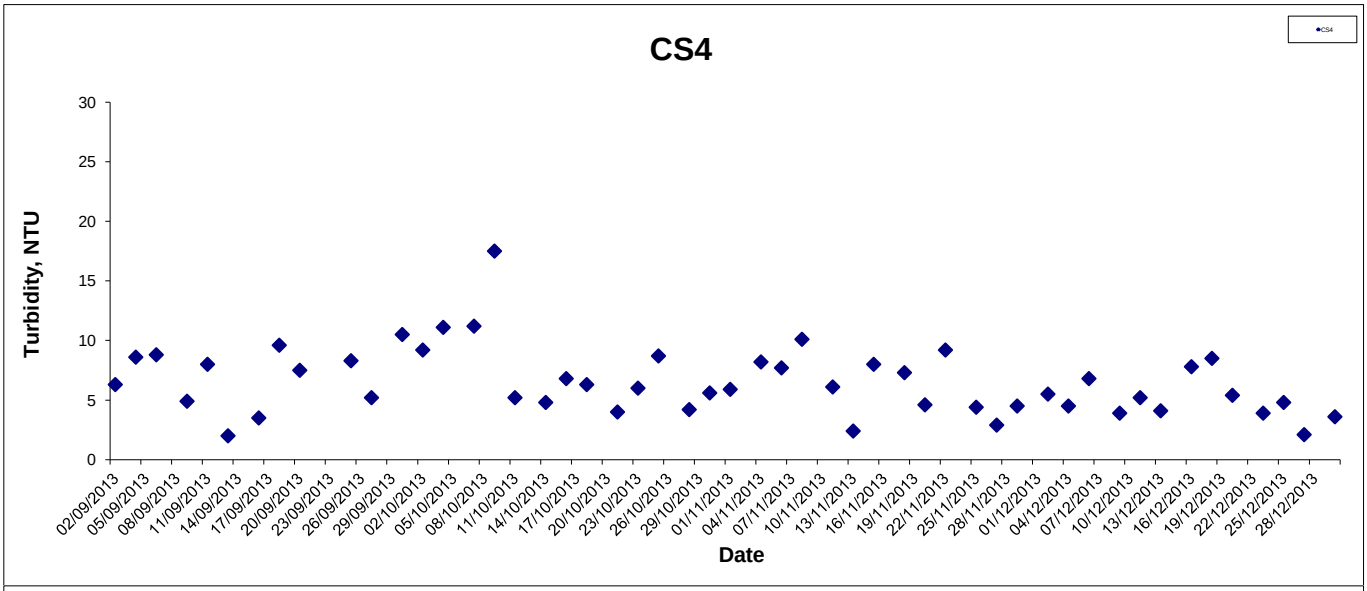
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

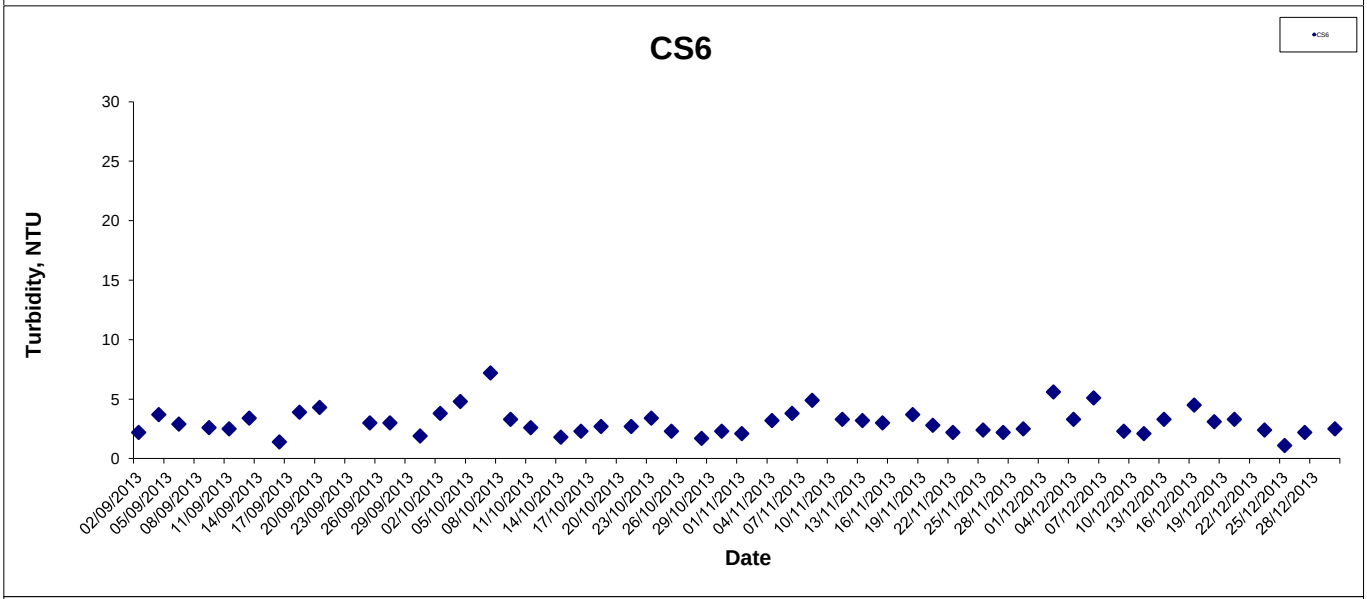


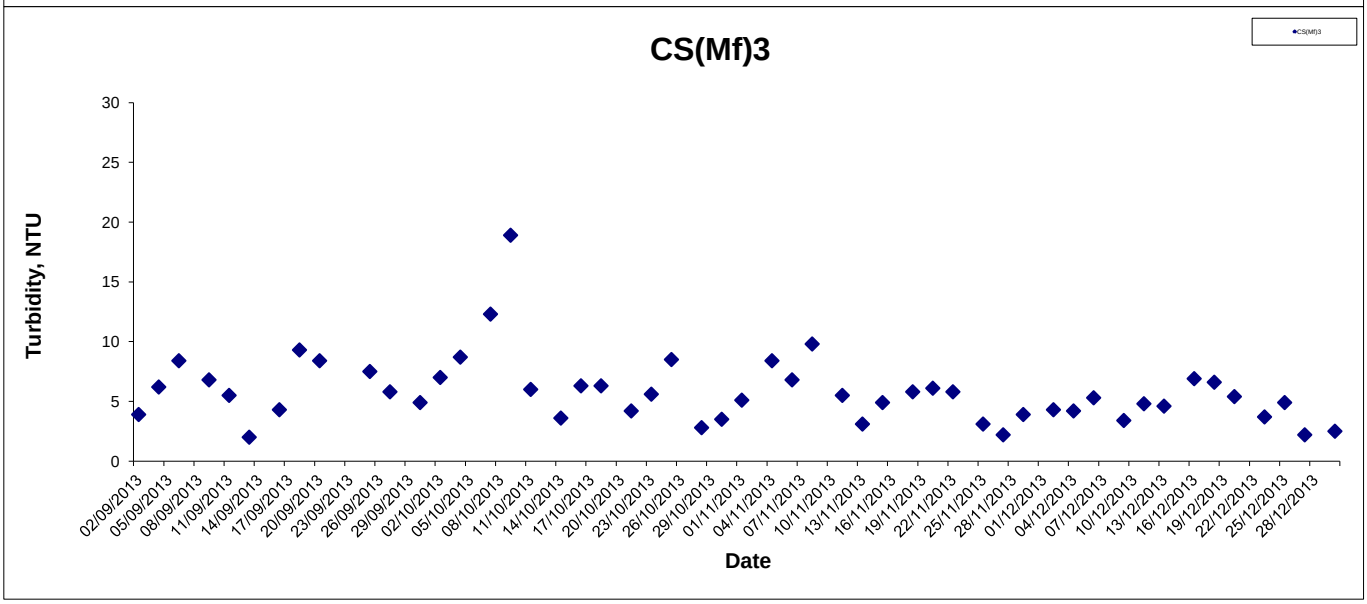




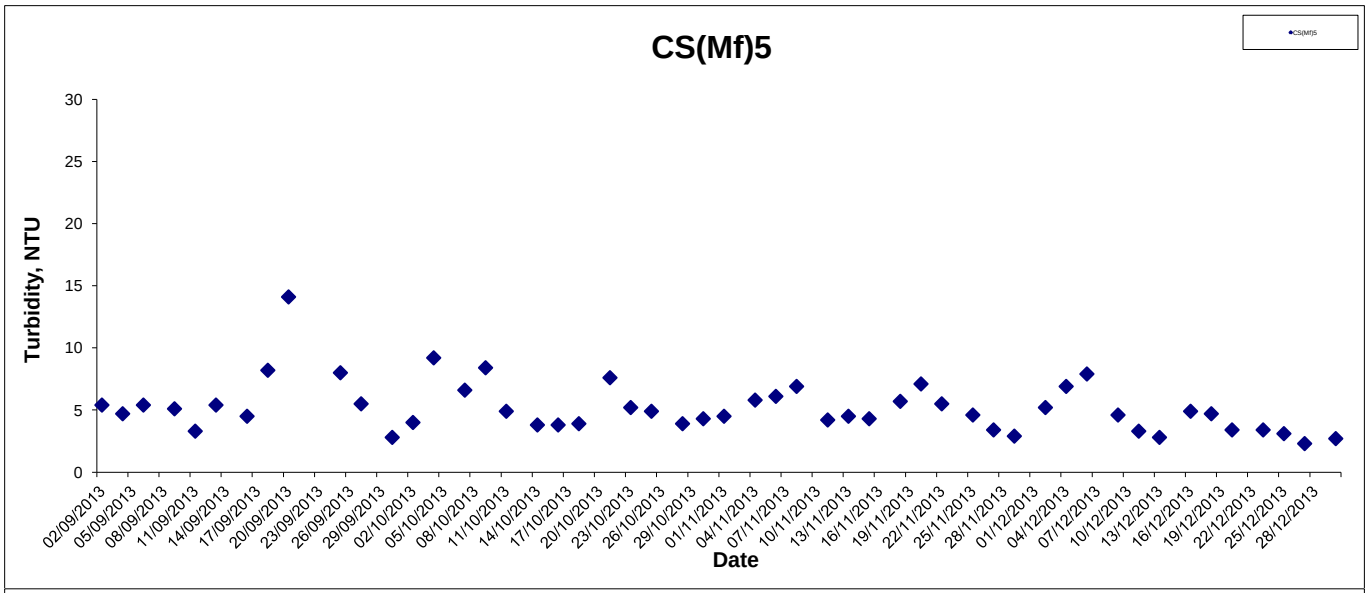
Turbidity at Mid-Ebb Tide

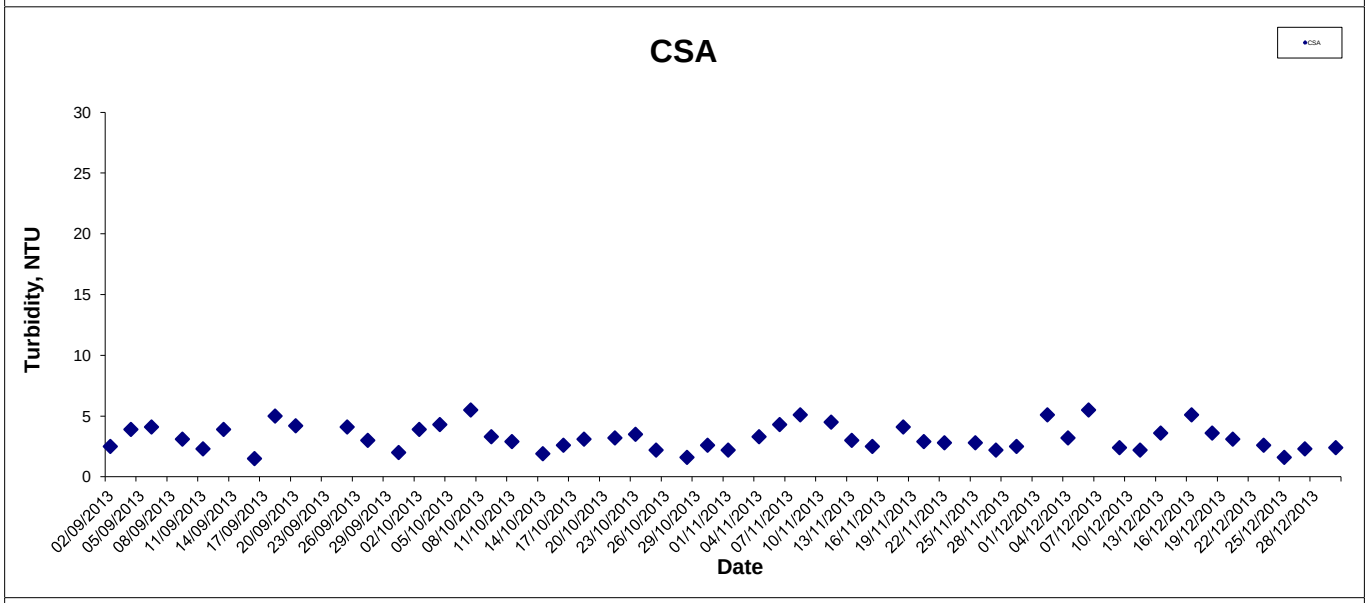


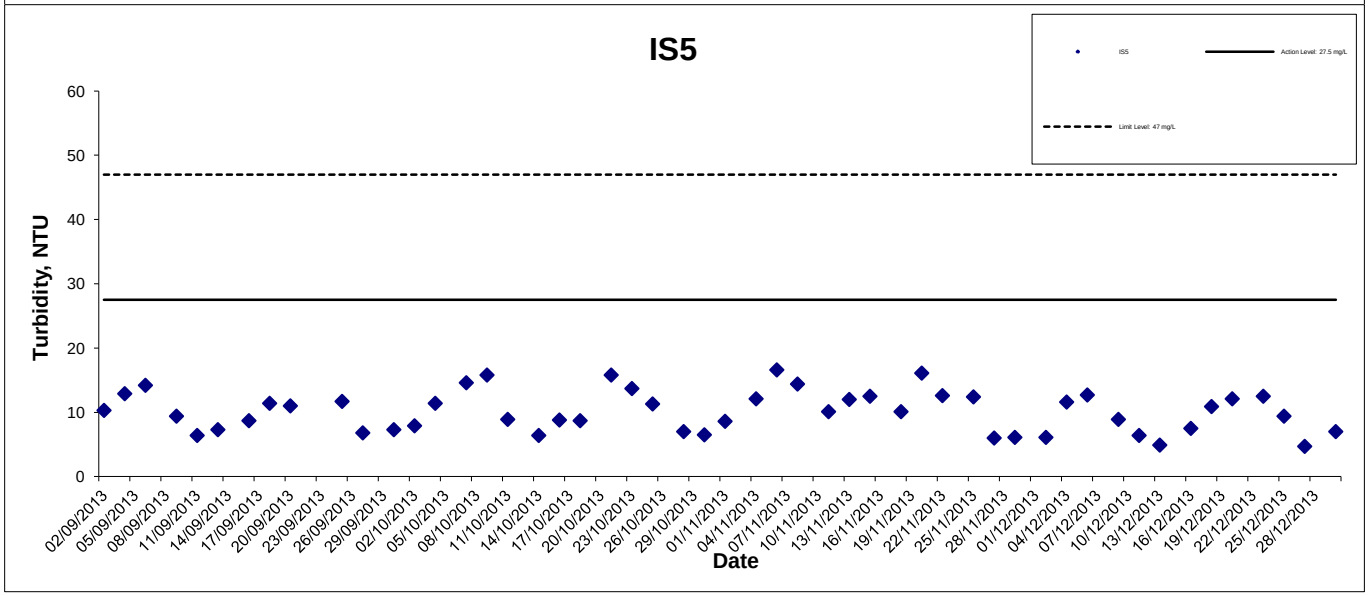




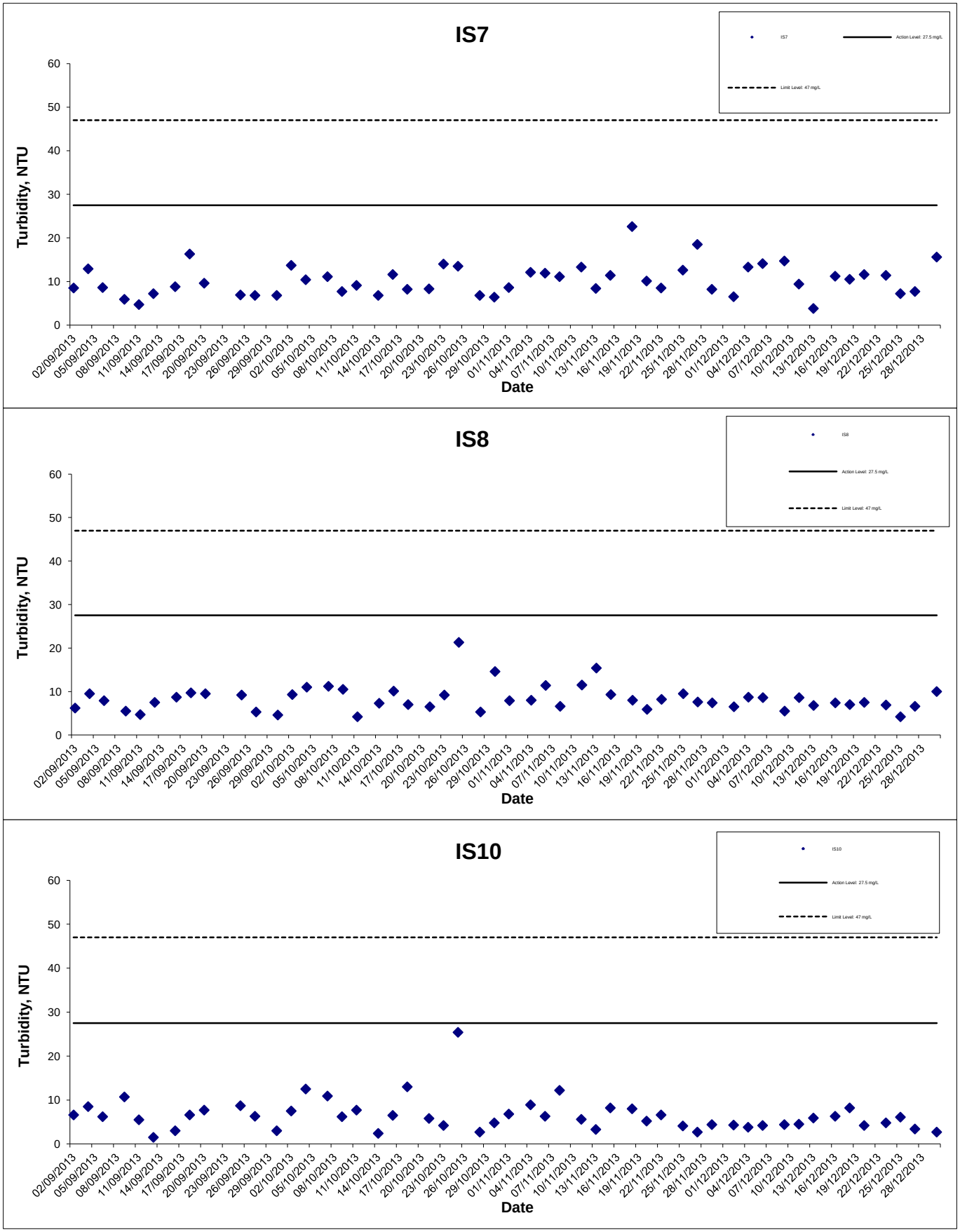
Turbidity at Mid-Ebb Tide







Turbidity at Mid-Ebb Tide



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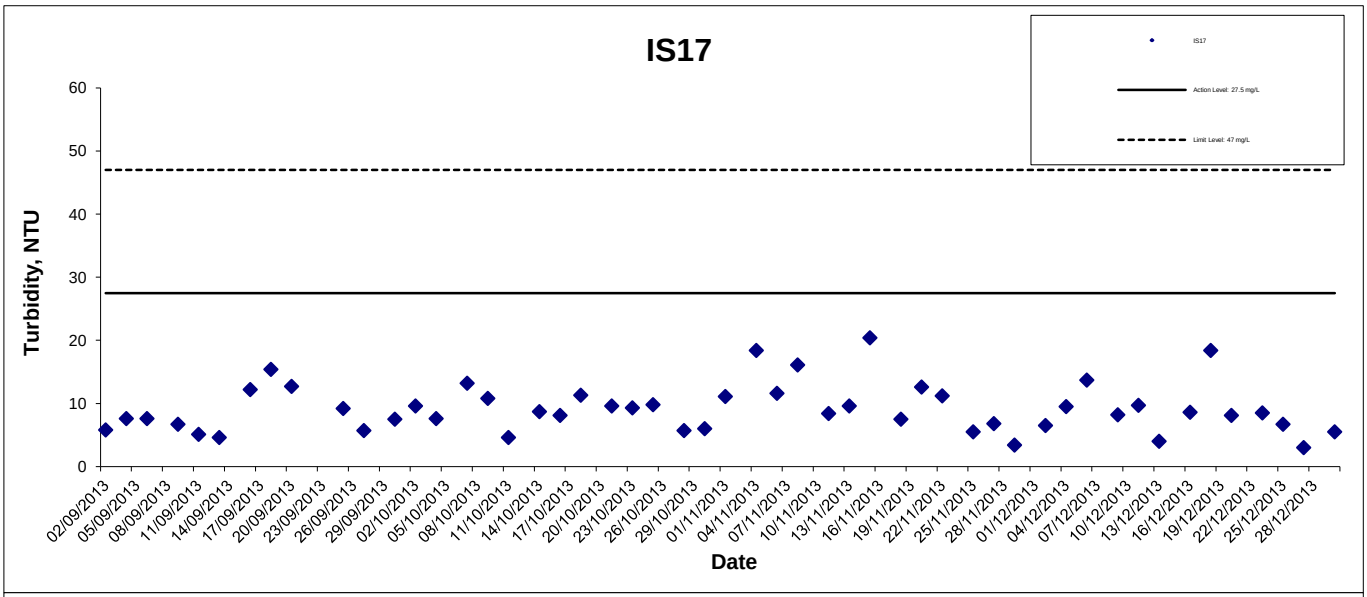
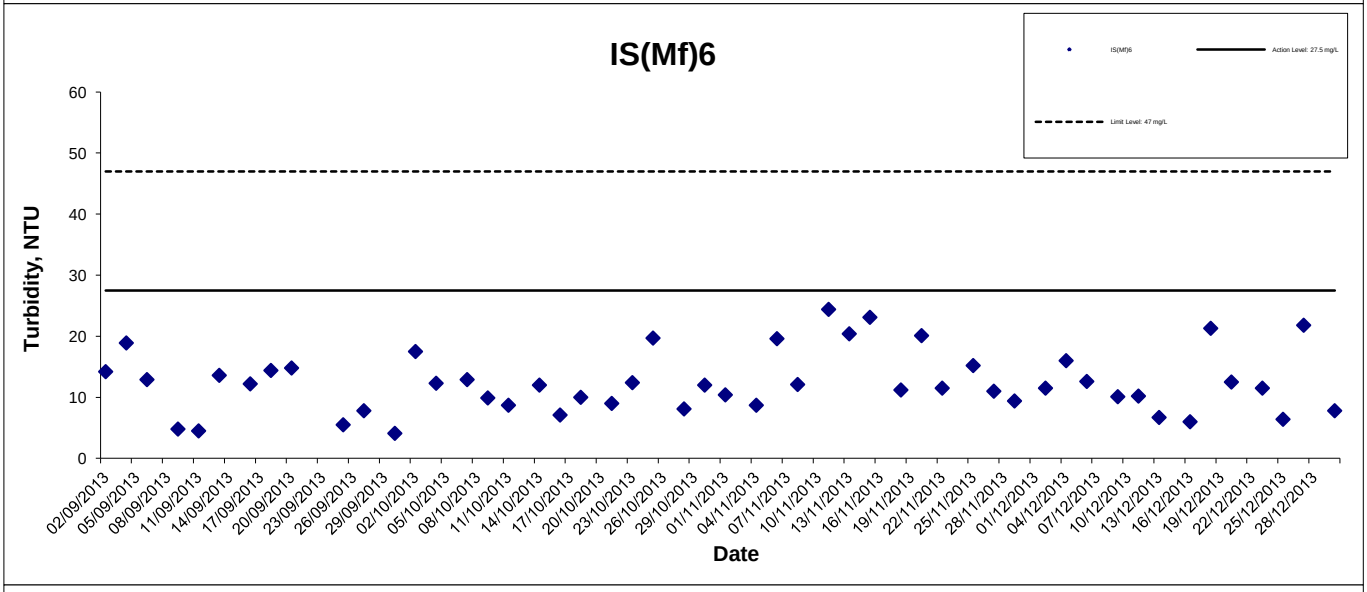
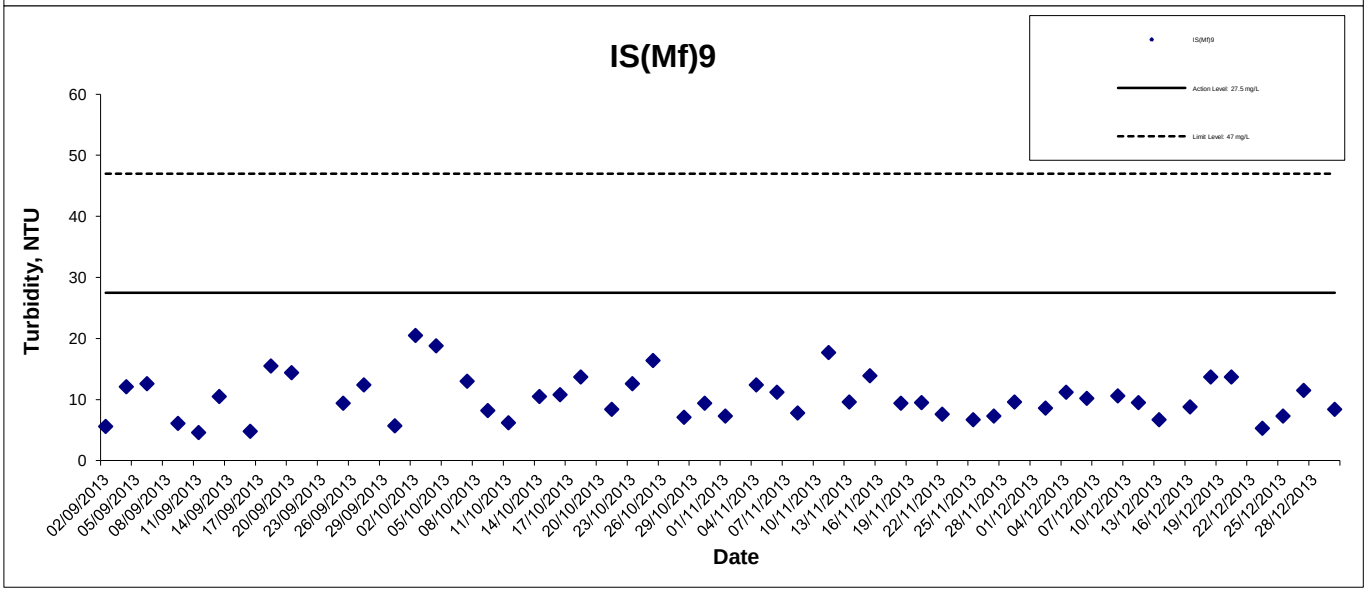
Project No.: 60249820 **Date: Dec 2013**

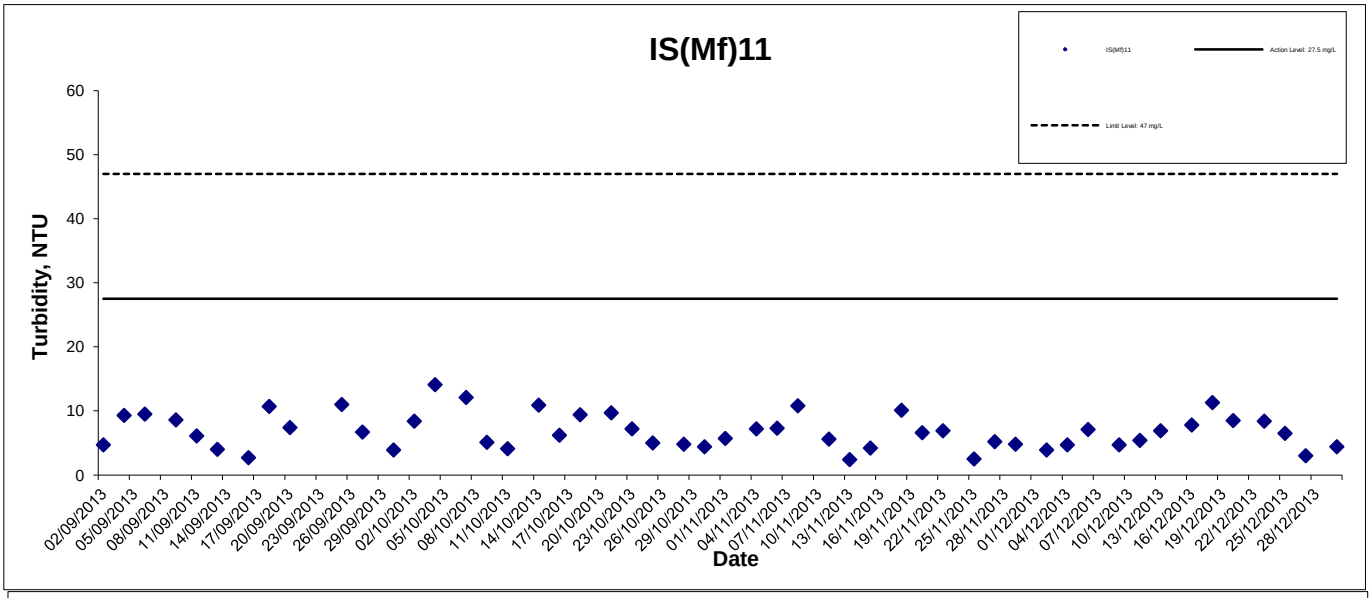
Turbidity at Mid-Ebb Tide

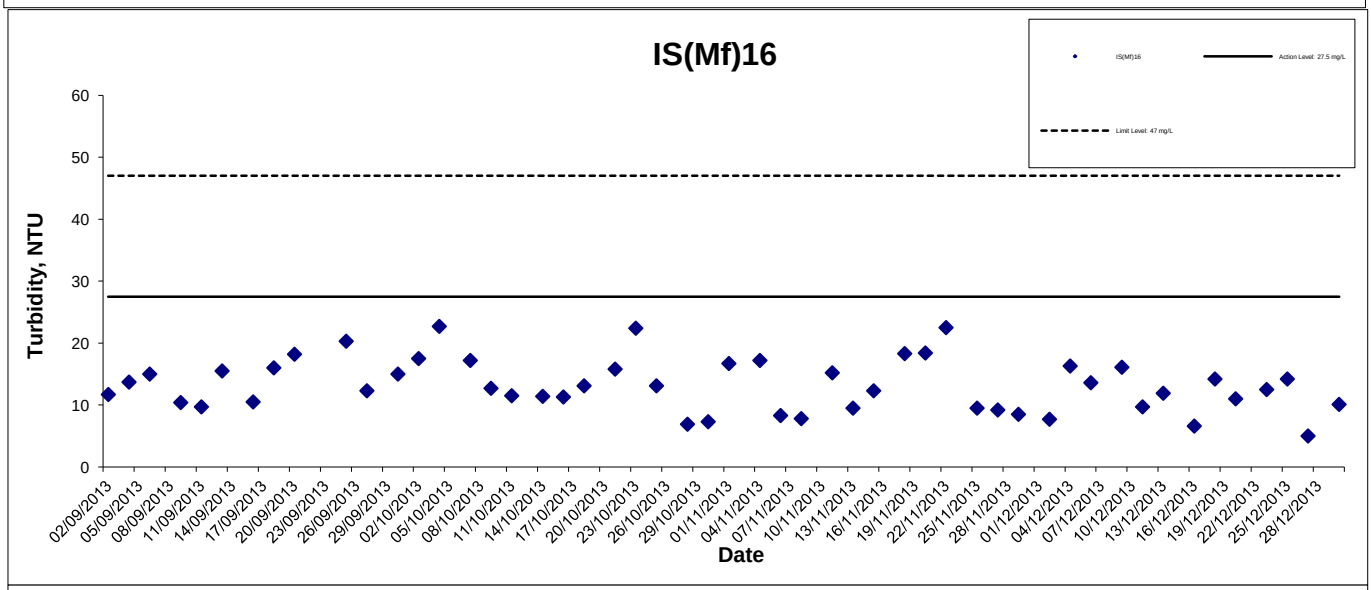


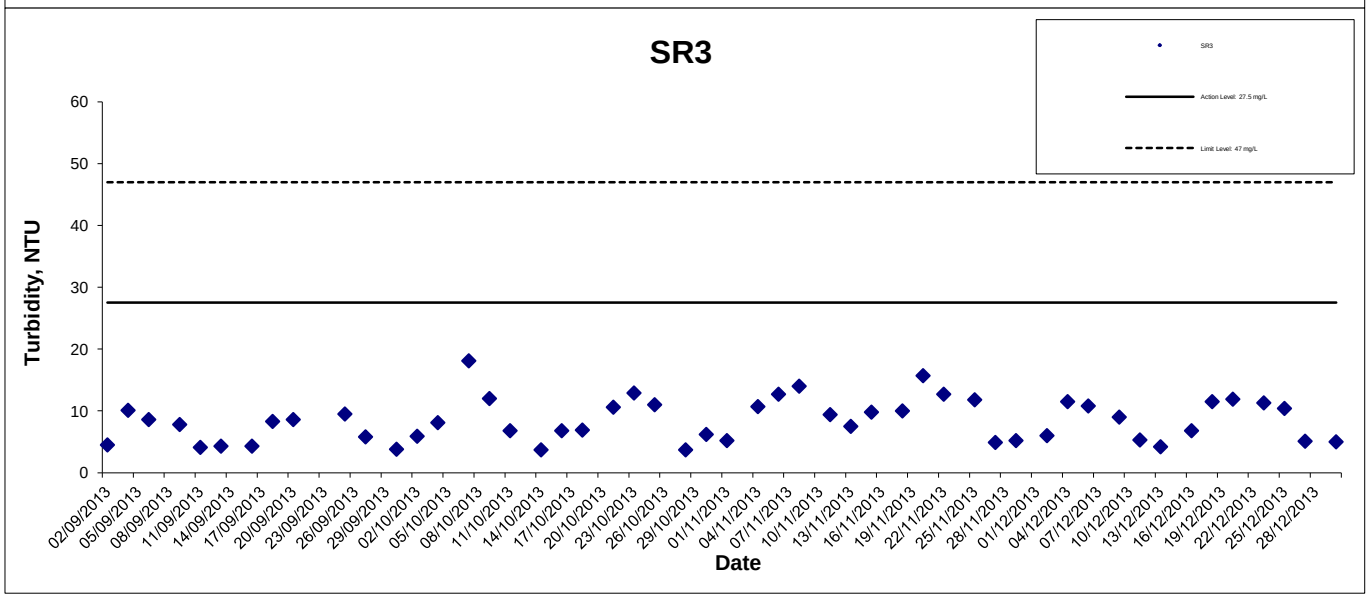




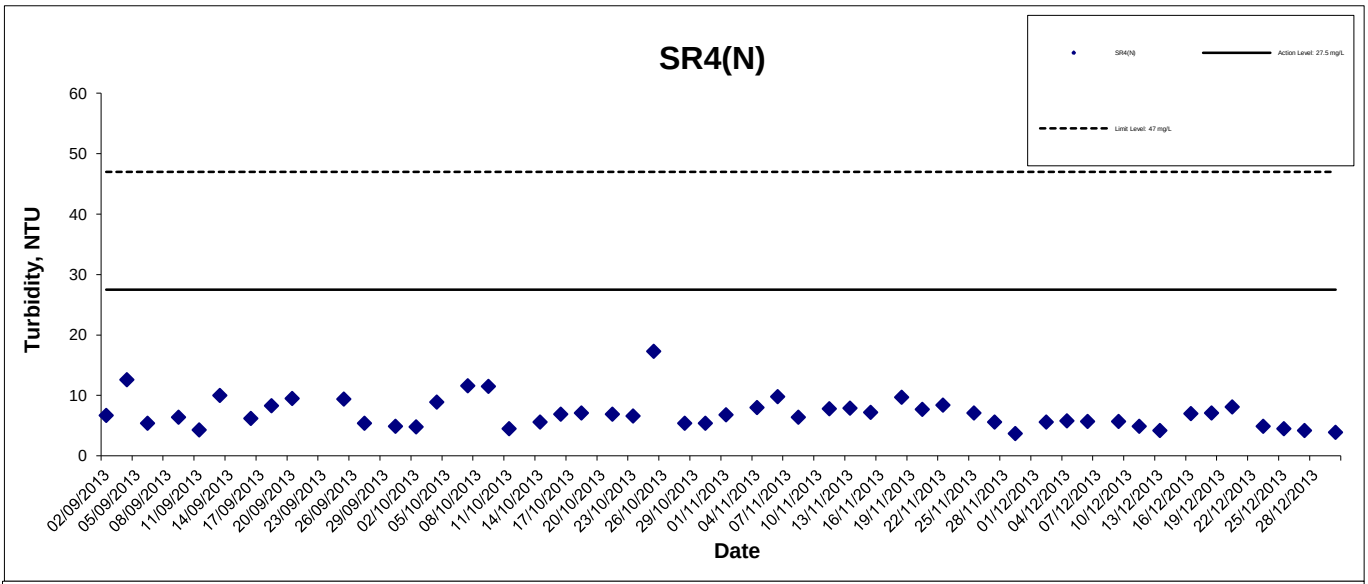
Turbidity at Mid-Ebb Tide

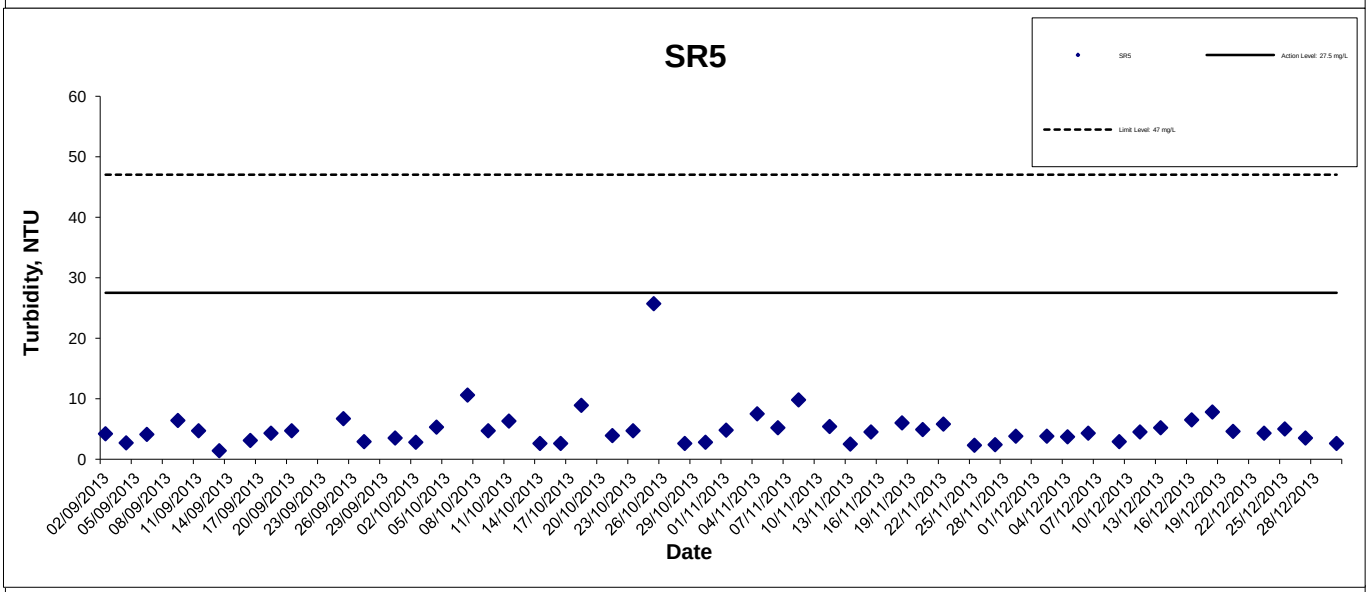


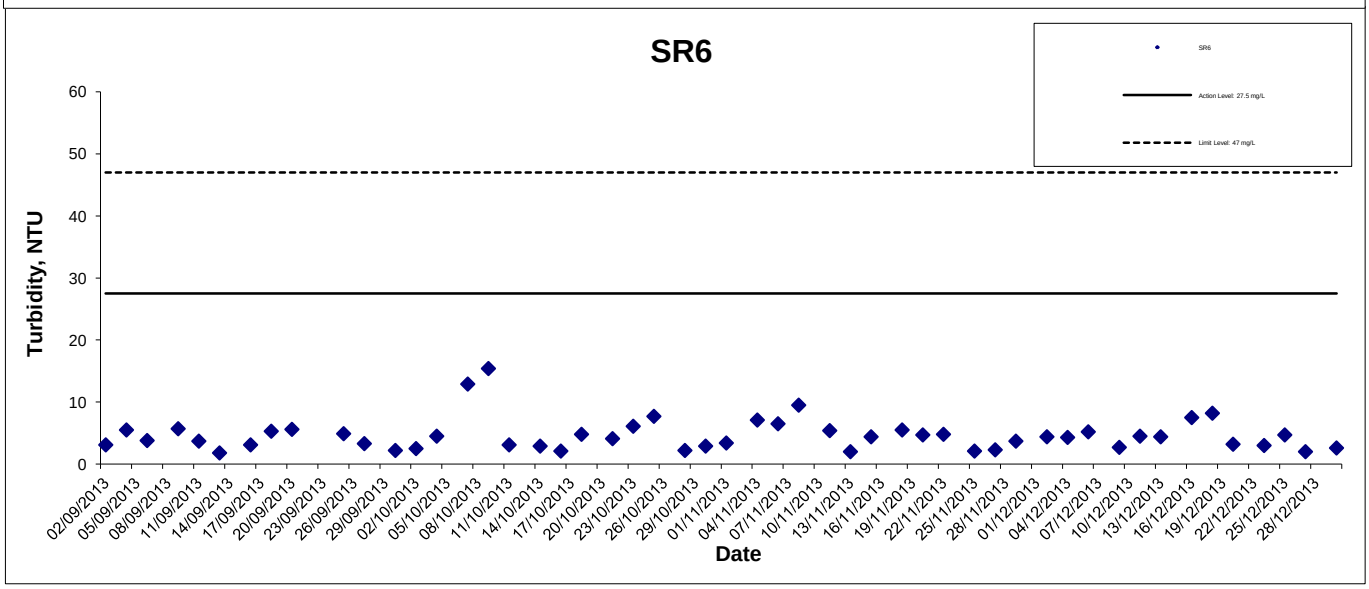




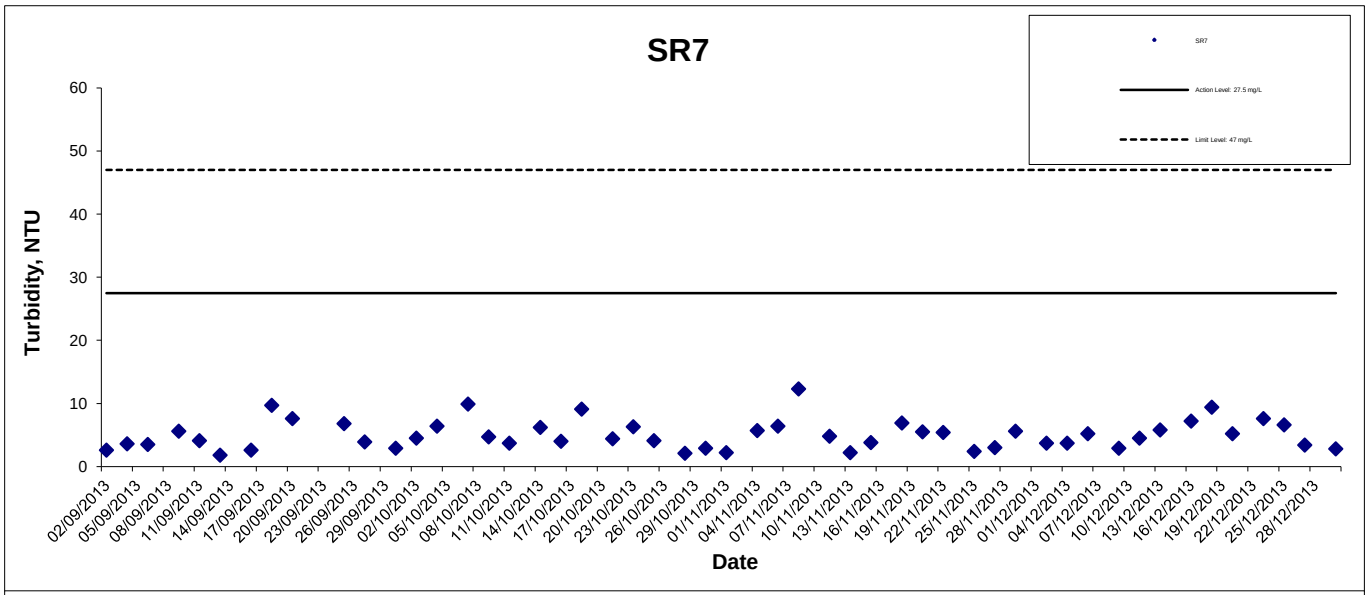
Turbidity at Mid-Ebb Tide

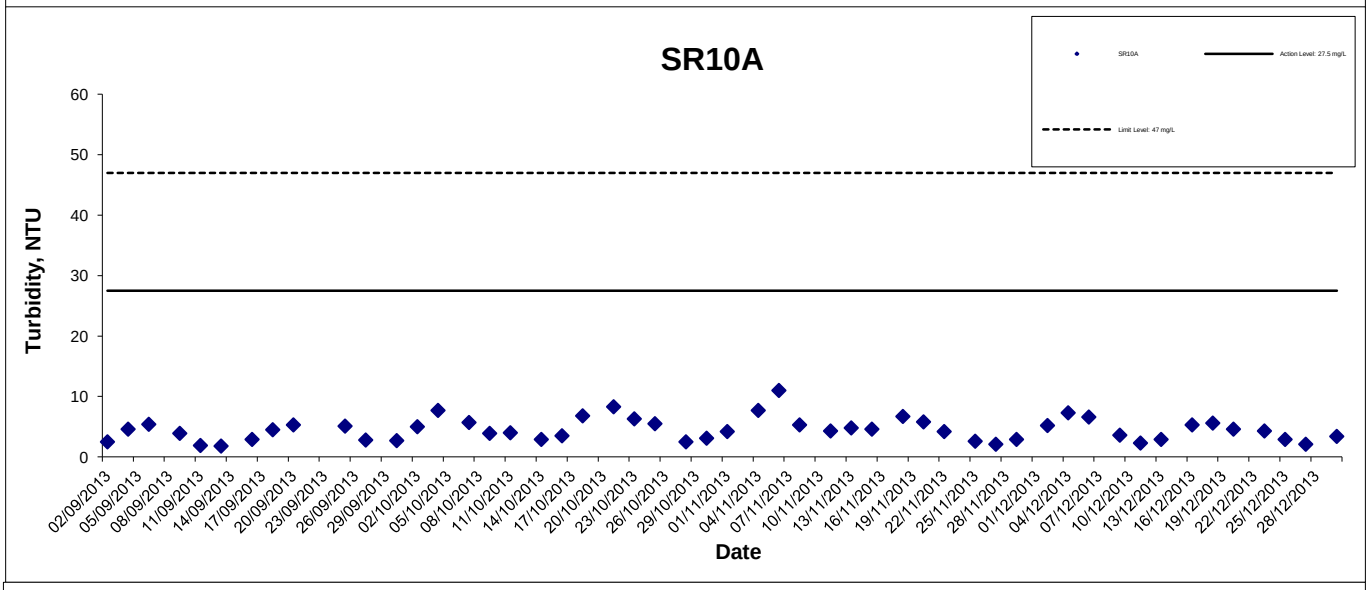


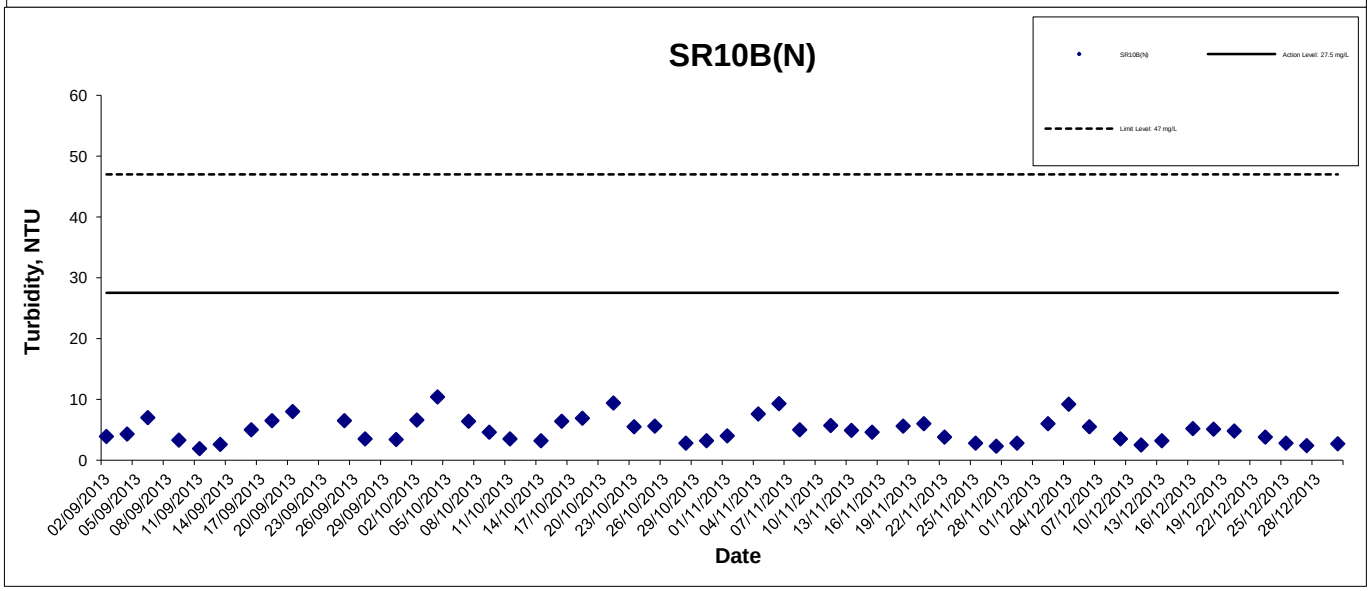




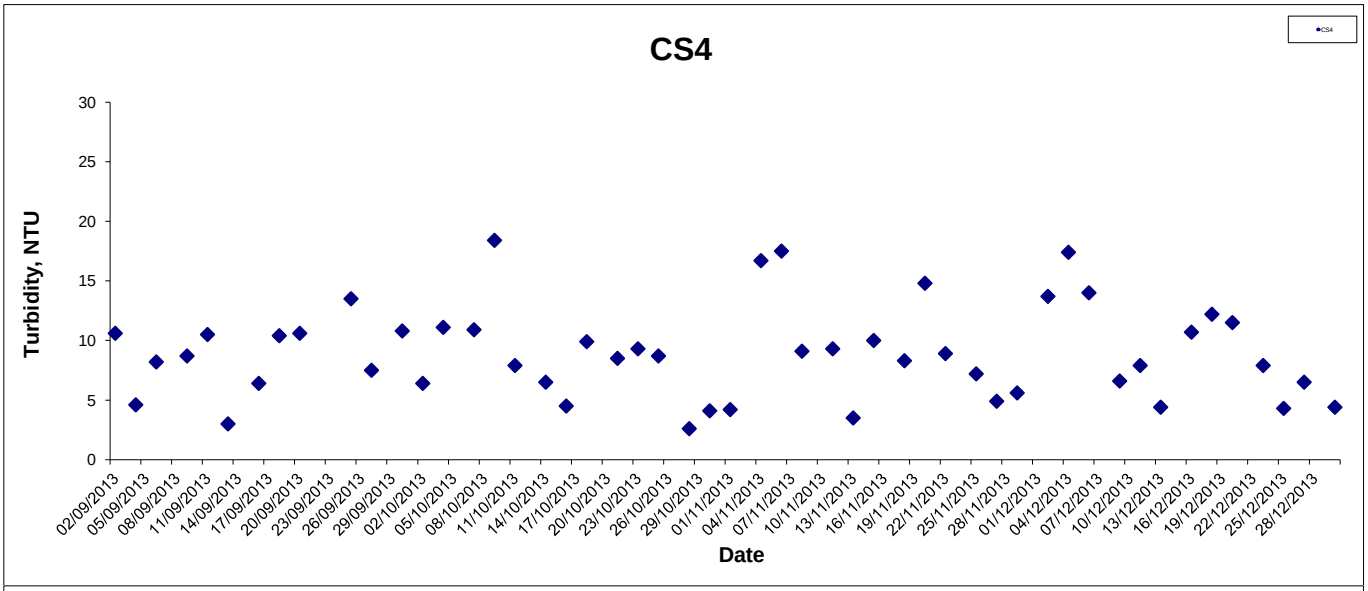
Turbidity at Mid-Ebb Tide

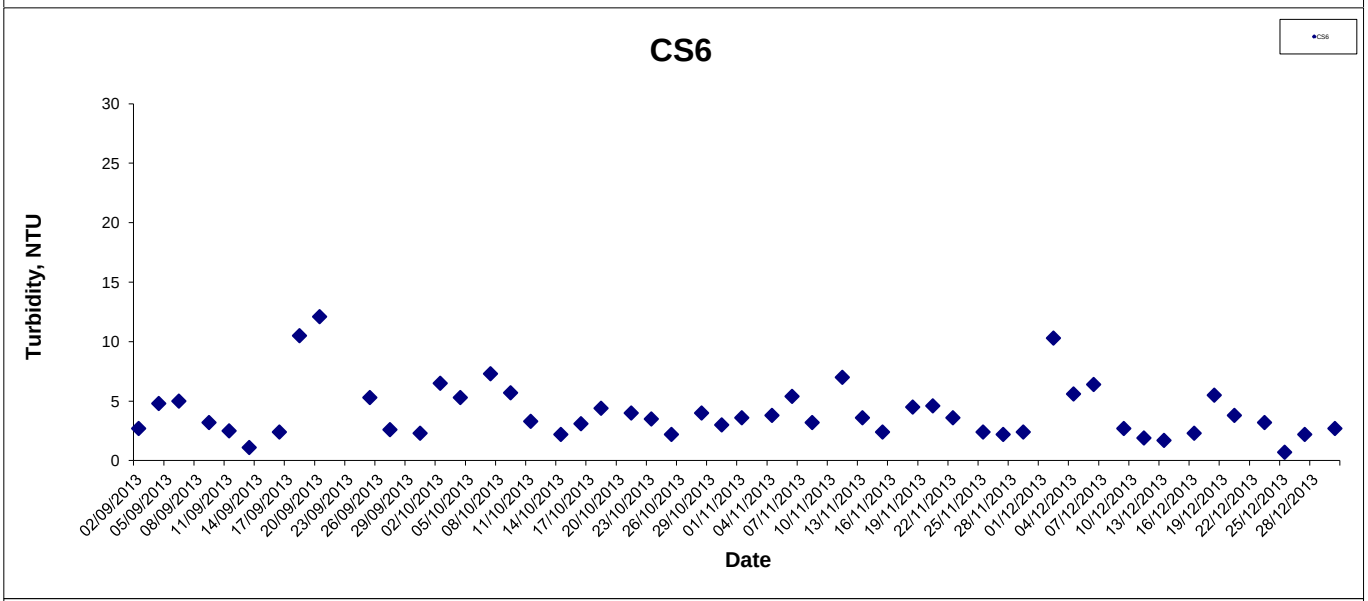


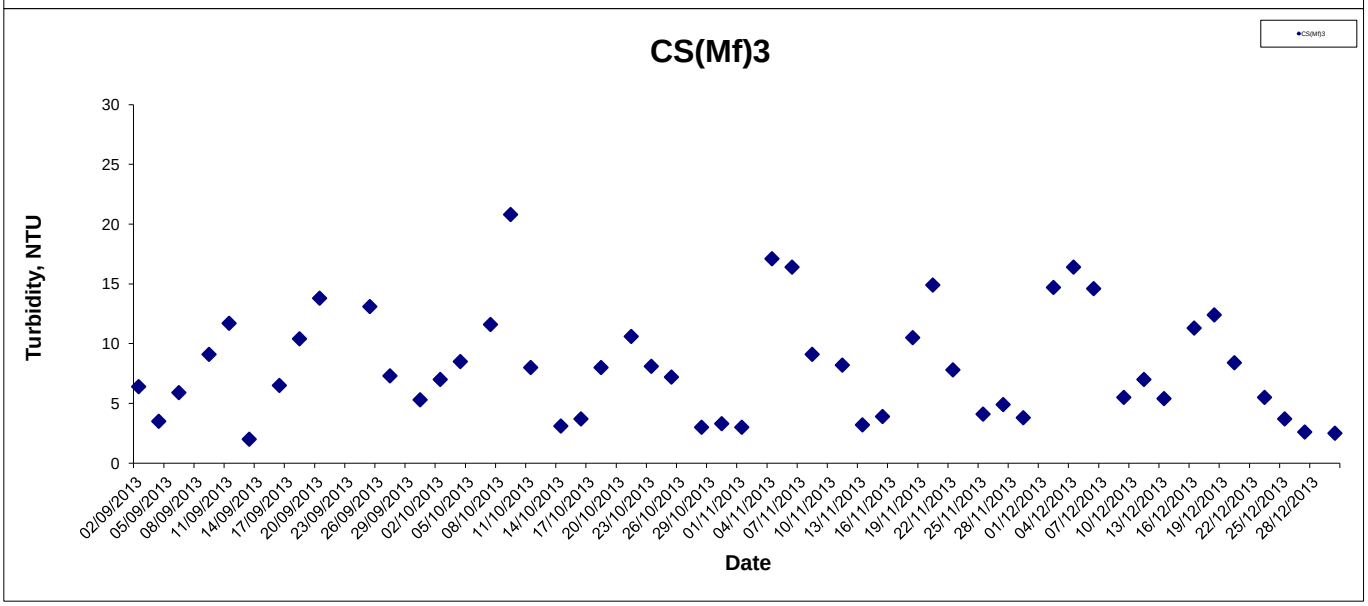




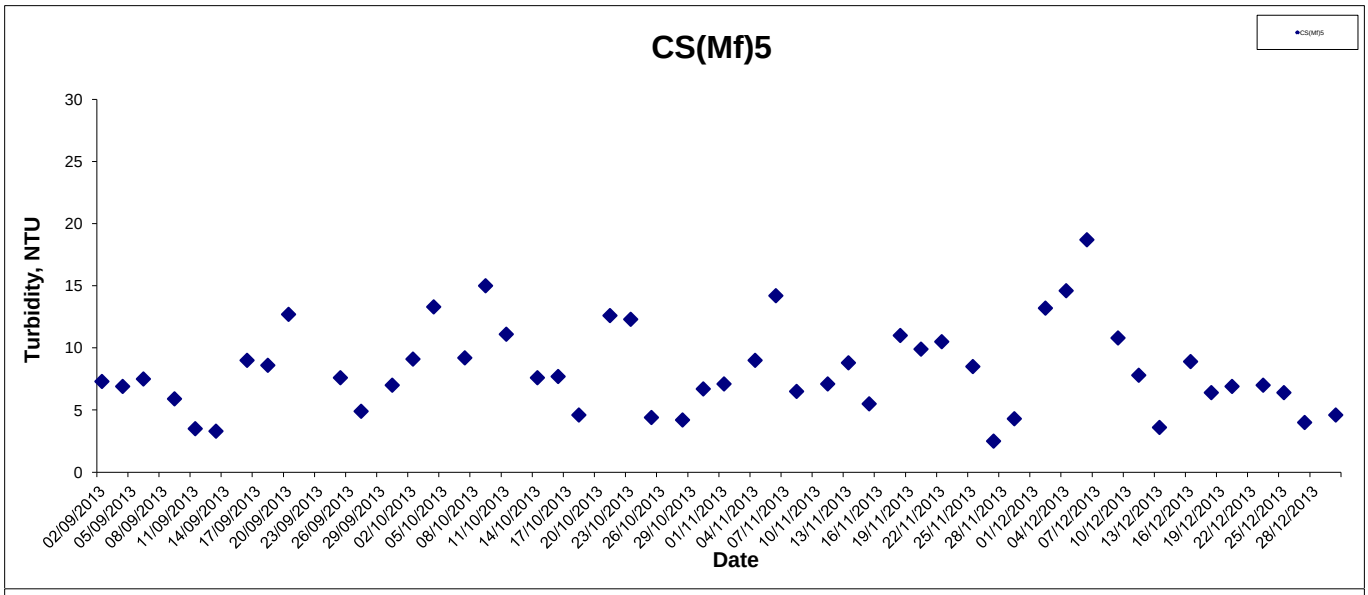
Turbidity at Mid-Flood Tide

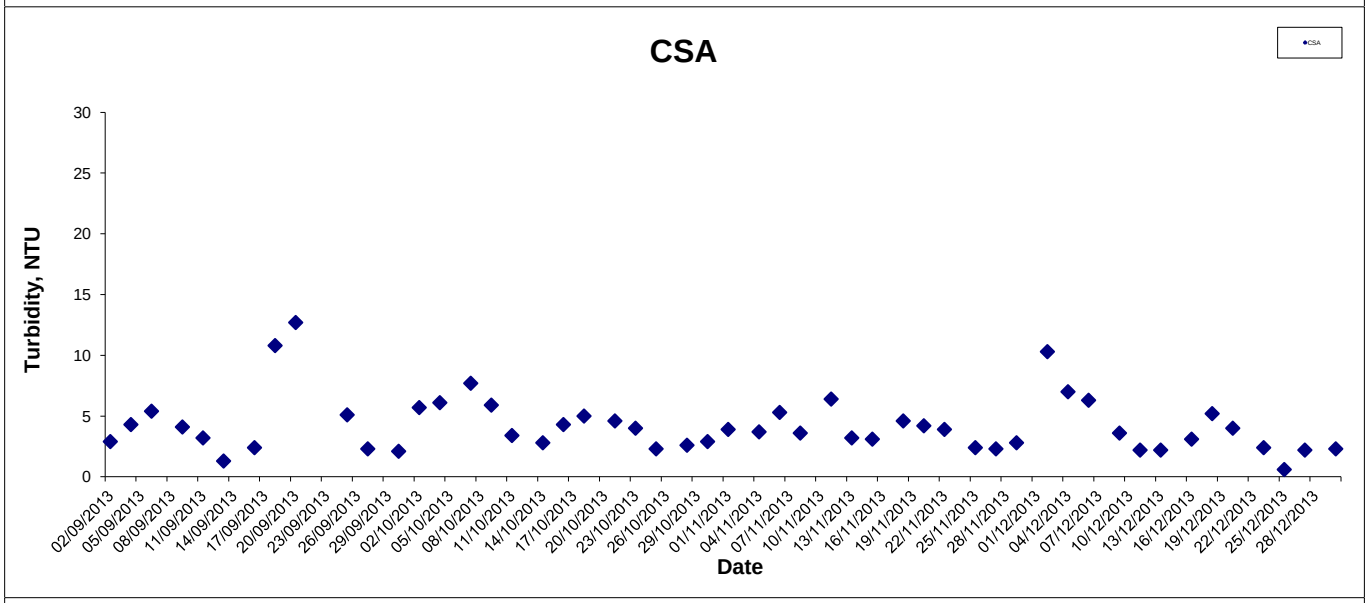


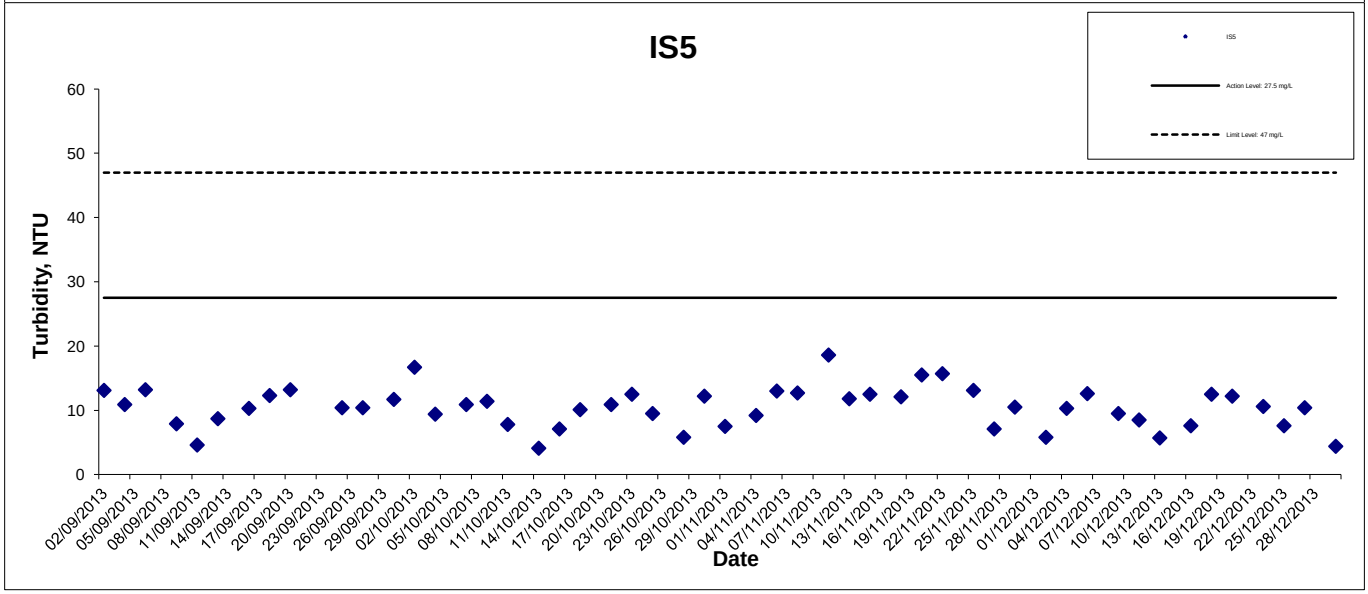




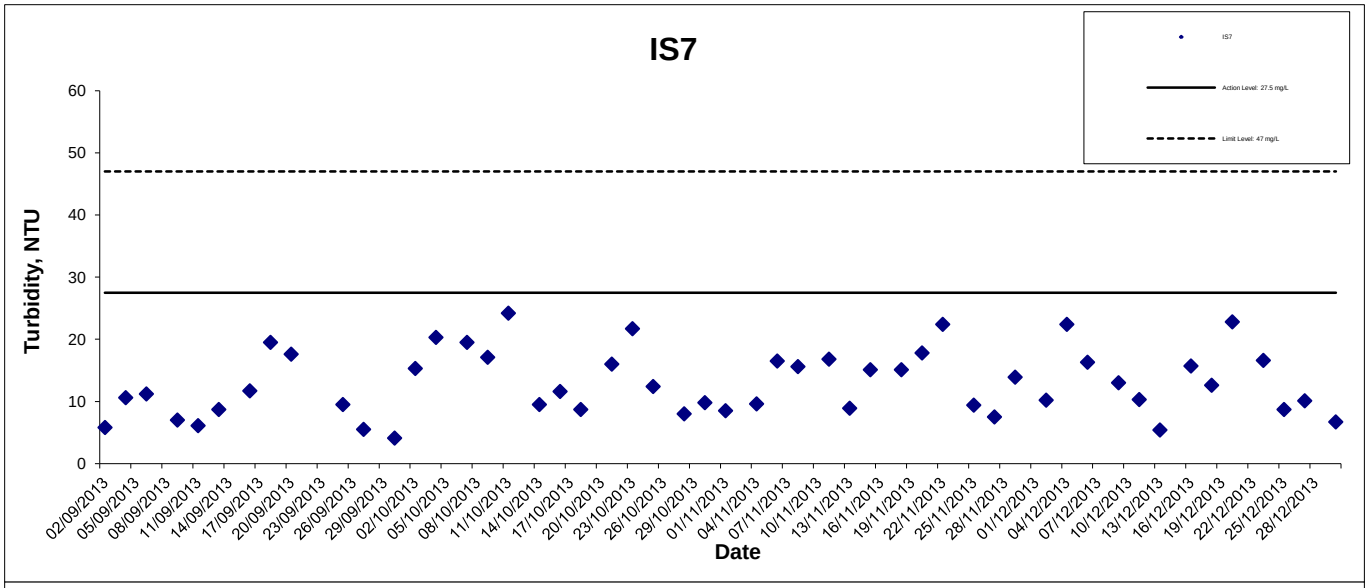
Turbidity at Mid-Flood Tide

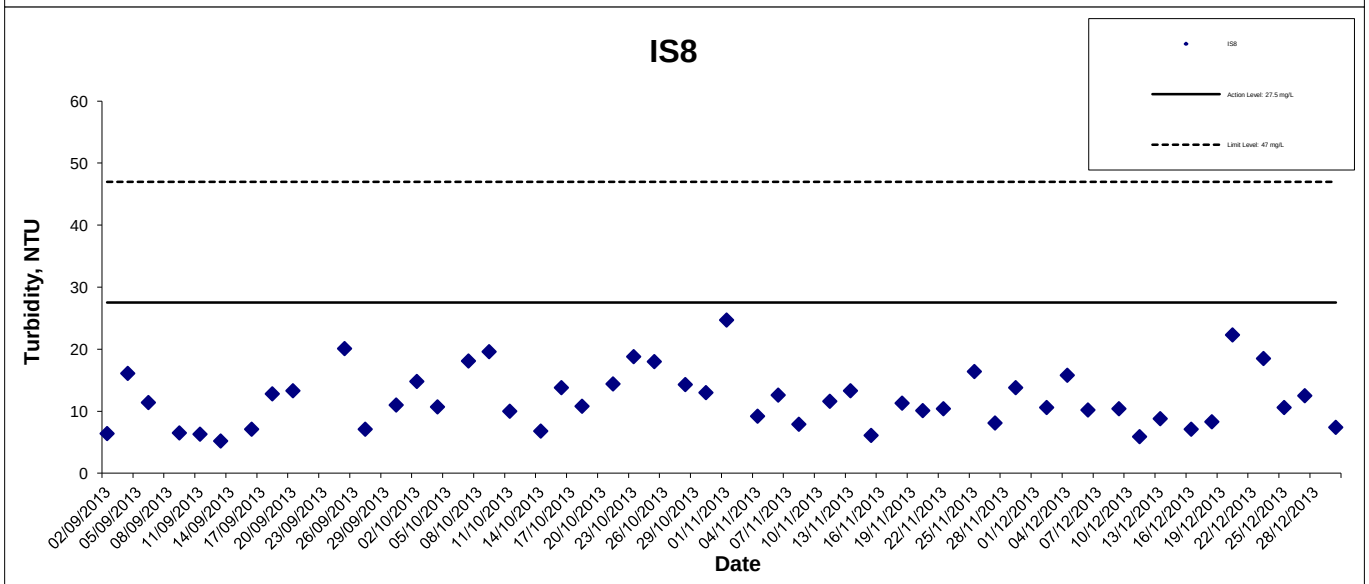


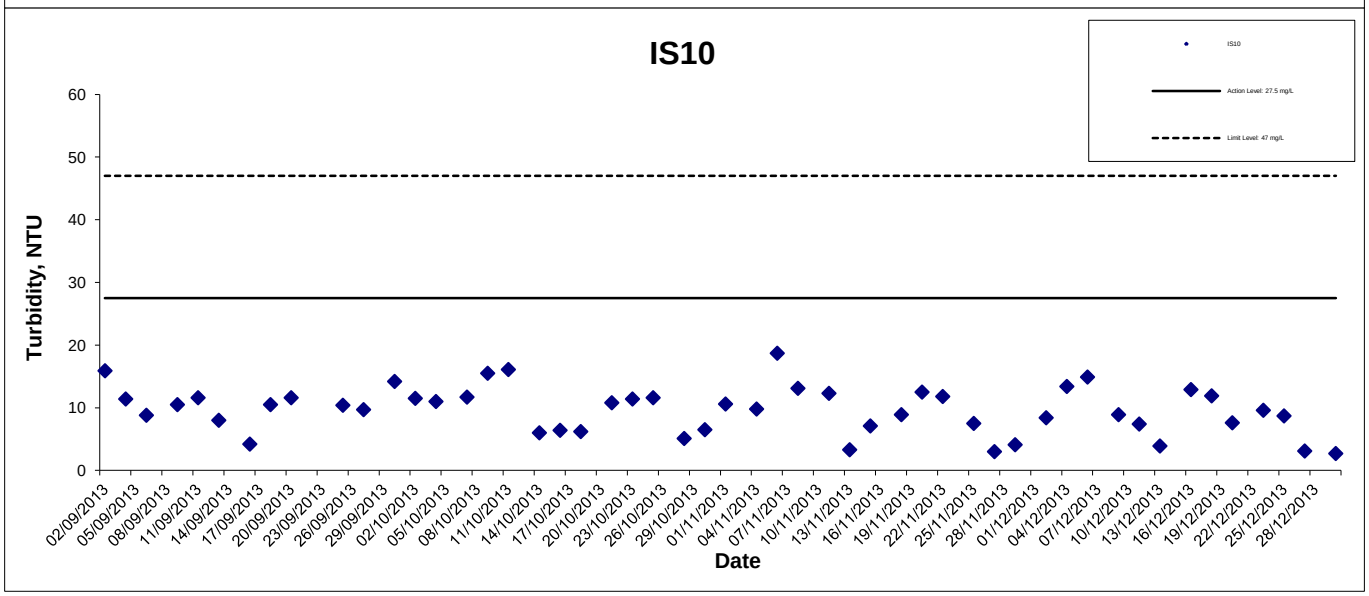




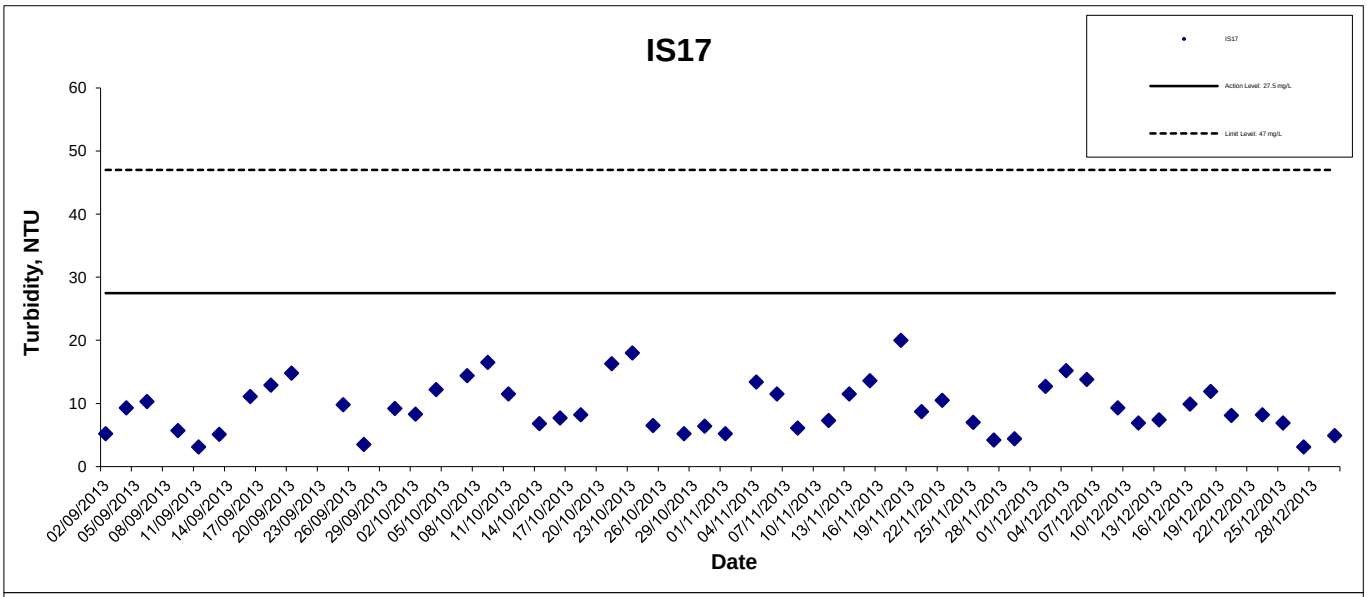
Turbidity at Mid-Flood Tide

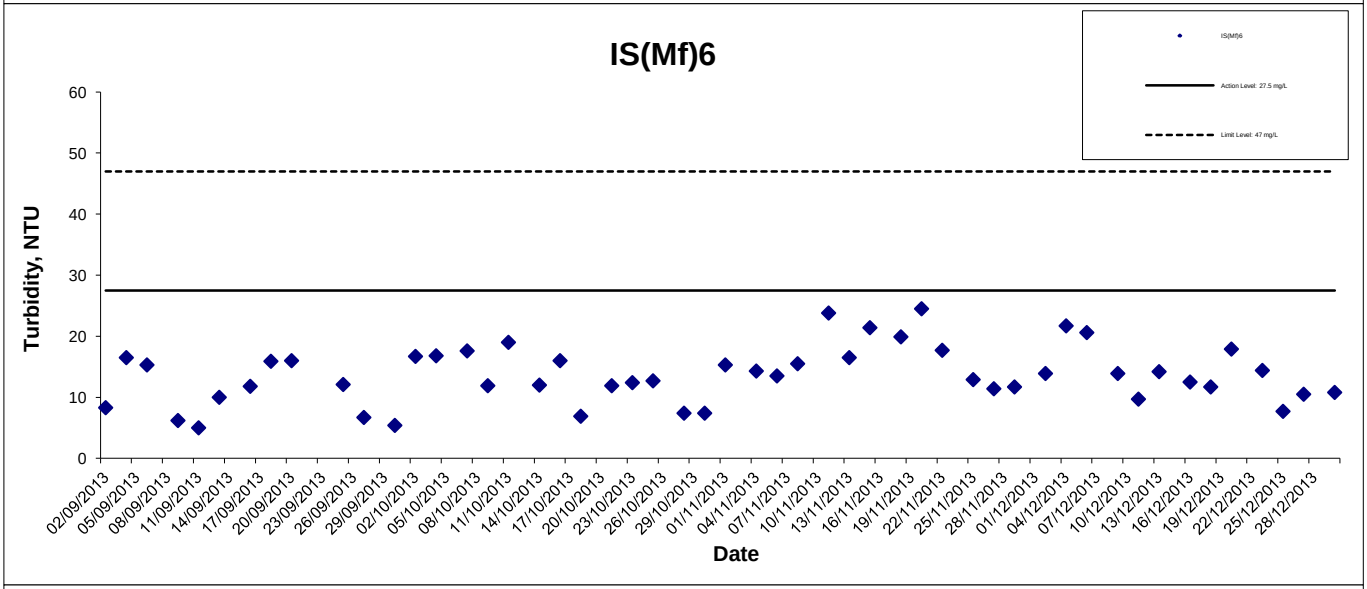


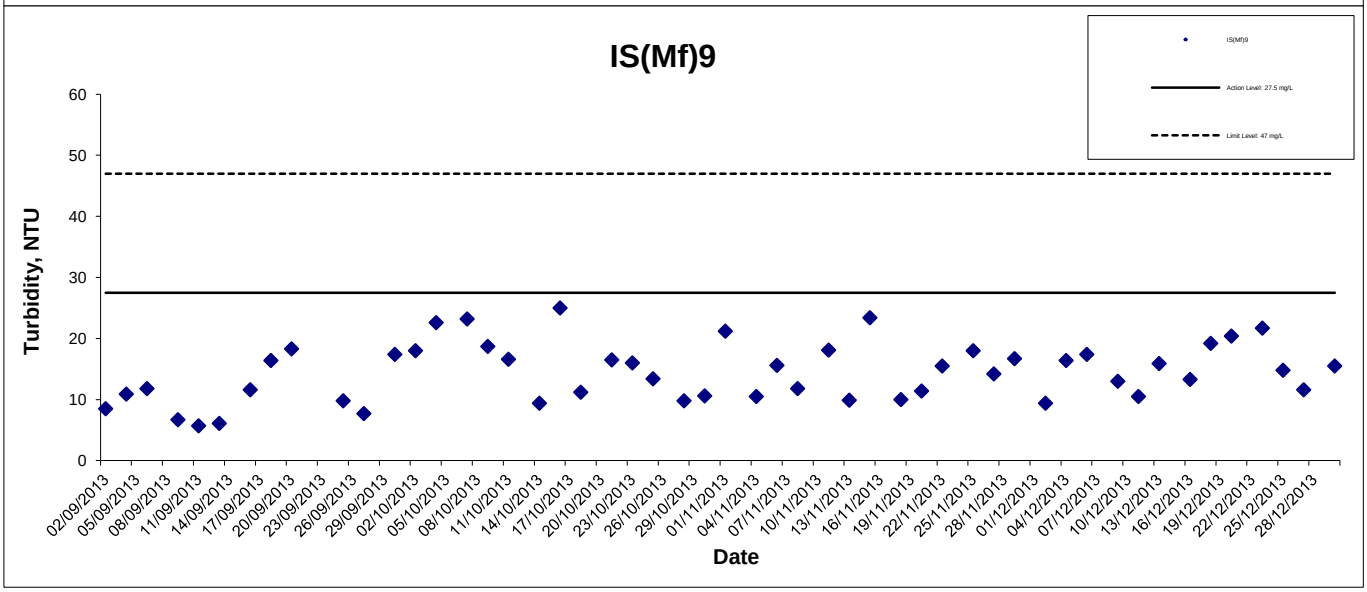




Turbidity at Mid-Flood Tide







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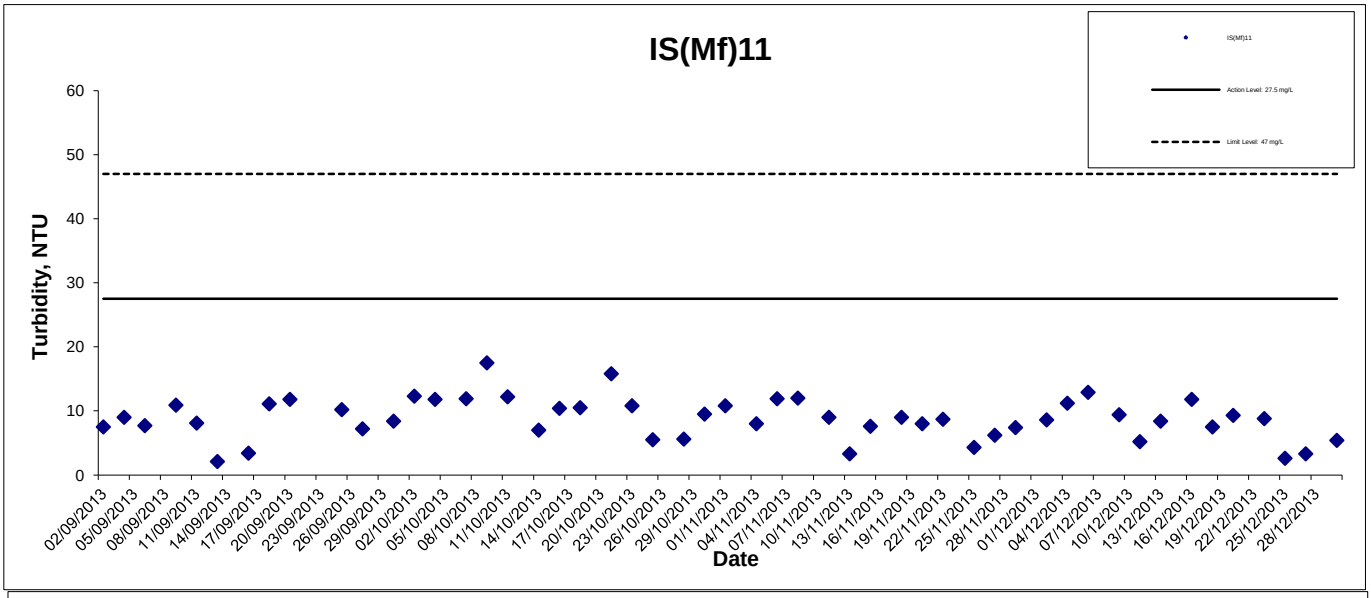
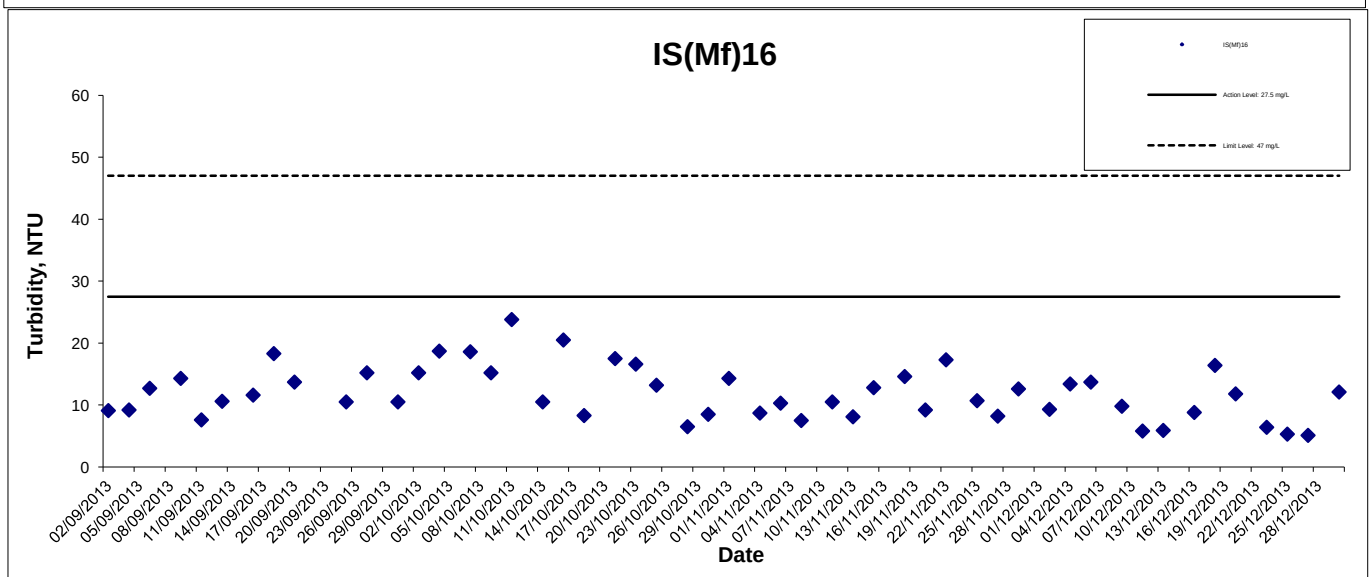
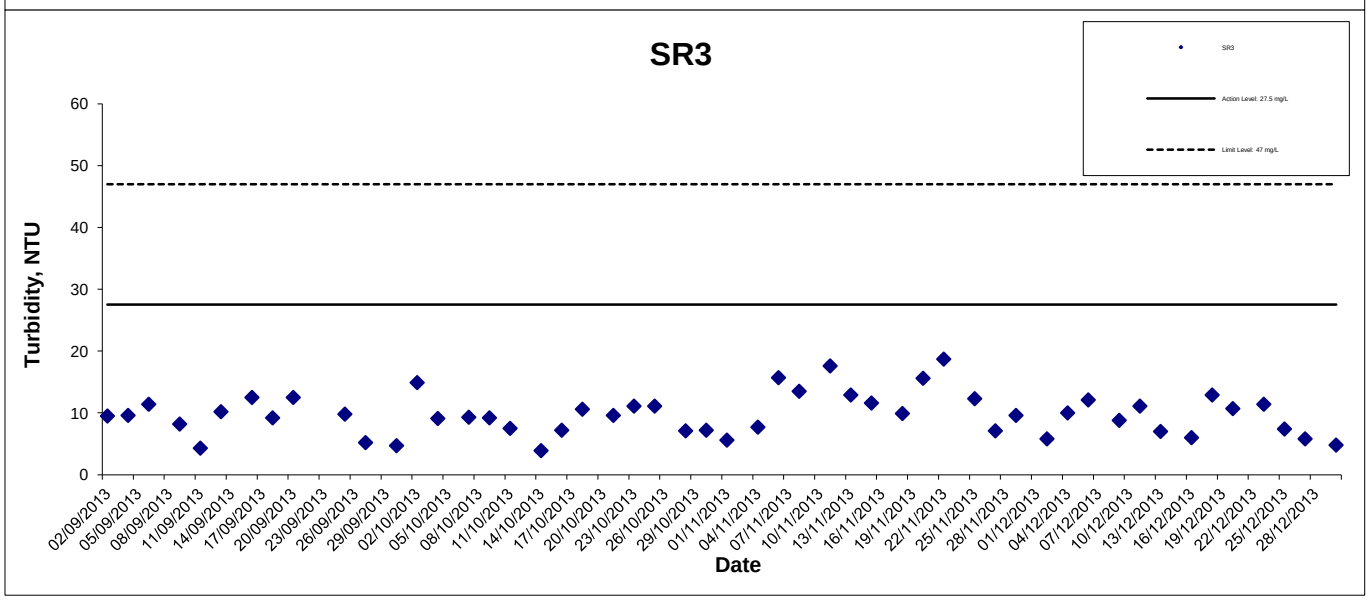
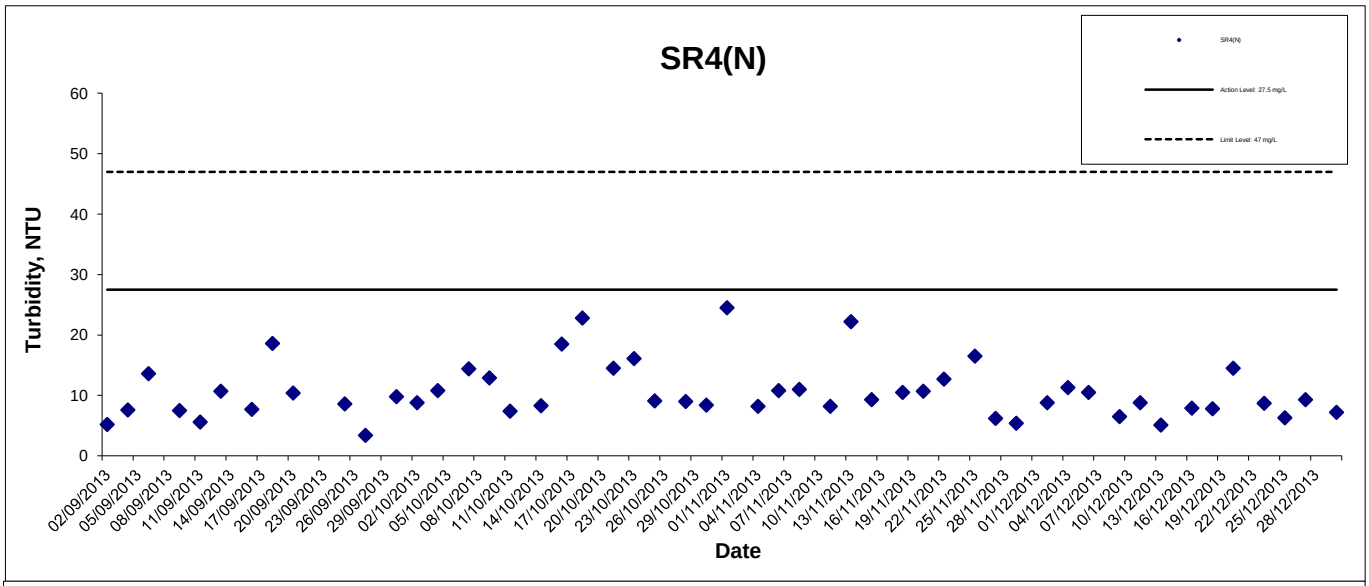
Turbidity at Mid-Flood Tide

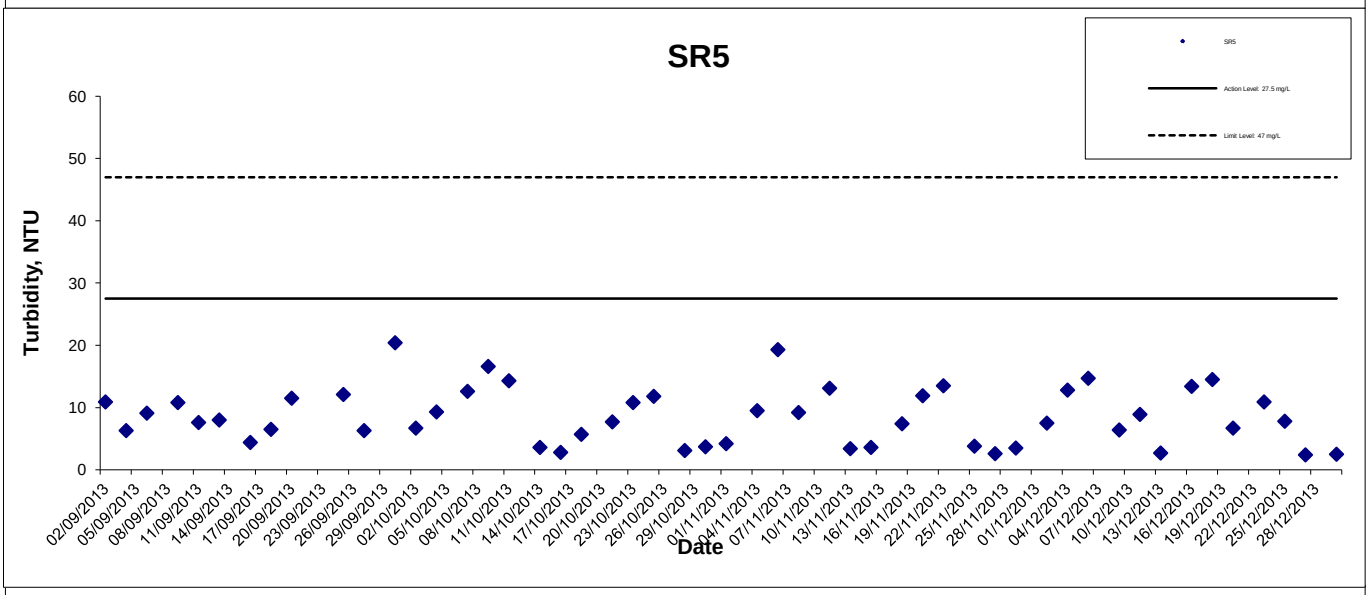


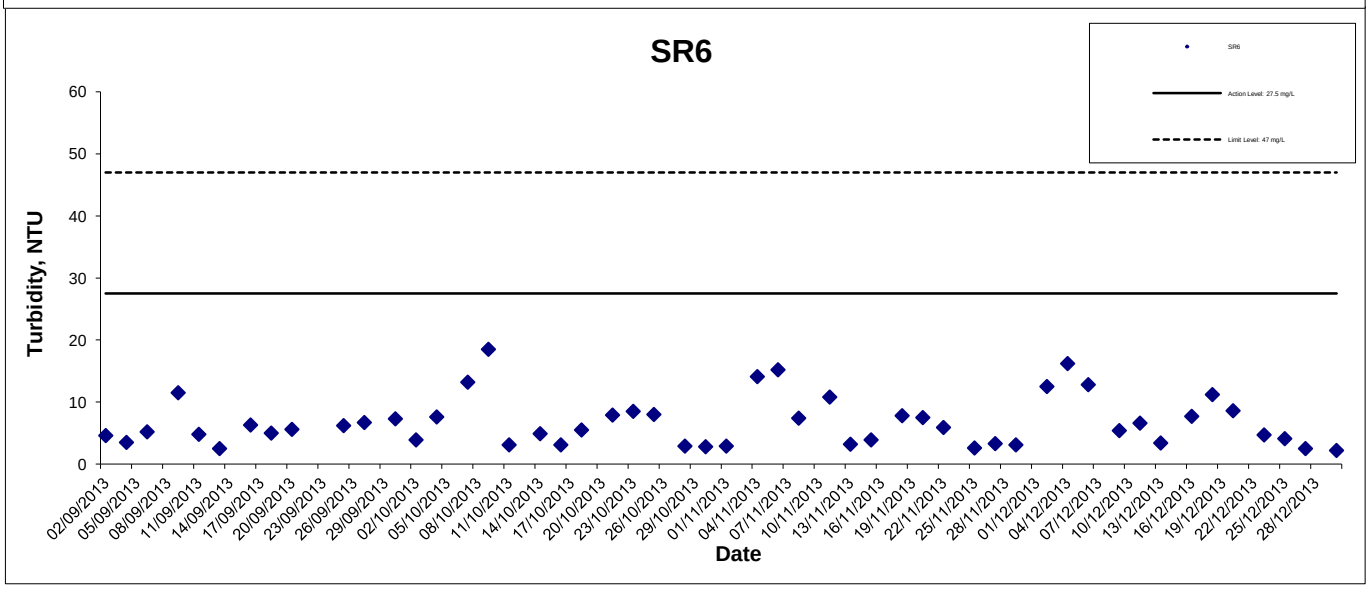




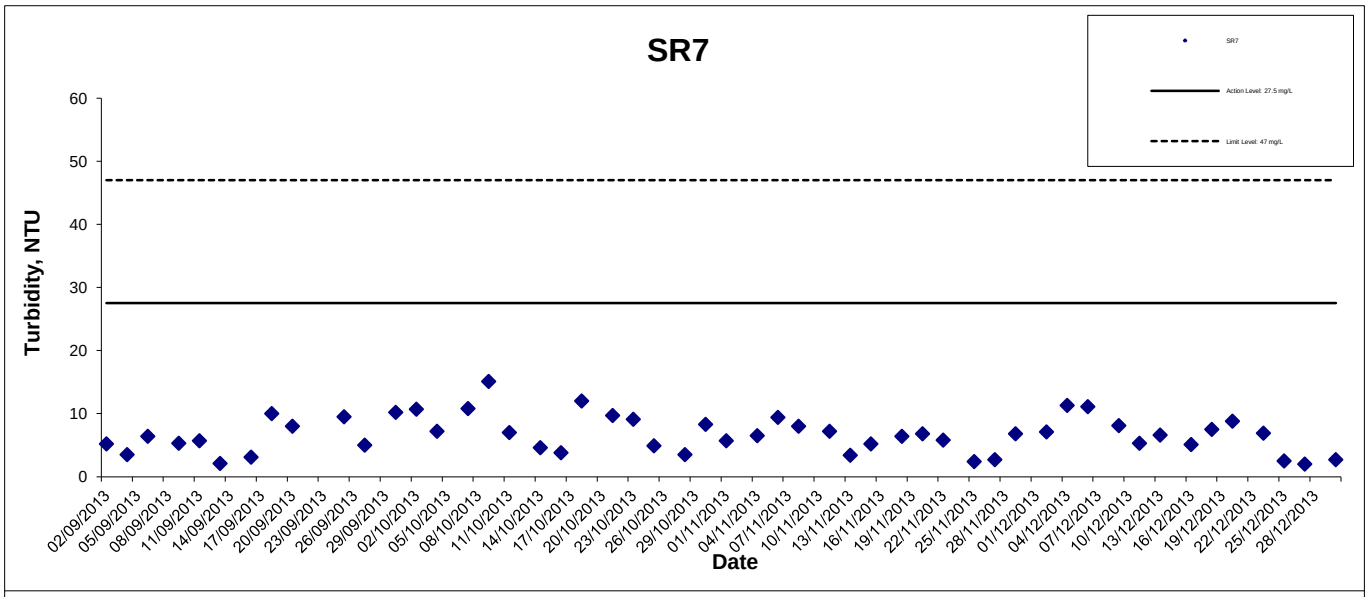
Turbidity at Mid-Flood Tide

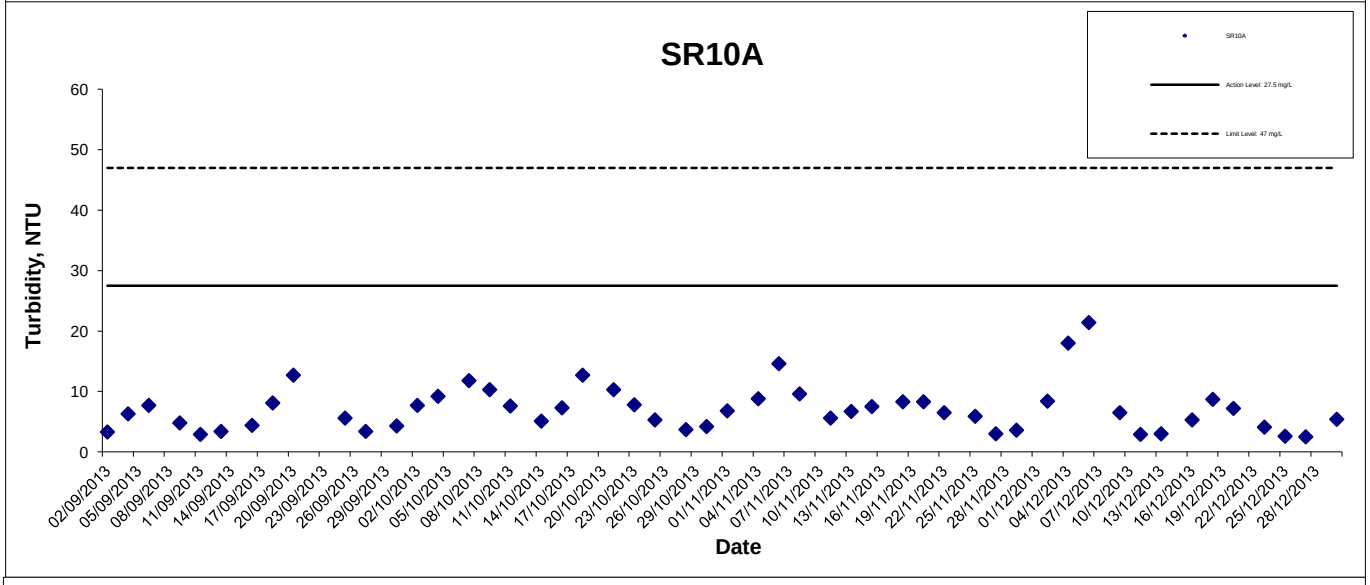


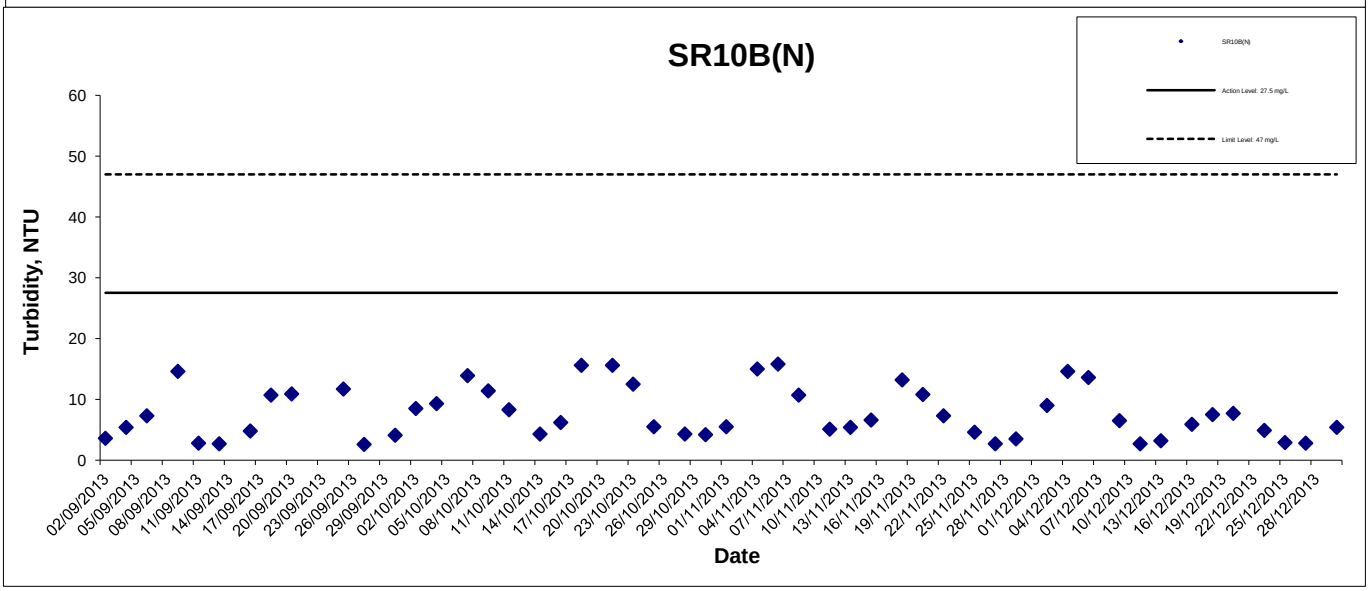




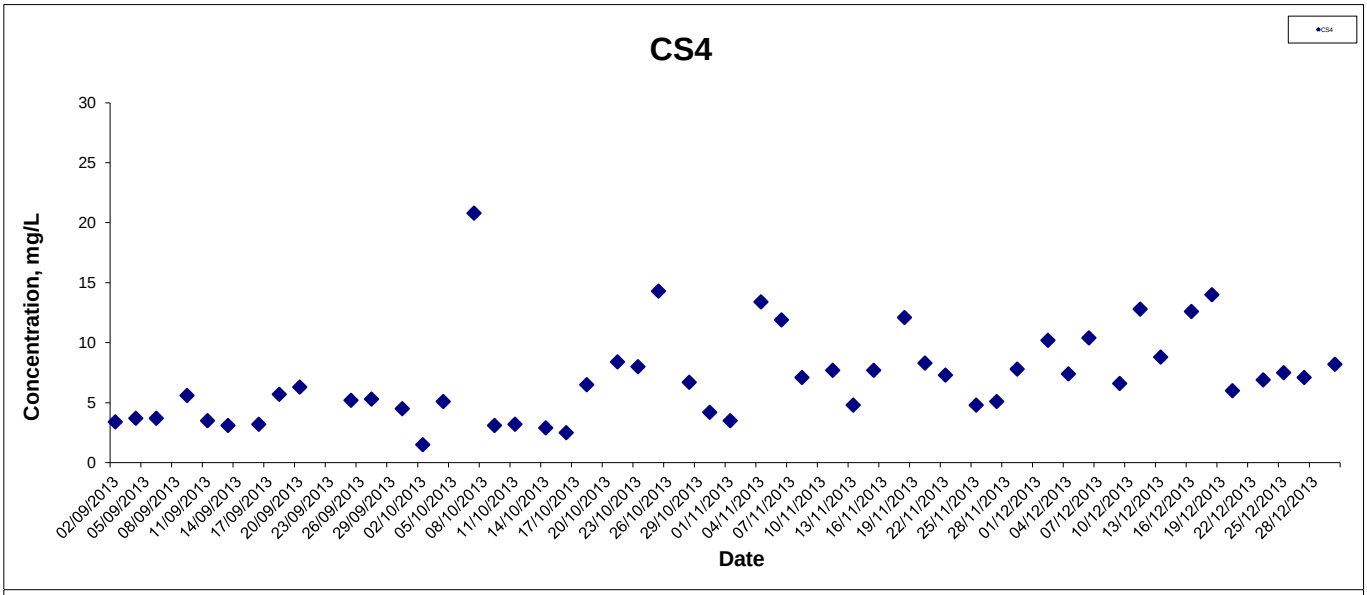
Turbidity at Mid-Flood Tide

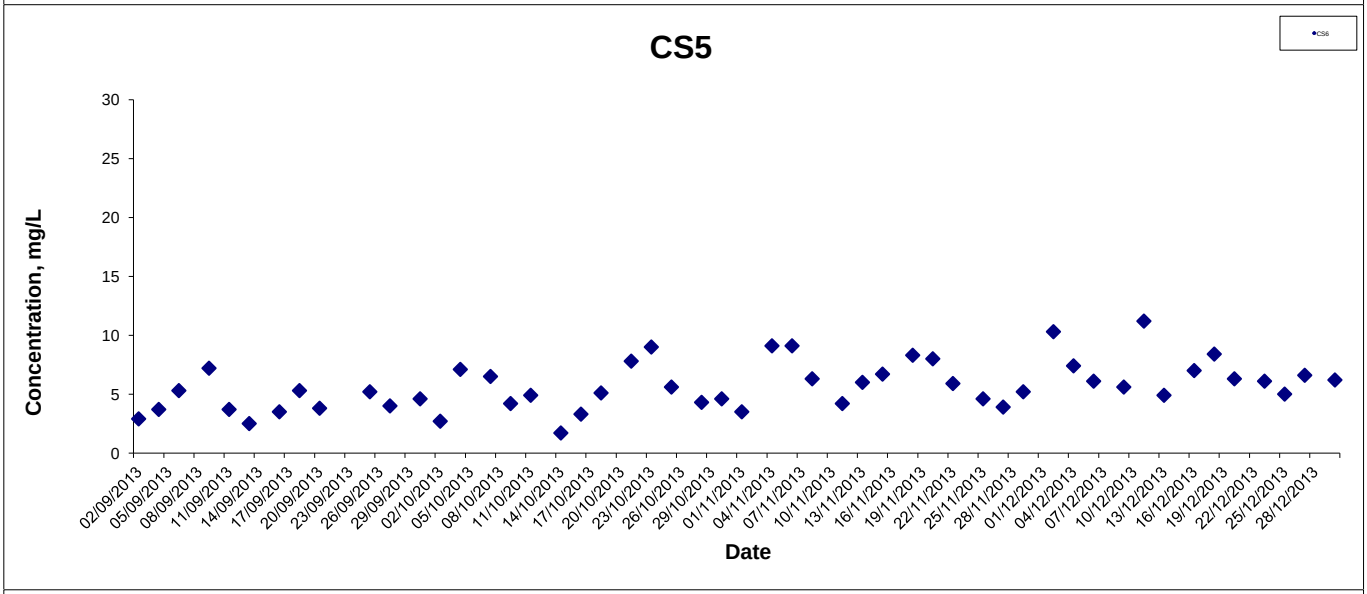


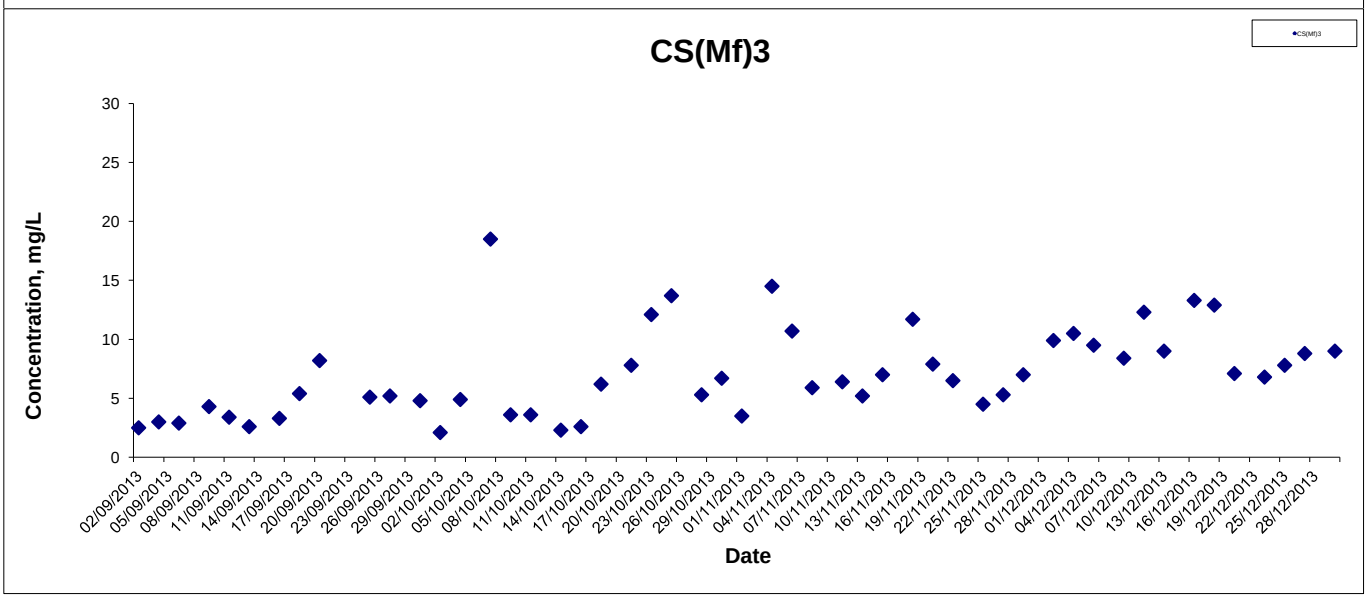




Suspended Solids at Mid-Ebb Tide







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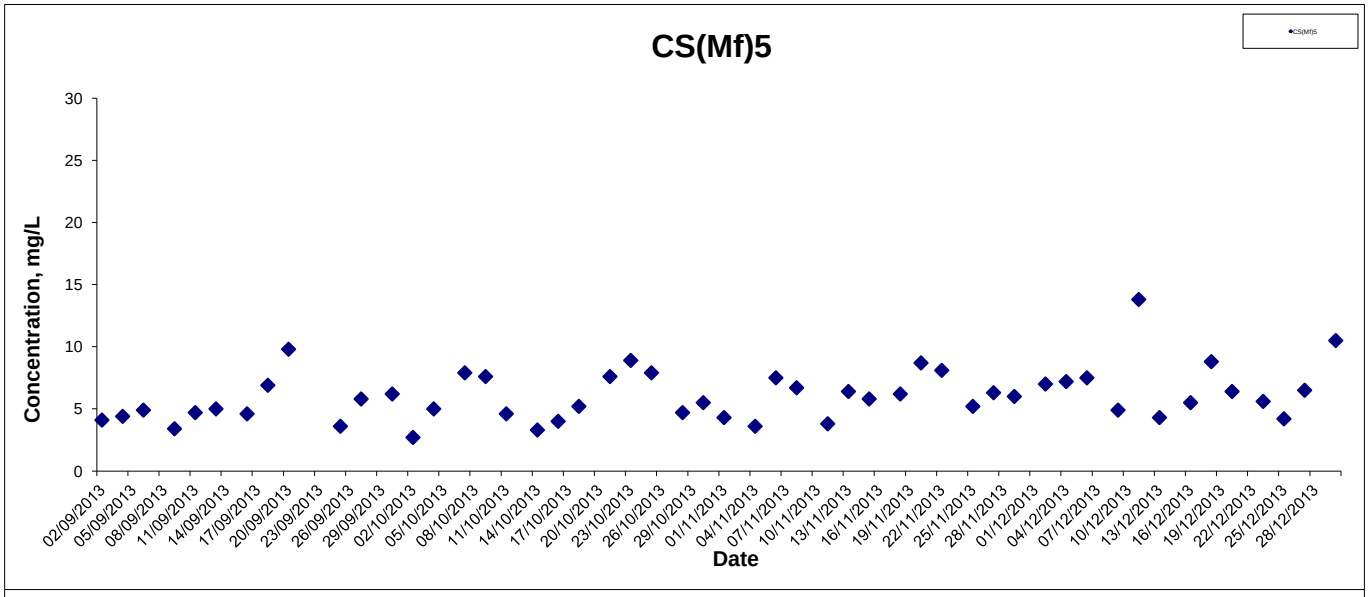
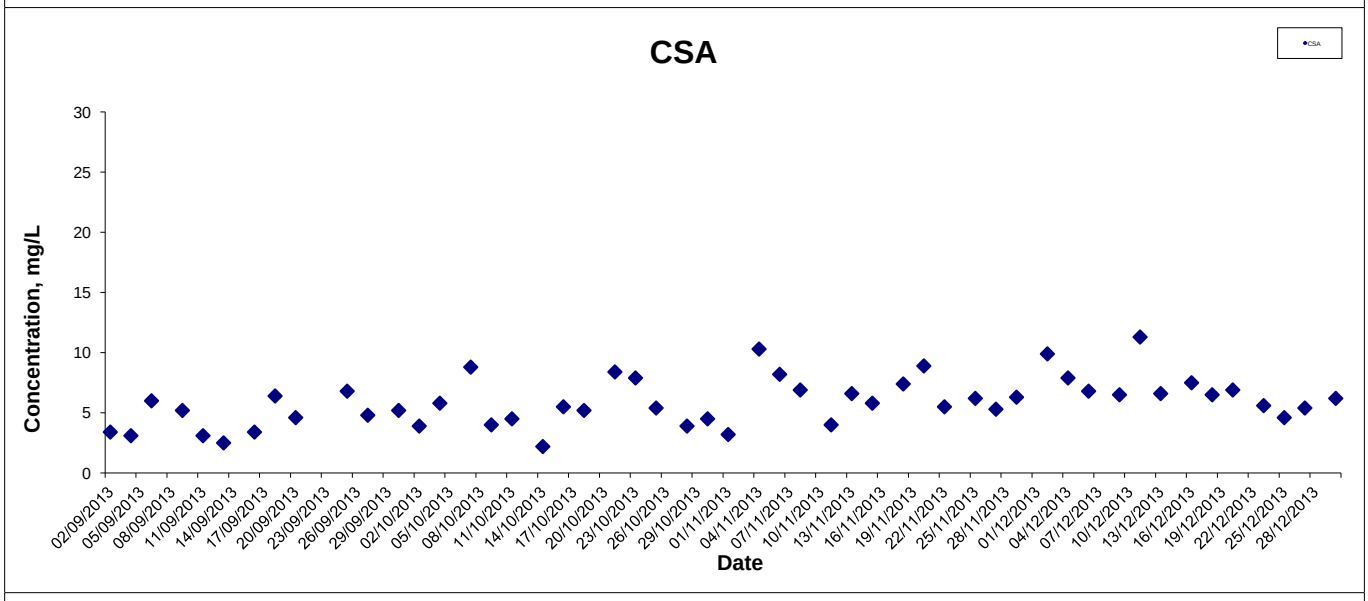
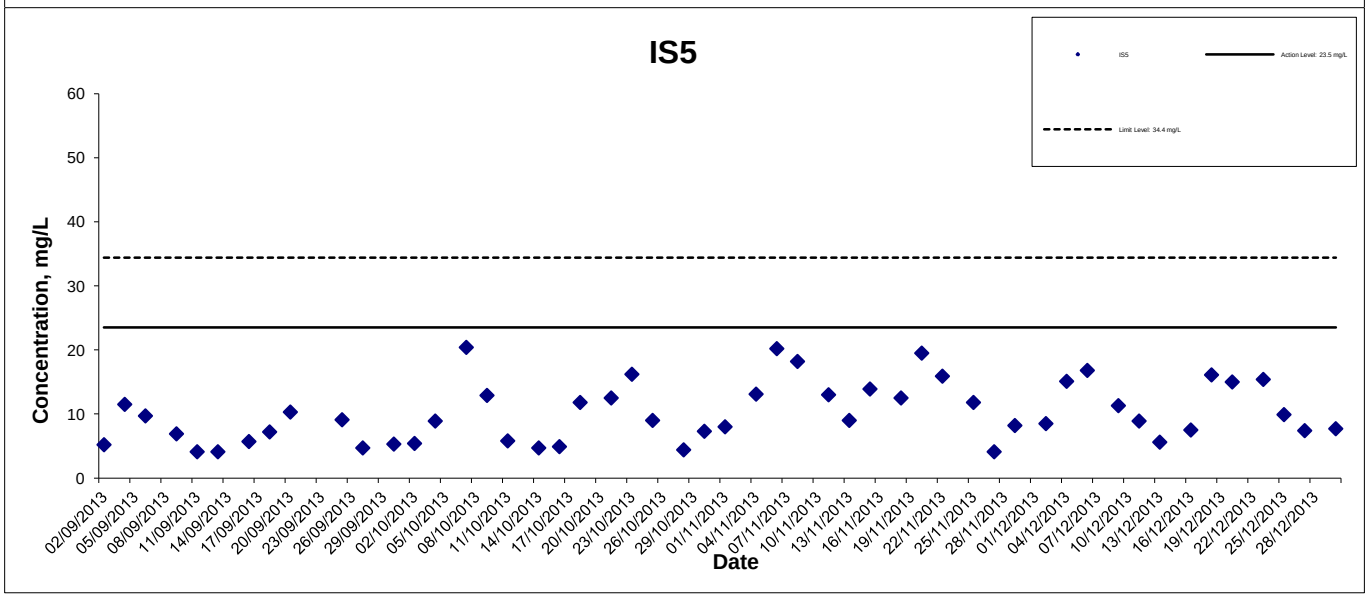
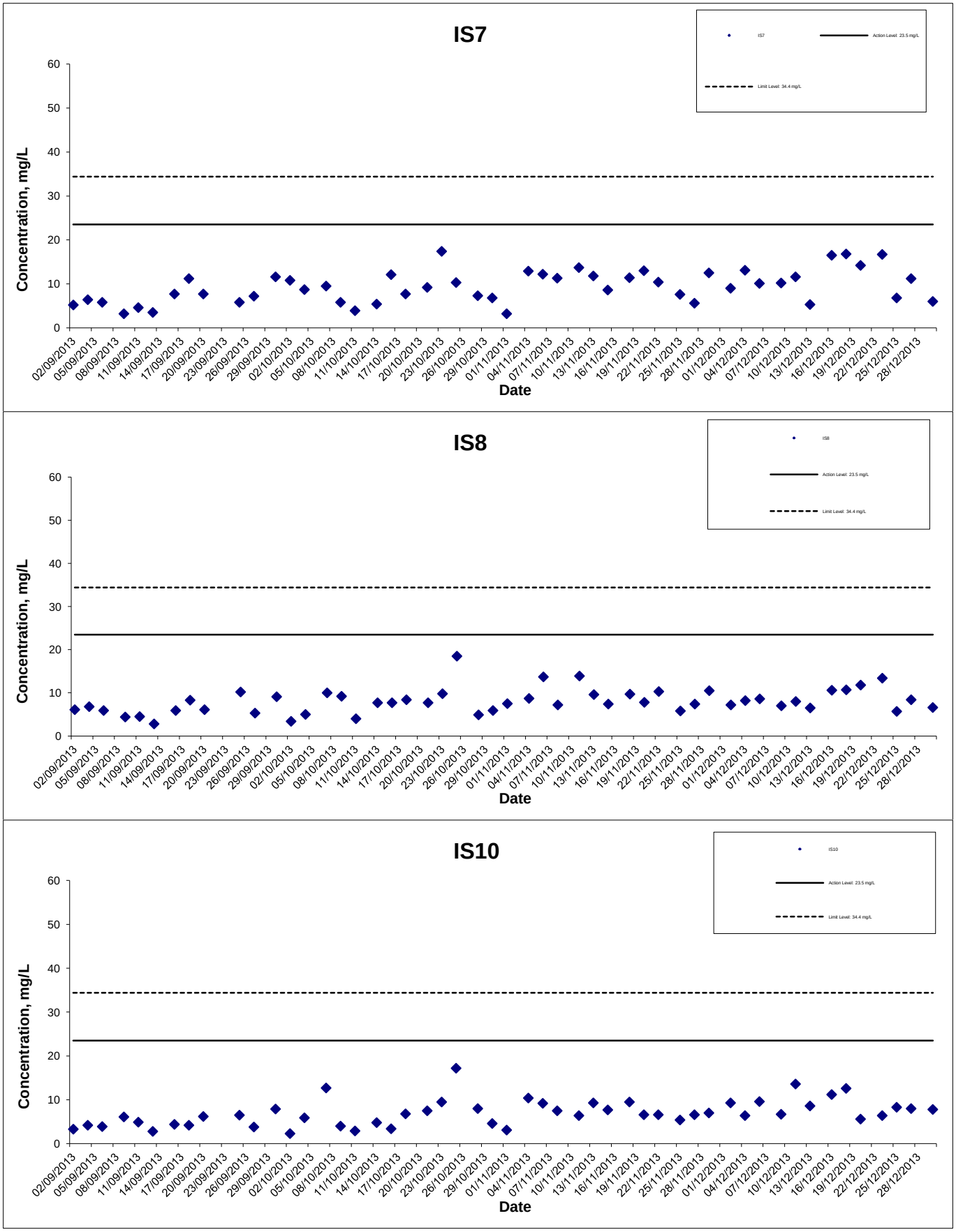
Suspended Solids at Mid-Ebb Tide



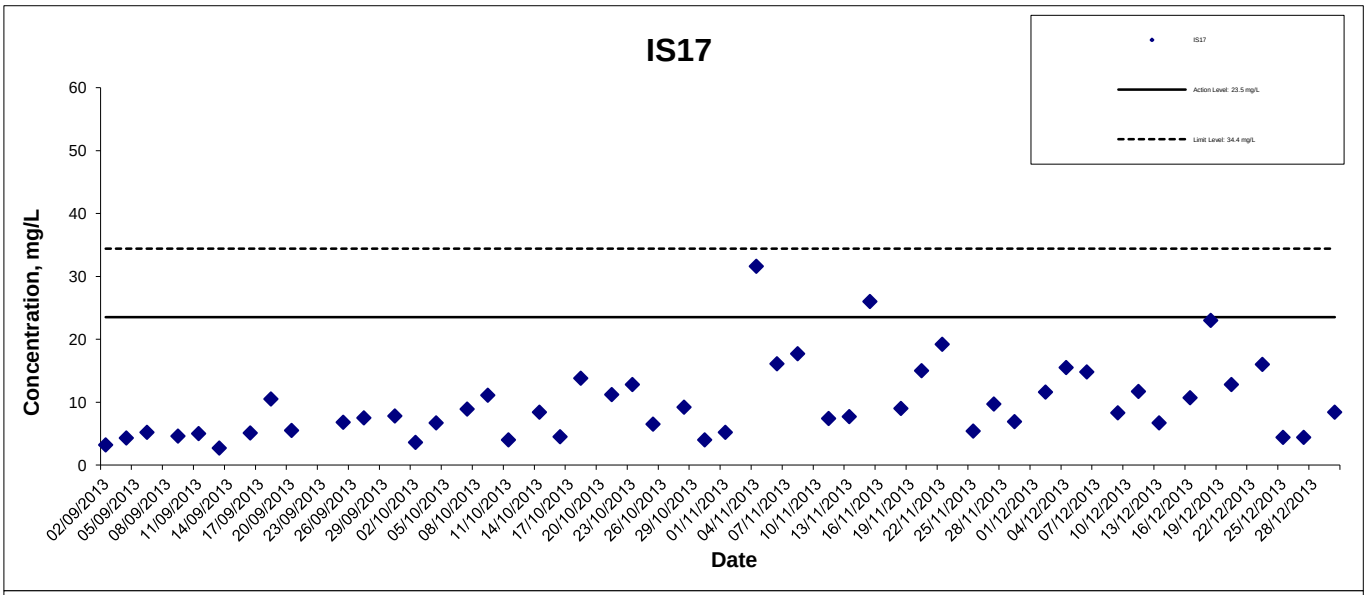


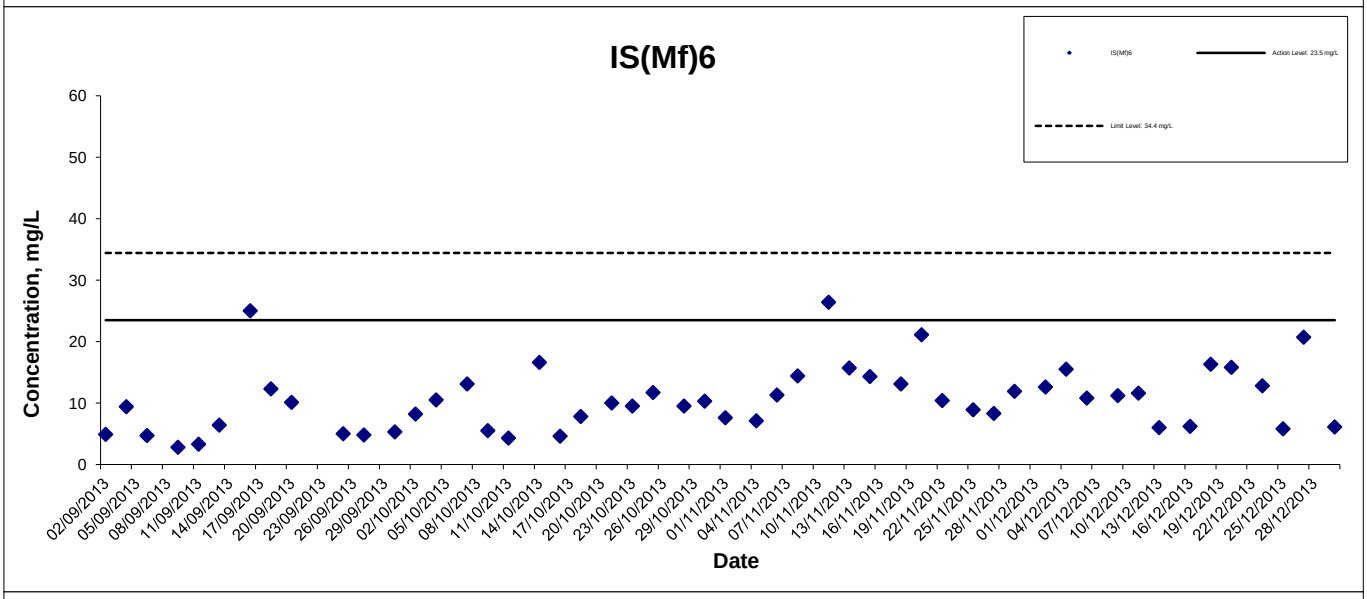


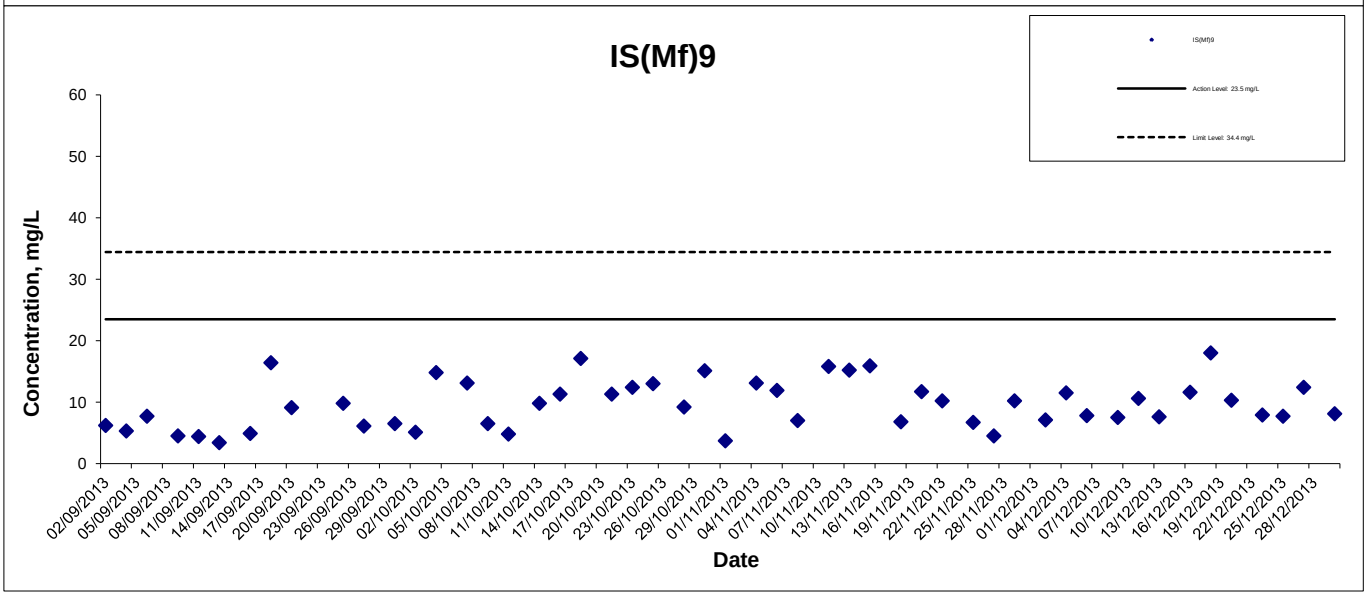
Suspended Solids at Mid-Ebb Tide



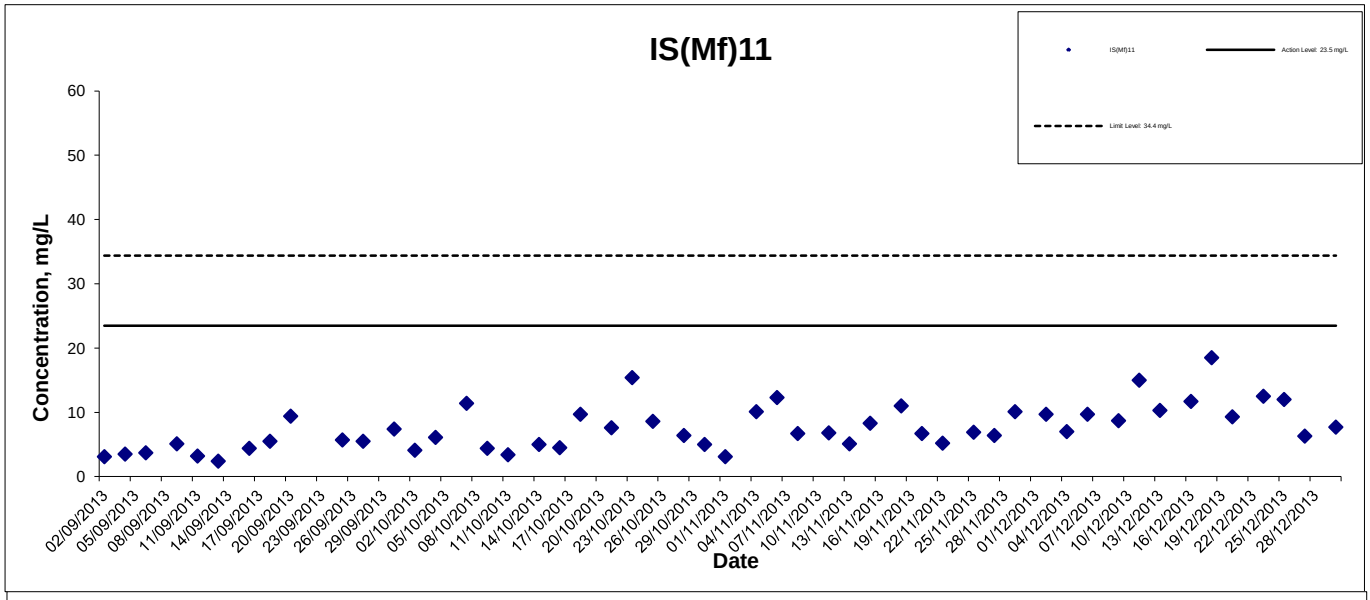
Suspended Solids at Mid-Ebb Tide

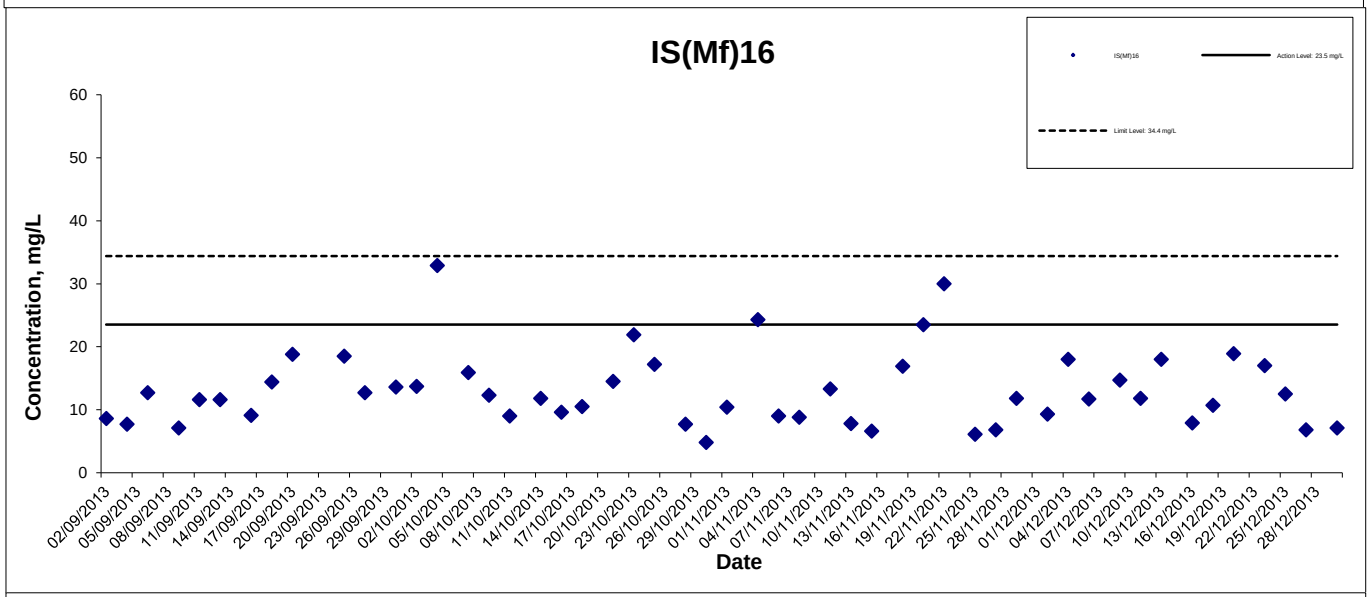


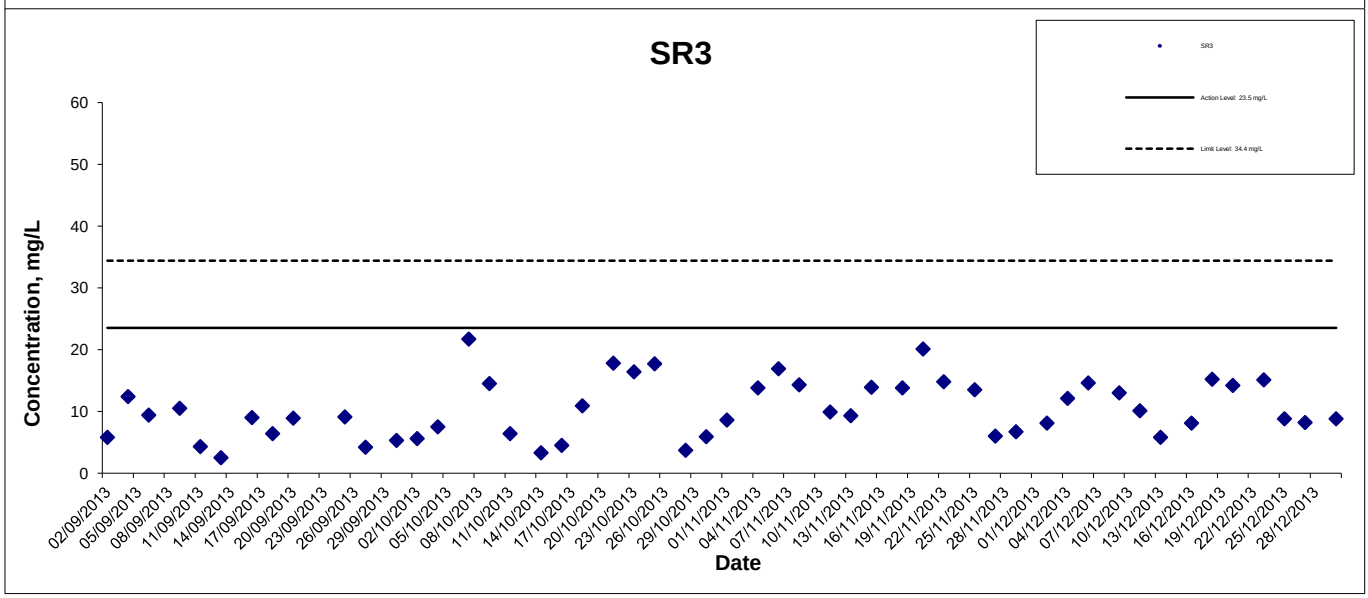




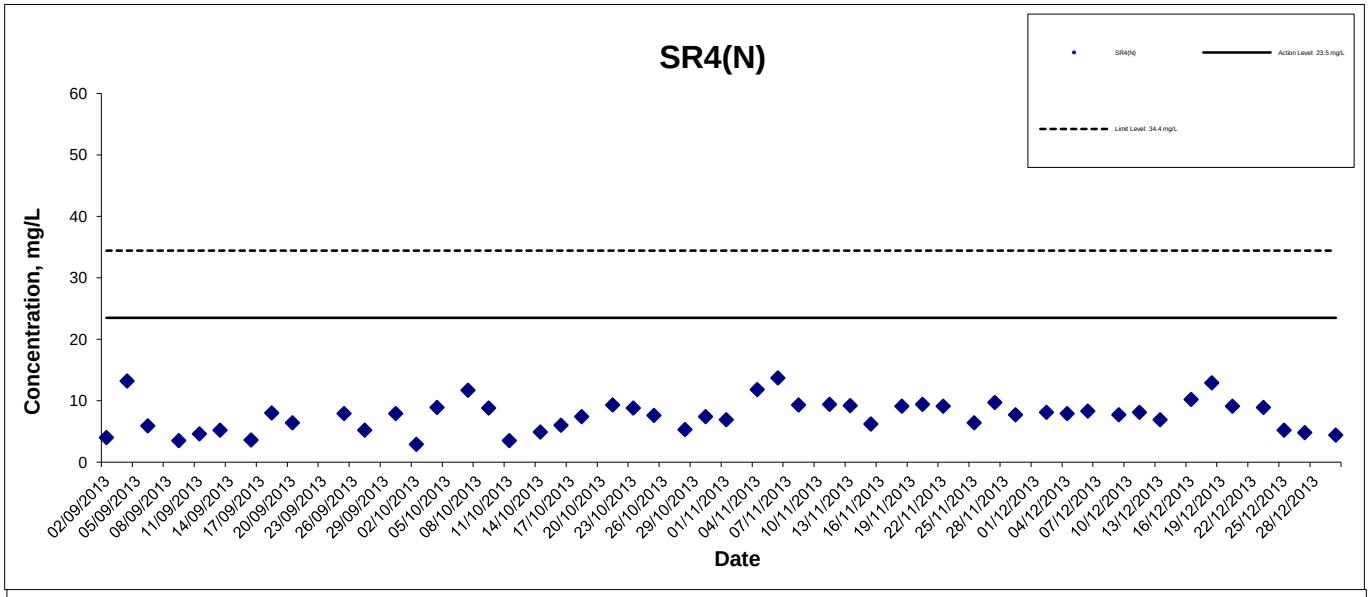
Suspended Solids at Mid-Ebb Tide

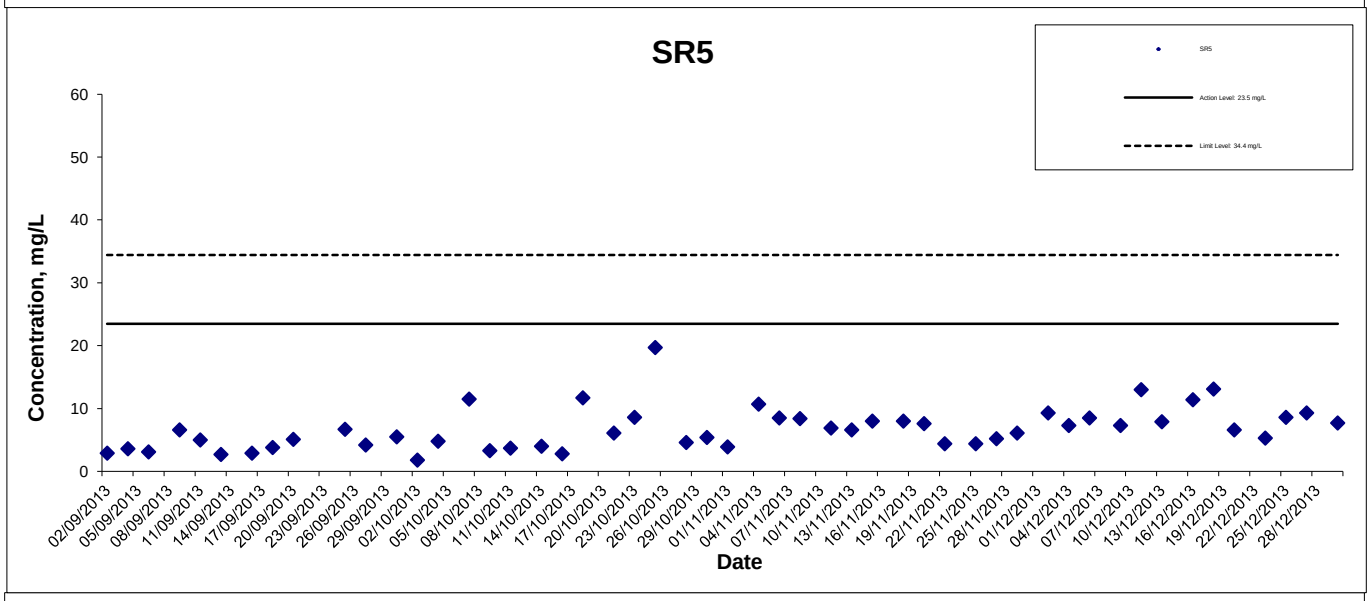


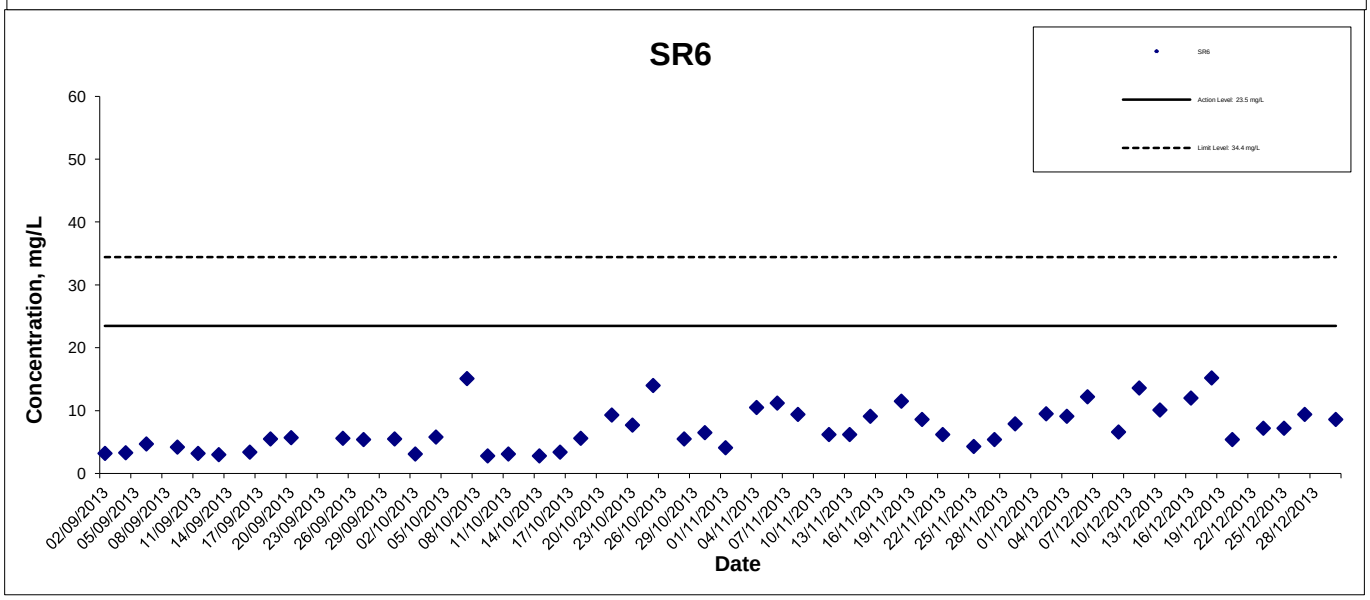




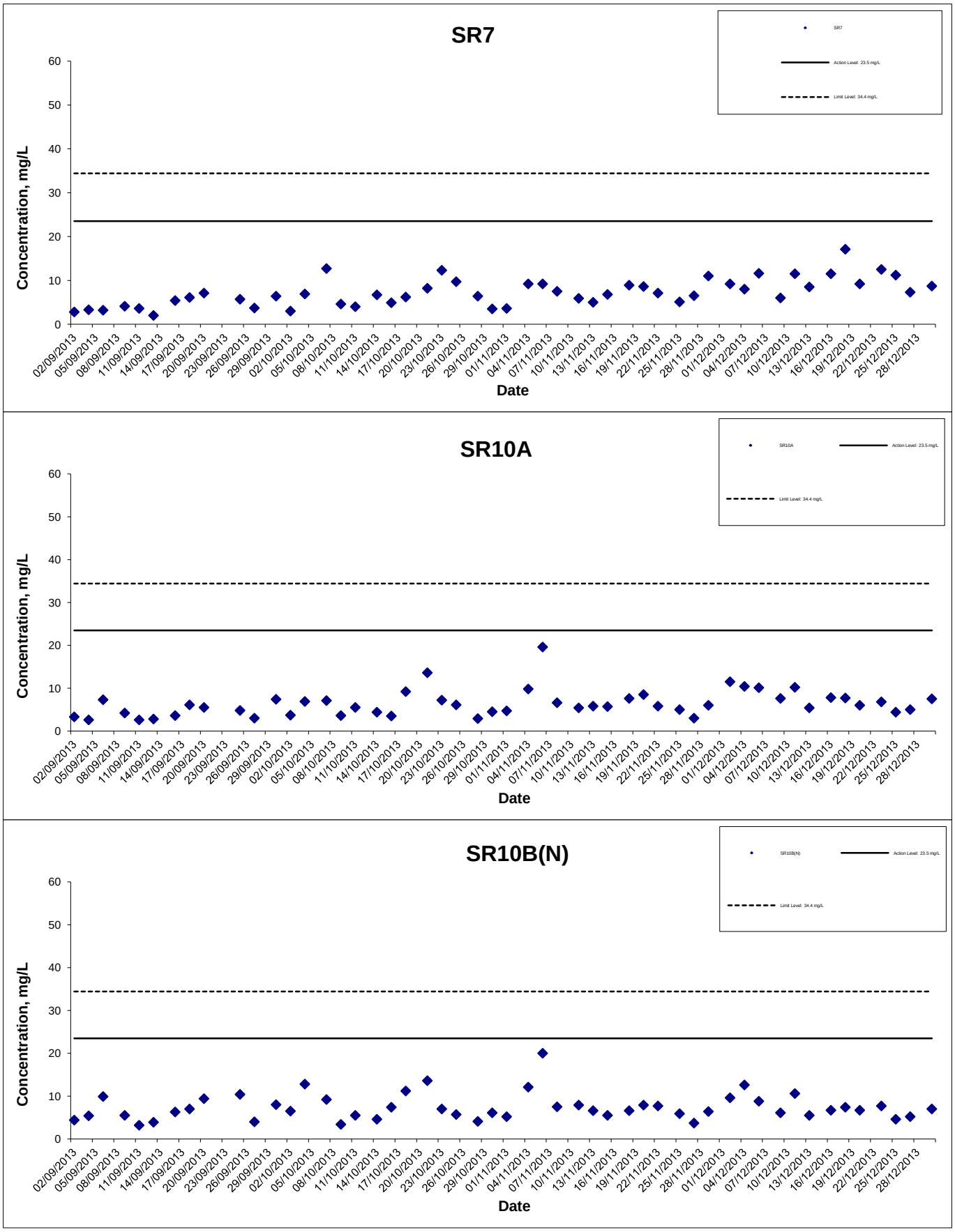
Suspended Solids at Mid-Ebb Tide







Suspended Solids at Mid-Ebb Tide

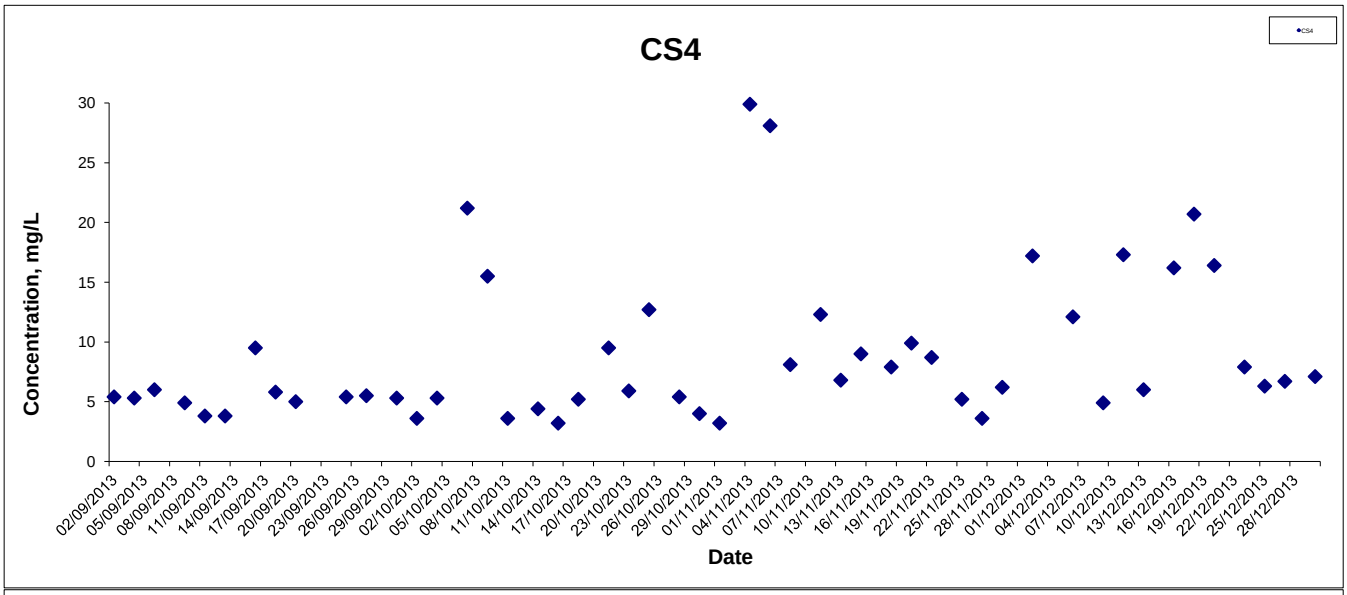


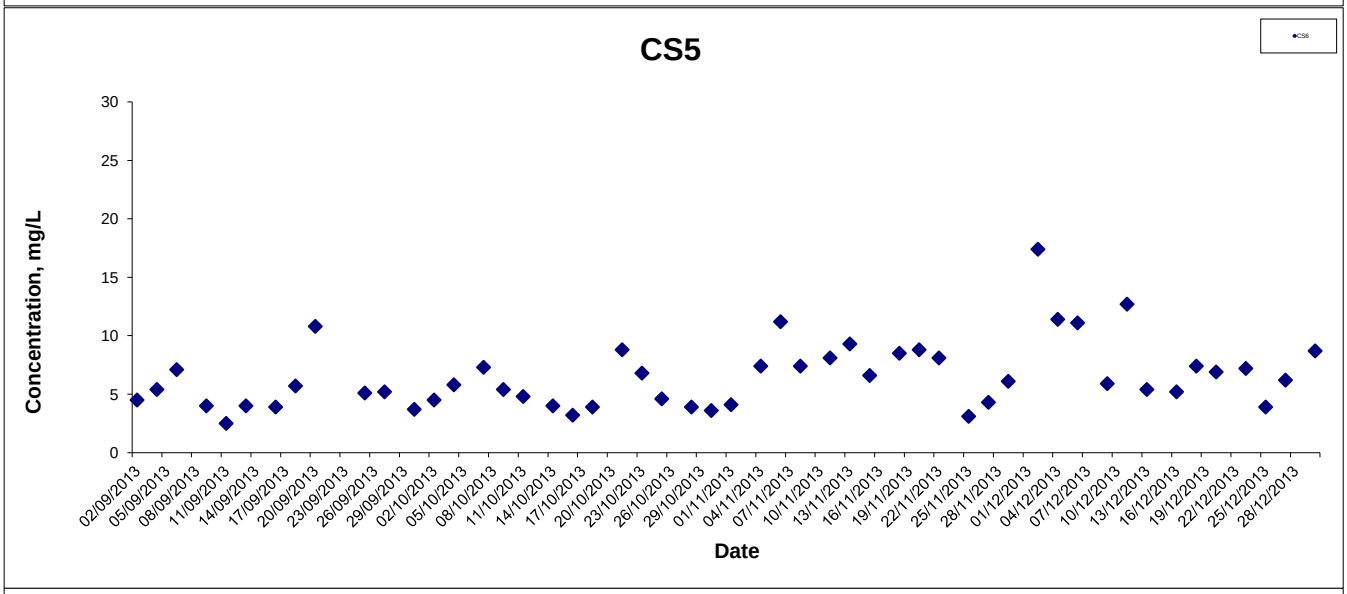
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

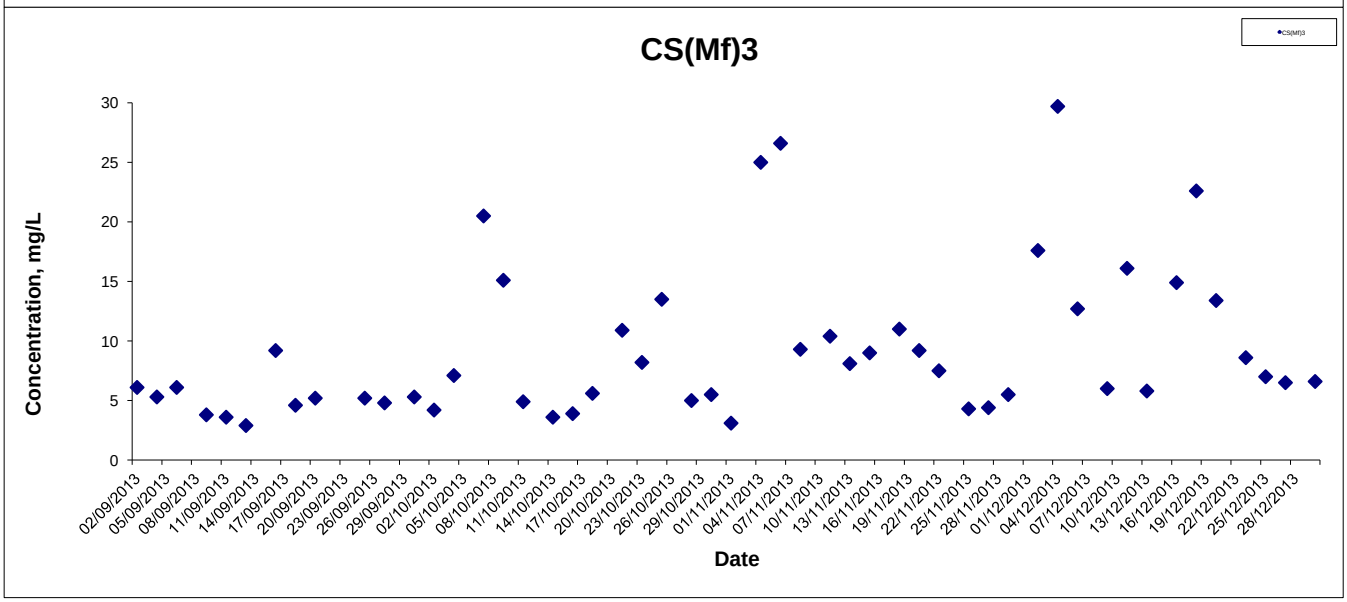
Graphical Presentation of Impact Water Quality Monitoring Results

Project No.: 60249820 **Date: Dec 2013** **Appendix J**

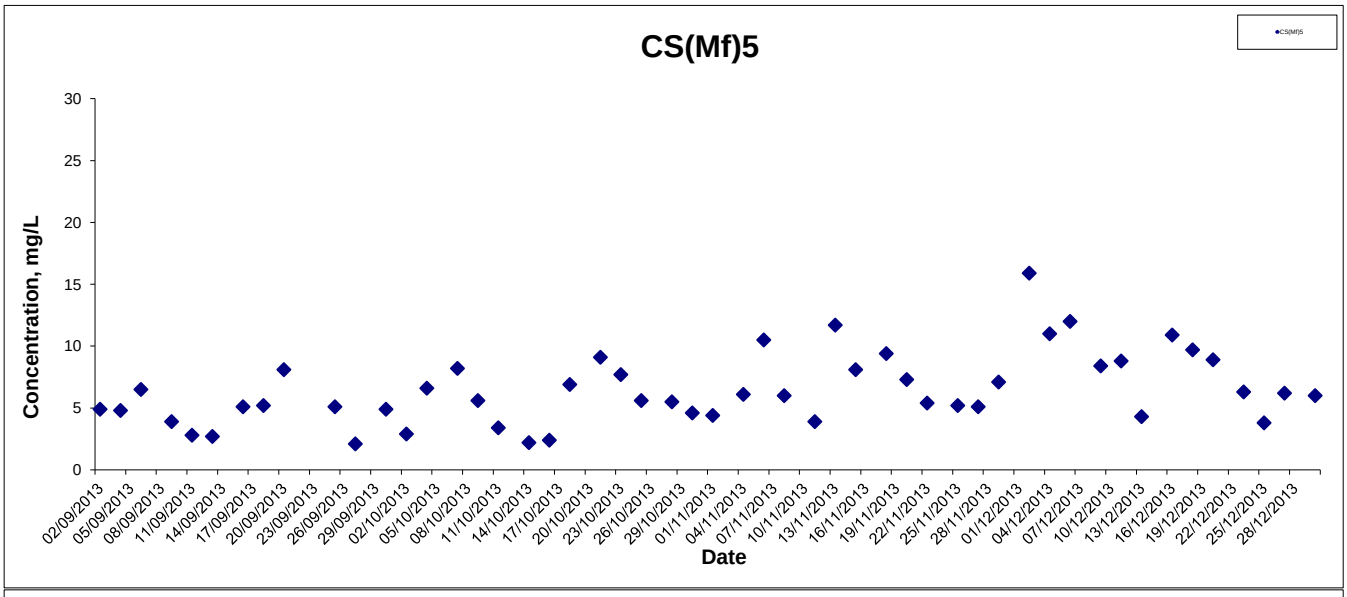
Suspended Solids at Mid-Flood Tide

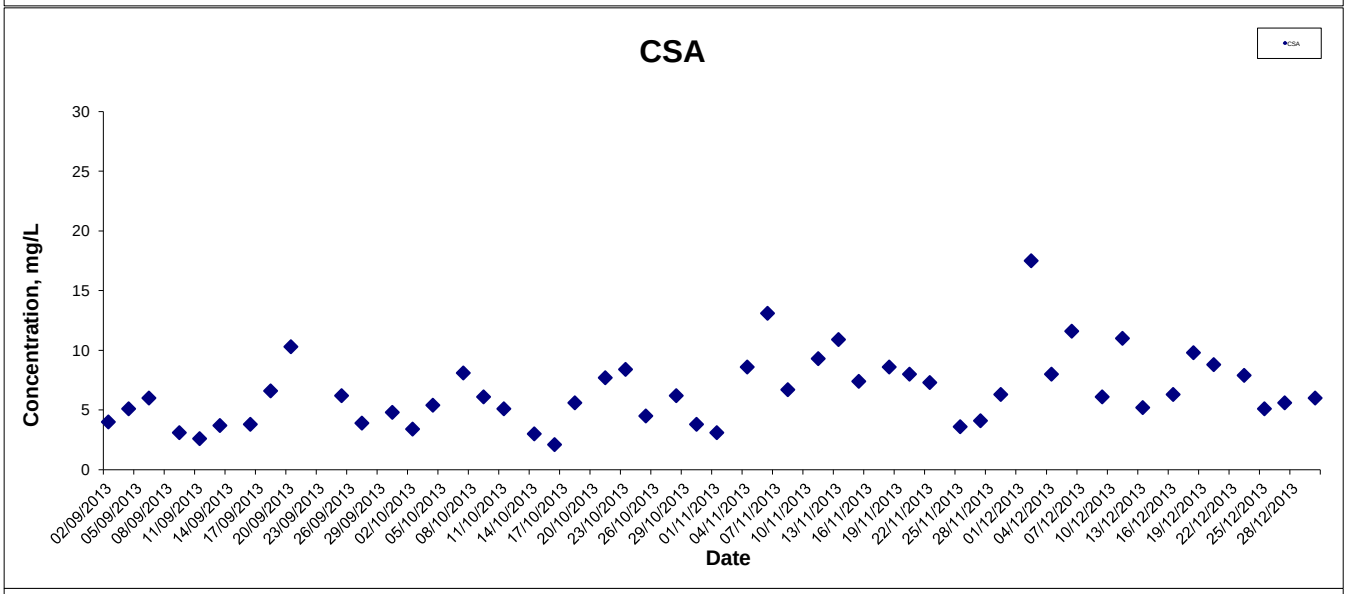


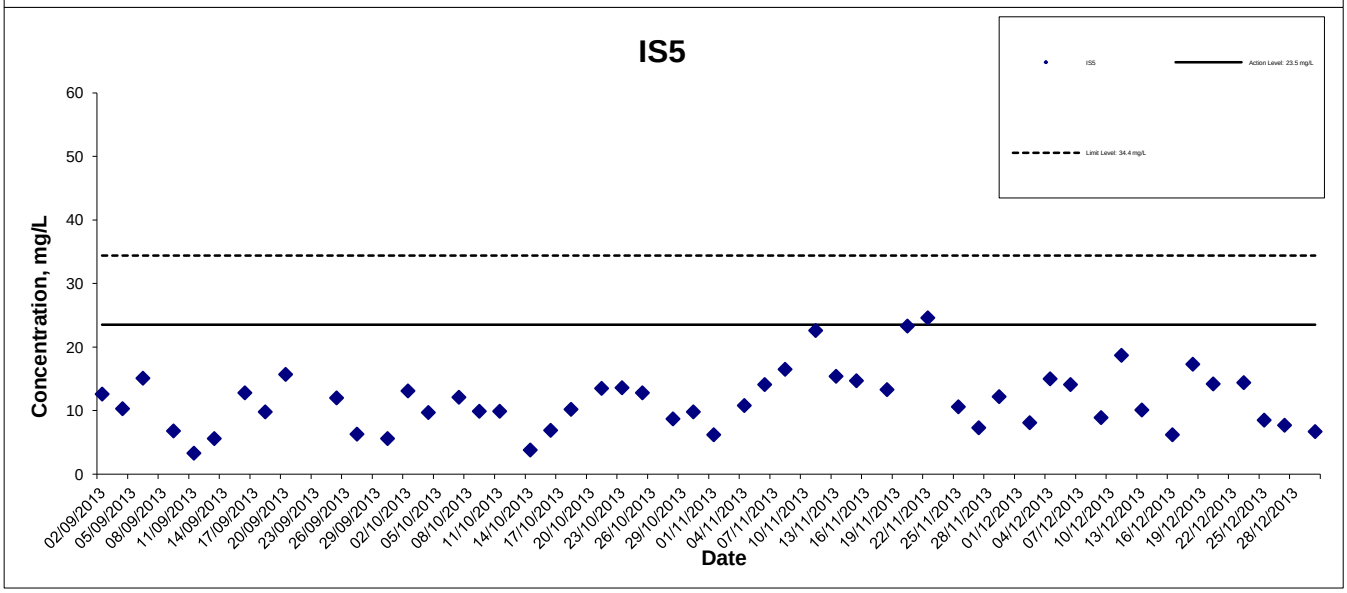




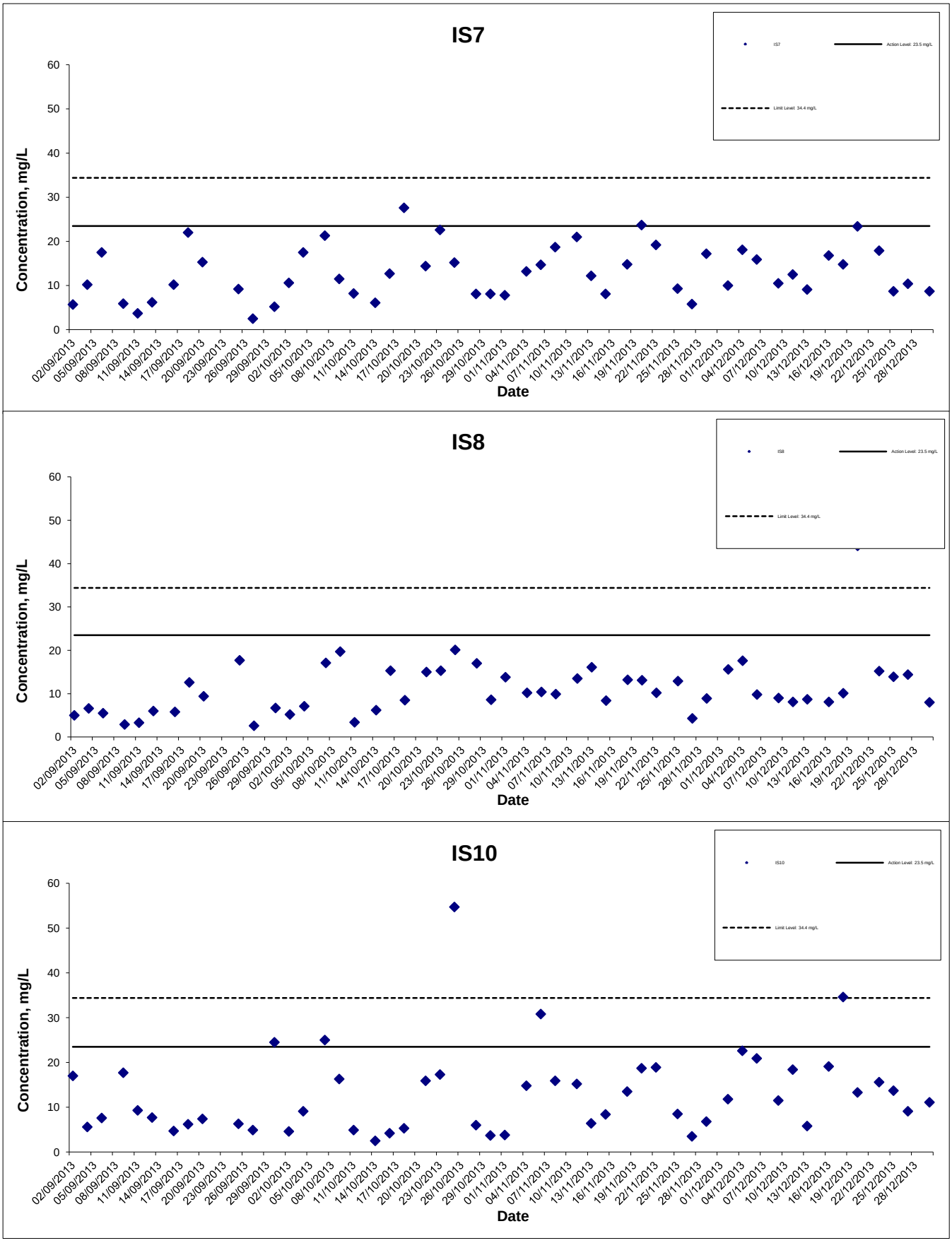
Suspended Solids at Mid-Flood Tide







Suspended Solids at Mid-Flood Tide



HONG KONG - ZHUHAI - MACAO BRIDGE
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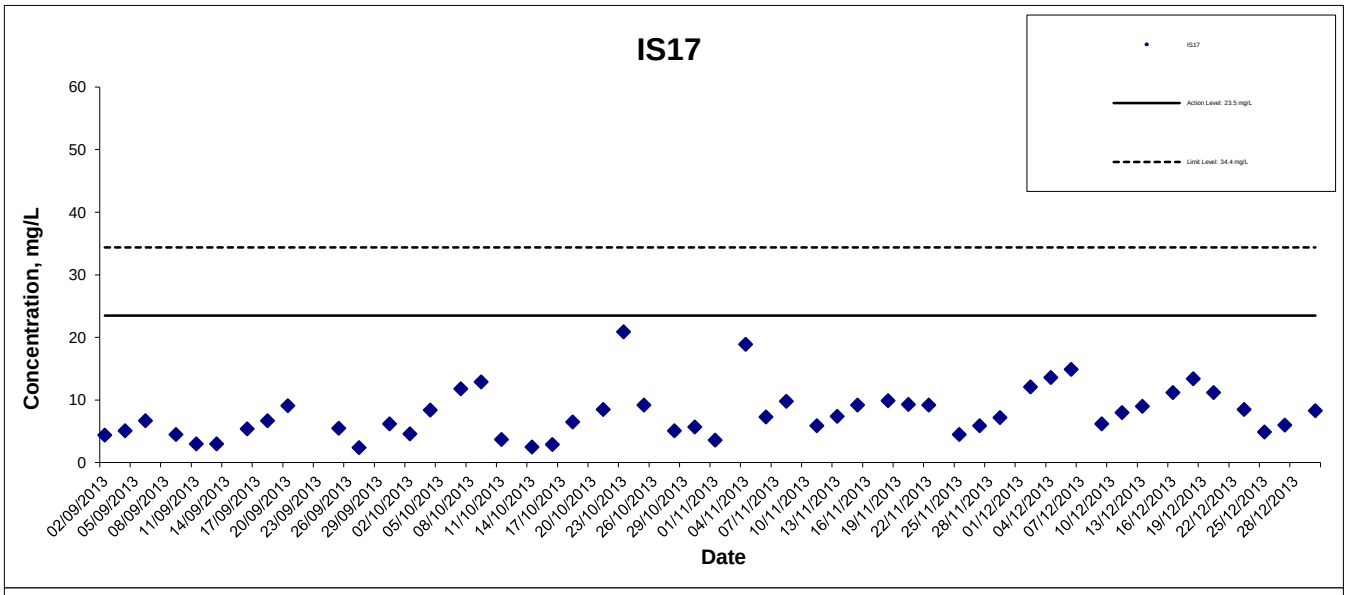
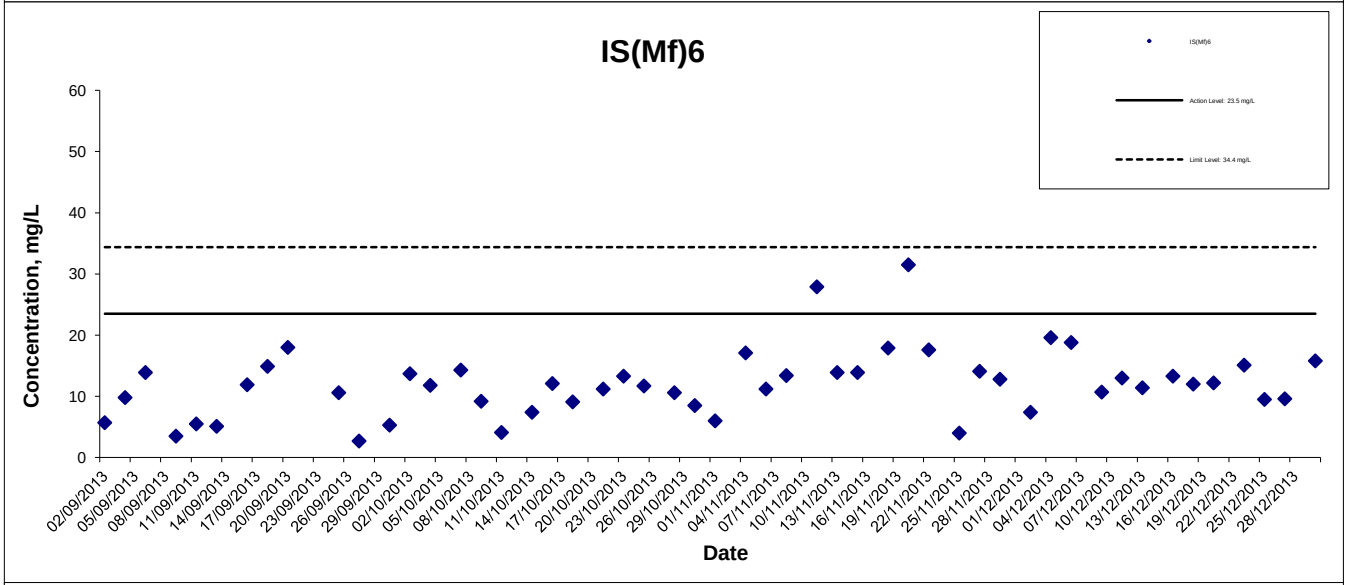
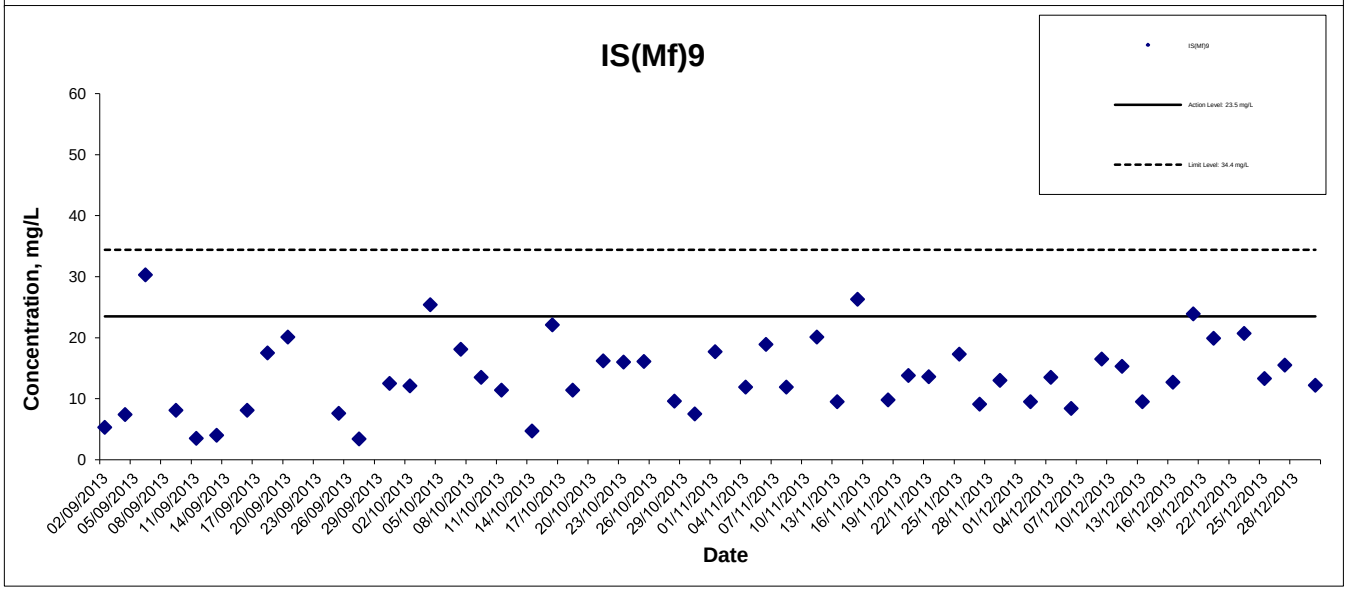
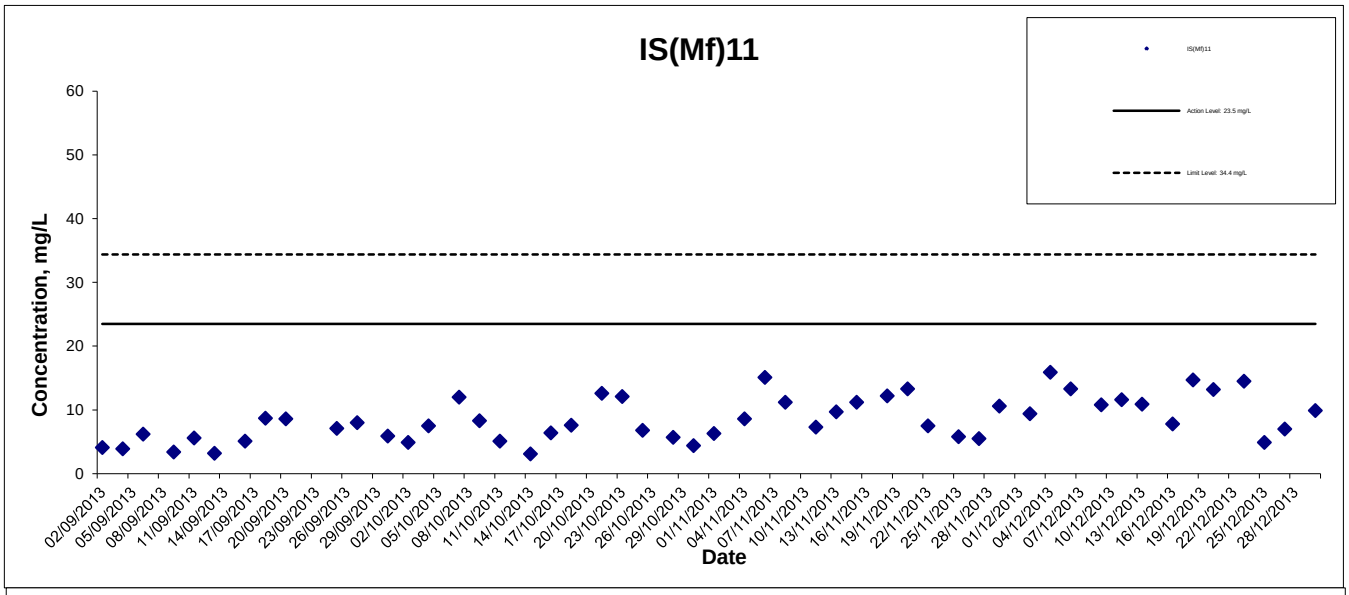
Suspended Solids at Mid-Flood Tide

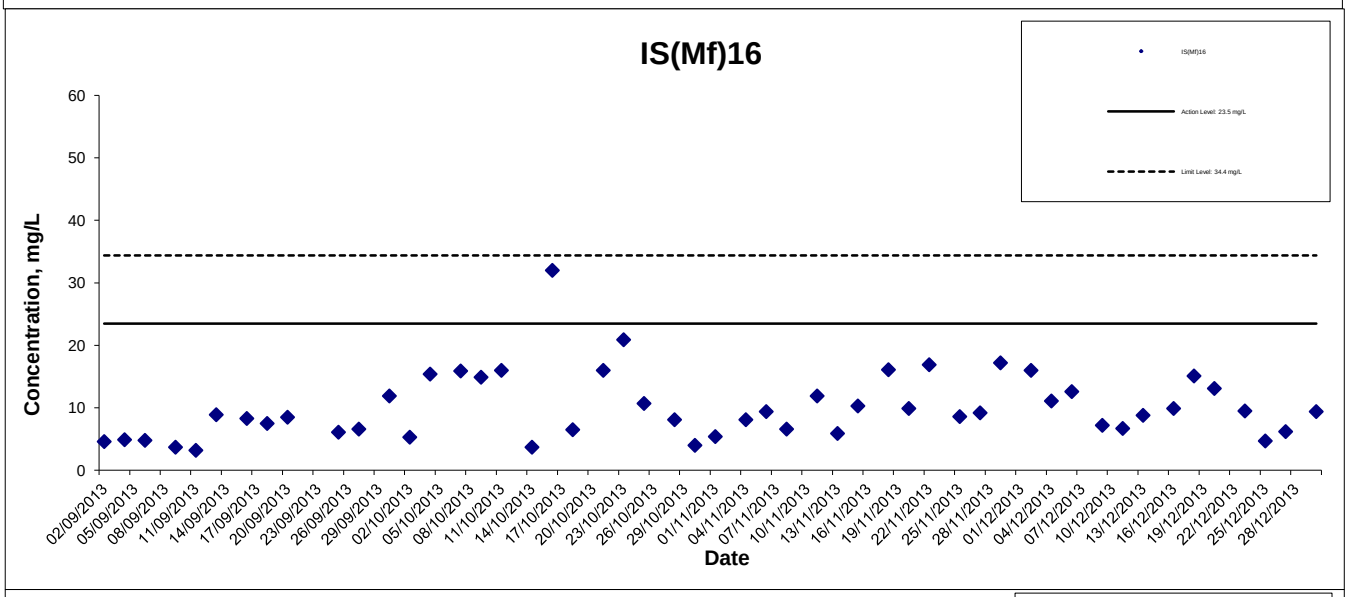


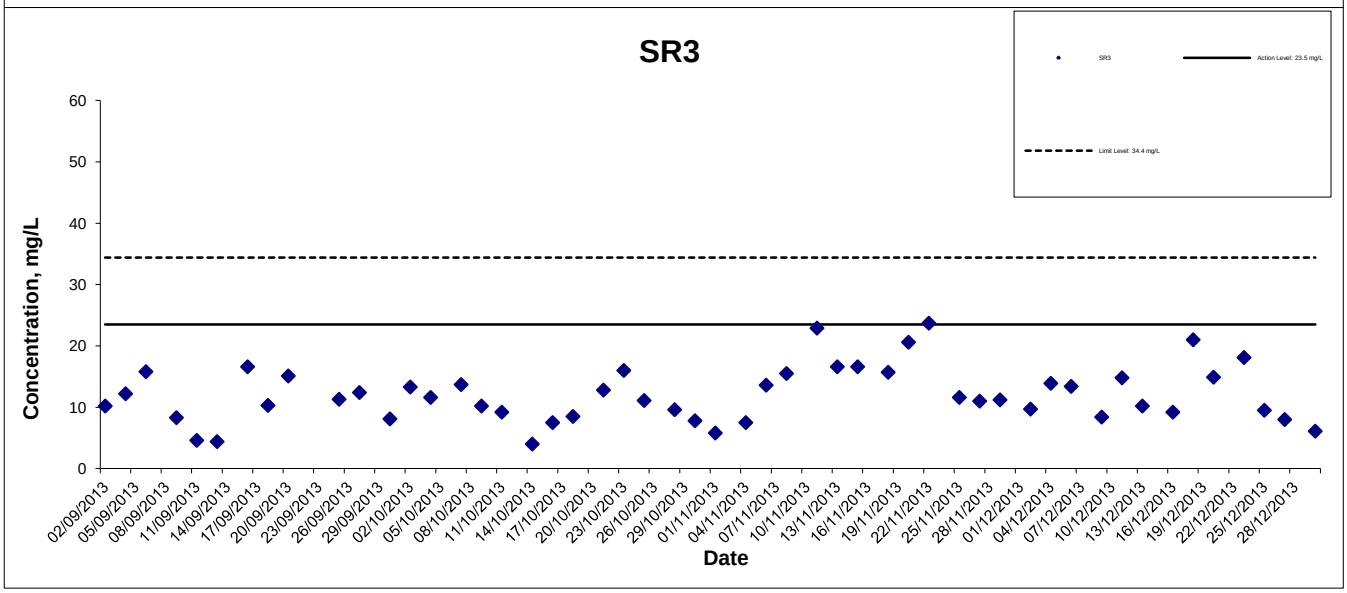




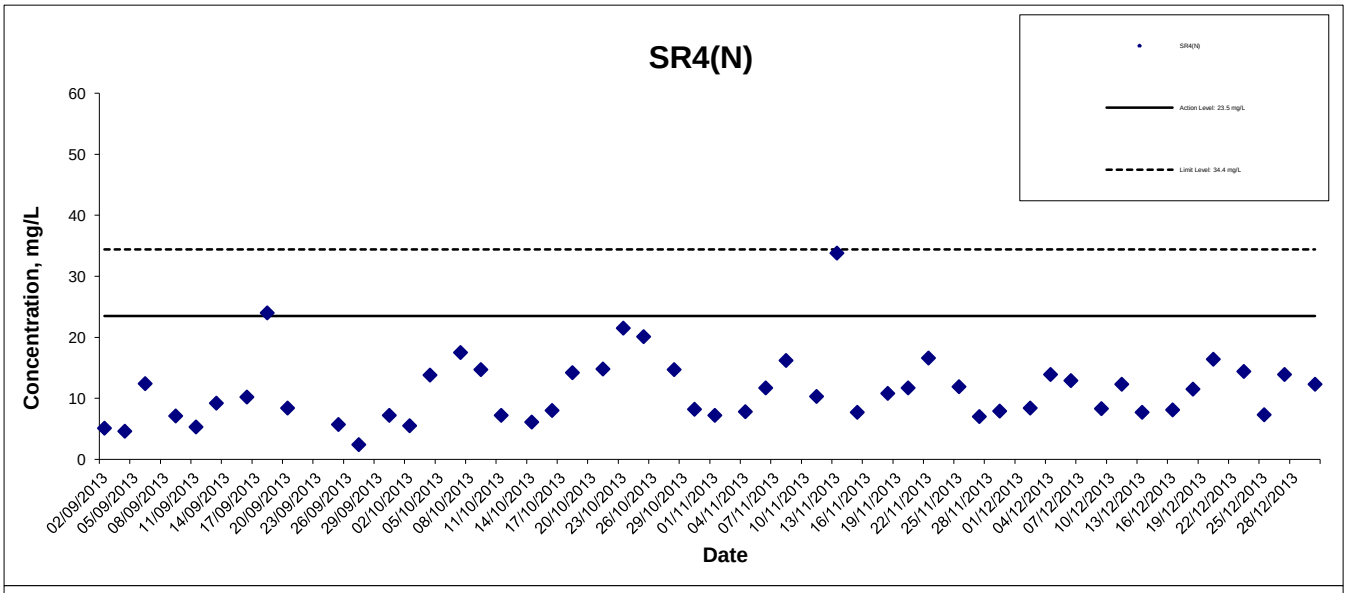
Suspended Solids at Mid-Flood Tide

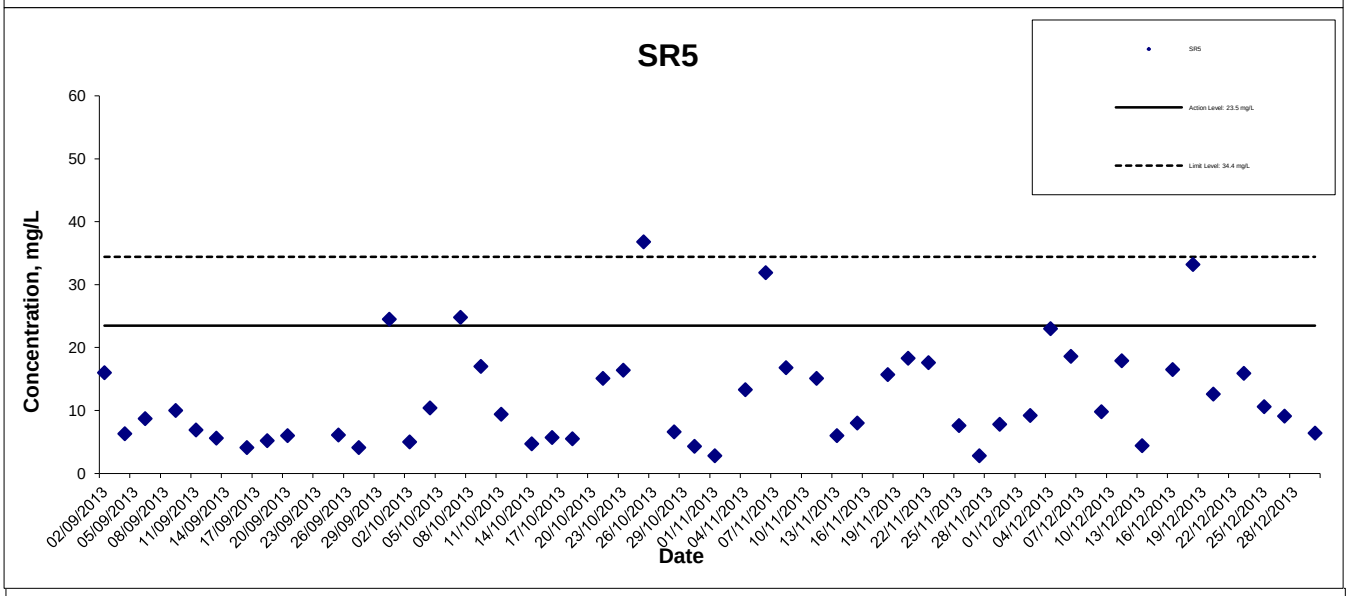


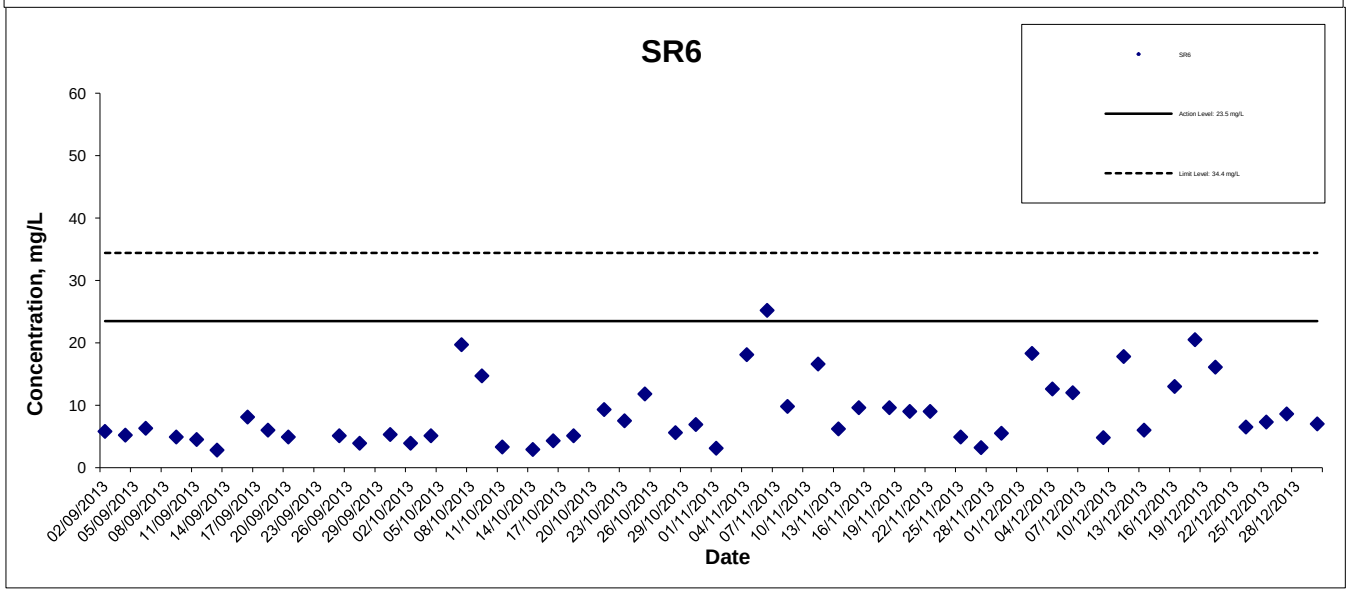




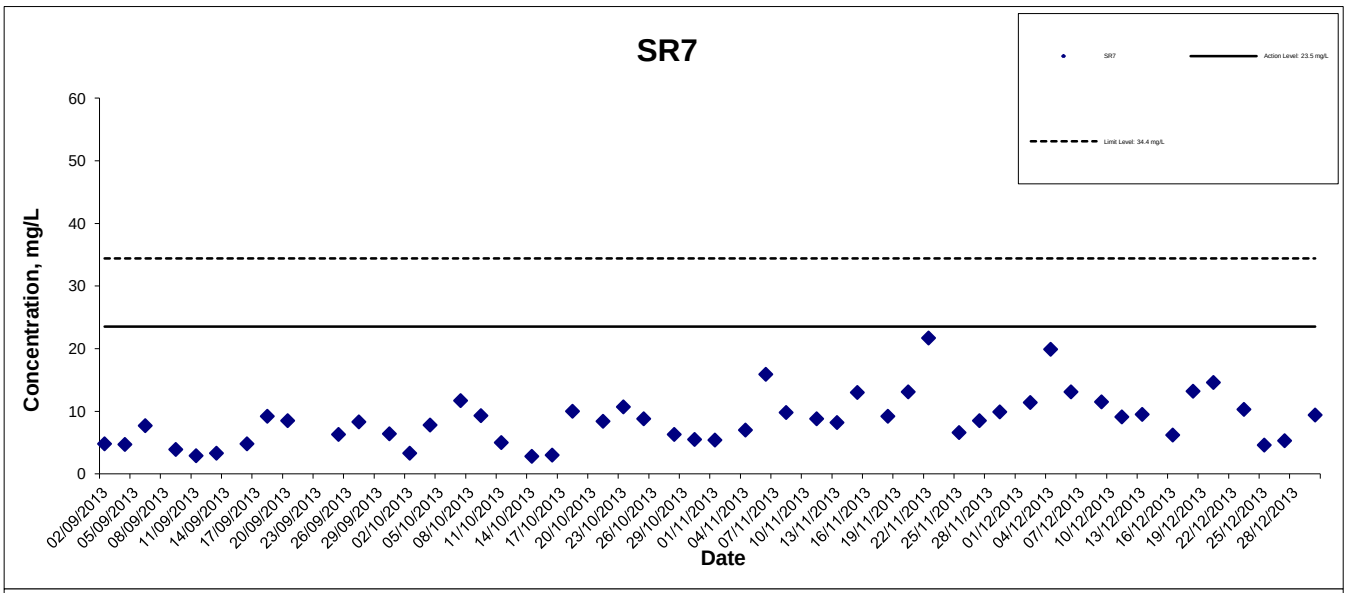
Suspended Solids at Mid-Flood Tide

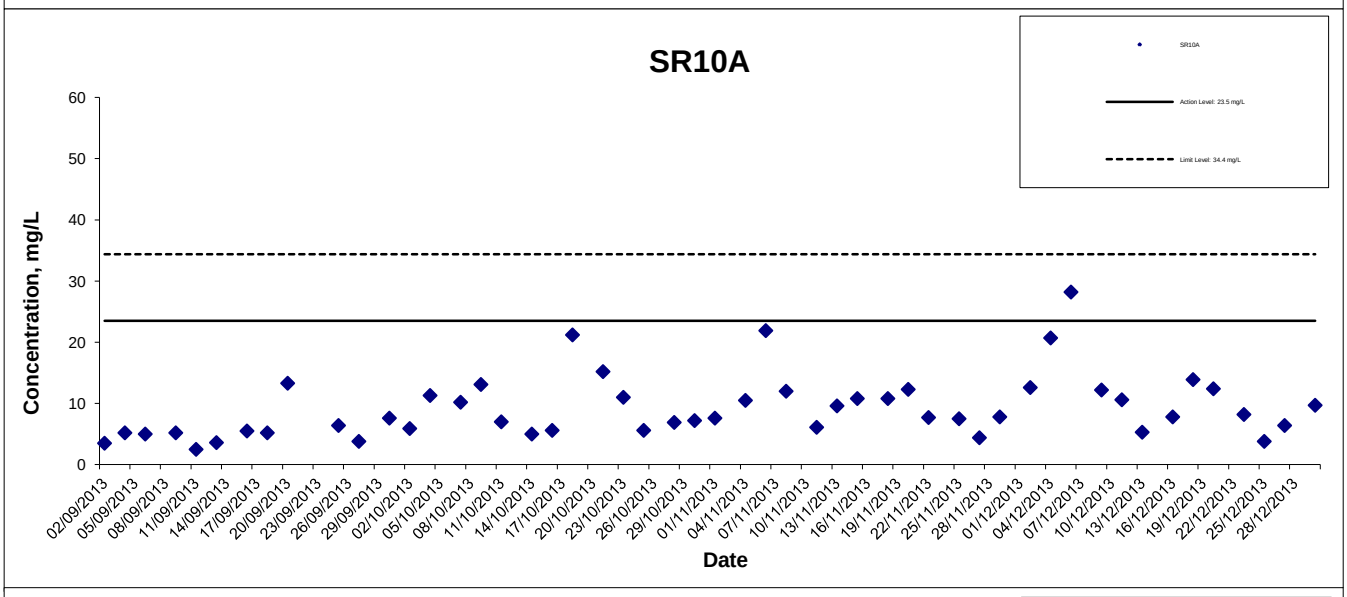


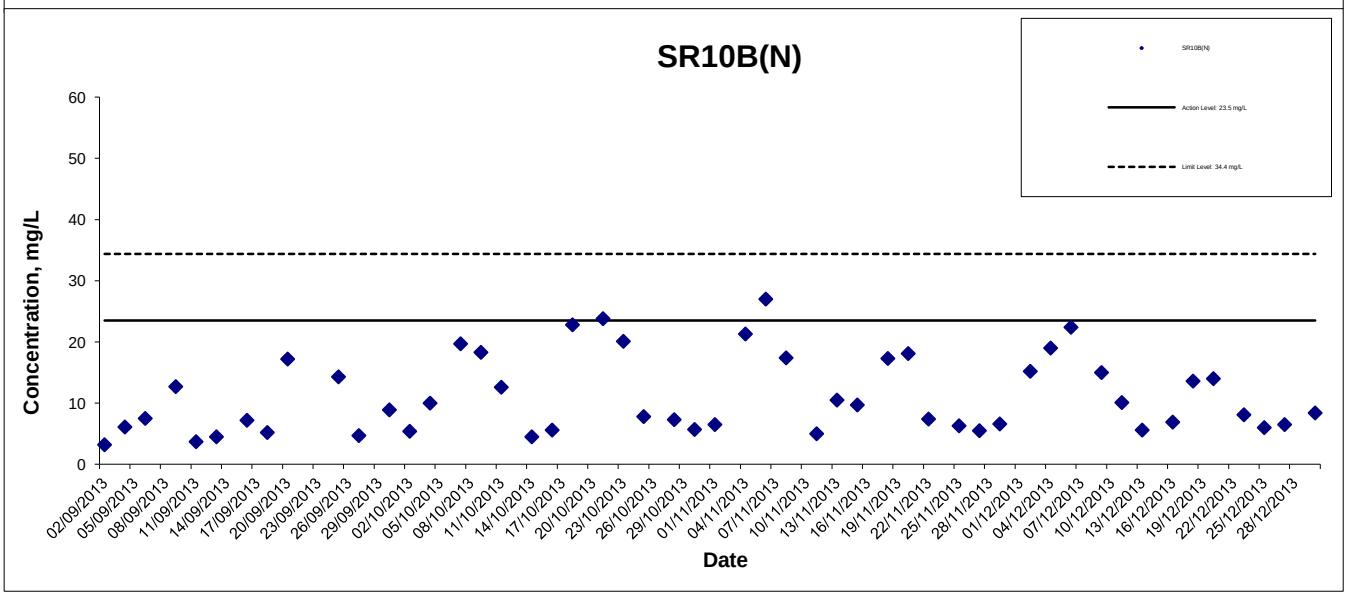




Suspended Solids at Mid-Flood Tide







Appendix K Impact Dolphin Monitoring Survey Sighting Summary

Table 1 Impact Dolphin Monitoring Survey Sighting Table

Project	Contract	Date	Sighting No.	Time	Group Size	Area	Beaufort	PSD	Effort	Type	Northing	Easting	Season	Boat Association
HKBCF	HY/2010/02	19/12/2013	863	12:02	5	NWL	2	NA	Opp	Impact	823705	806059	Winter	No
HKBCF	HY/2010/02	19/12/2013	864	12:34	4	NWL	2	105	On	Impact	824214	806554	Winter	No
HKBCF	HY/2010/02	19/12/2013	865	13:03	4	NWL	2	20	On	Impact	826654	806508	Winter	No
HKBCF	HY/2010/02	19/12/2013	866	13:29	8	NWL	2	73	On	Impact	829253	806379	Winter	No
HKBCF	HY/2010/02	19/12/2013	867	14:44	5	NWL	3	662	On	Impact	821779	808528	Winter	No
HKBCF	HY/2010/02	26/12/2013	874	9:47	3	NWL	2	394	On	Impact	822716	804656	Winter	No
HKBCF	HY/2010/02	26/12/2013	875	10:13	2	NWL	2	NA	Opp	Impact	823719	805153	Winter	No
HKBCF	HY/2010/02	26/12/2013	876	10:28	5	NWL	2	299	On	Impact	825565	804672	Winter	No
HKBCF	HY/2010/02	26/12/2013	878	11:02	6	NWL	2	30	On	Impact	825761	804508	Winter	No
HKBCF	HY/2010/02	26/12/2013	879	13:44	8	NWL	2	161	On	Impact	826474	806446	Winter	No
HKBCF	HY/2010/02	26/12/2013	880	14:21	1	NWL	2	151	On	Impact	826760	806477	Winter	No
HKBCF	HY/2010/02	28/12/2013	882	10:44	5	NWL	3	332	On	Impact	827271	808486	Winter	No
HKBCF	HY/2010/02	28/12/2013	883	11:03	3	NWL	3	NA	Opp	Impact	827273	807703	Winter	No
HKBCF	HY/2010/02	28/12/2013	884	11:30	2	NWL	2	NA	Opp	Impact	827316	806962	Winter	No

KEY:

Sighting	Opp Opportunistic On On effort		
PSD	Perpendicular Sighting Distance	NEL	North East Lantau
Group Size	Represents best estimate for group encountered	NWL	North West Lantau

December 2013
Photo Identification Information

*Photo ID analyses for survey conducted in December 2013 is underway (as of 13 January 2014) and will be presented in the monthly EM&A Report for January 2014.

Table 2 Sightings of Individually Identified Chinese White Dolphin (*Sousa chinensis*) between March 2012 – November 2013

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 114		2013-10-24	827	NWL
HZMB 113		2013-10-24	827	NWL
HZMB 112		2013-10-15	815	NWL
HZMB111		2013-10-15	815	NWL
HZMB 110		2013-10-15	812	NWL
HZMB 108		2013-08-30	780	NEL
HZMB 107		2013-08-21	770	NWL
HZMB 106		2013-08-21	769	NWL
HZMB 105		2013-07-08	711	NWL
HZMB 104		2013-07-08	711	NWL
HZMB 103		2013-07-08	711	NWL
HZMB 102		2013-07-08	706	NWL
HZMB 101		2013-07-08	706	NWL
HZMB 100		2013-07-08	706	NWL
HZMB 099		2013-06-13	681	NWL
		2013-06-13	680	NWL
HZMB 098	NL104	2013-11-02	849	NWL
		2013-11-02	845	NWL
		2013-10-24	831	NWL
		2013-07-08	711	NWL
		2013-05-24	659	NWL
HZMB 097		2013-05-09	647	NWL
HZMB 096		2013-04-01	621	NWL
HZMB 095		2013-08-30	780	NEL
		2013-06-25	697	NWL

		2013-06-13	682	NWL
		2013-04-01	621	NWL
HZMB 094		2013-06-26	703	NWL
		2013-06-25	698	NWL
		2013-03-18	601	NWL
HZMB 093		2013-05-24	657	NWL
		2013-02-21	587	NWL
HZMB 092		2013-02-21	589	NWL
		2013-02-15	581	NWL
HZMB 091		2013-02-15	579	NWL
HZMB 090		2013-06-25	697	NWL
		2013-06-13	682	NWL
		2013-02-15	579	NWL
HZMB 089		2013-02-15	579	NWL
HZMB 088		2013-02-15	579	NWL
HZMB 087		2013-02-15	579	NWL
HZMB 086	NL242	2013-05-09	642	NWL
		2013-02-15	579	NWL
		2011-10-10	Baseline	NWL
HZMB 085		2013-06-26	703	NWL
		2013-02-15	579	NWL
HZMB 084		2013-02-14	575	NWL
HZMB 083	NL136	2013-03-28	607	NWL
		2013-02-15	579	NWL
		2013-01-28	568	NWL
		2012-01-28	564	NWL
HZMB 082		2013-02-21	587	NWL
		2013-02-15	579	NWL
		2013-01-28	563	NWL

HZMB 081		2013-01-28	559	NWL
		2013-01-28	557	NWL
HZMB 080		2013-01-28	556	NWL
HZMB 079		2013-01-28	556	NWL
HZMB 078		2013-02-15	579	NWL
		2013-01-08	552	NWL
HZMB 077		2013-07-08	706	NWL
		2012-12-11	541	NWL
HZMB 076		2013-07-08	706	NWL
		2012-12-11	541	NWL
HZMB 075		2012-12-06	525	NEL
HZMB 074		2013-05-09	647	NWL
		2013-04-01	623	NWL
		2013-04-01	621	NWL
		2013-02-21	594	NEL
		2012-12-10	529	NEL
		2012-12-06	525	NEL
HZMB 073		2013-05-09	647	NWL
		2013-04-01	623	NWL
		2013-04-01	621	NWL
		2013-02-21	594	NEL
		2012-12-10	529	NEL
		2012-12-06	525	NEL
HZMB 072		2012-10-24	476	NWL
HZMB 071		2012-10-24	475	NWL
		2012-10-12	466	NWL
HZMB 070		2012-10-24	476	NWL
HZMB 069		2013-08-21	774	NWL
		2013-07-08	711	NWL

		2012-10-24	476	NWL
HZMB 068		2013-11-01	839	NWL
		2012-10-24	476	NWL
HZMB 067		2012-10-24	475	NWL
HZMB 066	NL93	2013-01-28	559	NWL
		2012-12-11	537	NWL
		2012-10-24	475	NWL
		2012-10-12	466	NWL
HZMB 065		2012-10-12	466	NWL
HZMB 064		2013-05-09	647	NWL
		2013-01-28	561	NWL
		2012-10-24	475	NWL
		2012-10-12	466	NWL
HZMB 063		2013-05-09	647	NWL
		2012-10-12	466	NWL
HZMB 062		2012-12-06	525	NEL
		2012-10-11	457	NWL
HZMB 061		2012-09-18	448	NWL
HZMB 060		2012-09-18	447	NWL
HZMB 059		2013-02-21	591	NWL
		2012-09-18	445	NWL
HZMB 057		2012-09-18	440	NWL
HZMB 056		2012-09-18	442	NWL
		2012-09-05	433	NEL
HZMB 055		2012-09-04	425	NWL
HZMB 054	CH34	2013-11-07	854	NWL
		2013-11-02	845	NWL
		2013-10-24	831	NWL
		2013-08-30	780	NEL

		2013-07-08	711	NWL
		2012-09-05	432	NEL
		2011-11-07	Baseline	NWL
		2011-11-05	Baseline	NWL
		2011-11-02	Baseline	NWL
		2011-11-01	Baseline	NEL
		2011-11-01	Baseline	NEL
		2011-10-28	Baseline	NWL
		2011-10-06	Baseline	NWL
HZMB 053		2012-09-04	425	NWL
HZMB 052		2012-09-04	423	NWL
HZMB 051	NL213	2013-05-09	644	NWL
		2013-04-01	622	NWL
		2013-02-15	582	NWL
		2013-02-15	581	NWL
		2013-01-28	559	NWL
		2013-01-28	556	NWL
		2012-09-04	422	NWL
HZMB 050		2013-02-15	579	NWL
		2012-09-04	421	NWL
HZMB 049		2012-09-03	419	NWL
HZMB 048		2012-09-03	419	NWL
HZMB 047		2012-09-03	412	NWL
HZMB 046		2012-09-03	412	NWL
HZMB 045		2013-06-13	682	NWL
		2013-02-15	579	NWL
		2012-11-01	495	NWL
HZMB 044	NL98	2013-11-02	845	NWL
		2013-11-01	842	NWL
		2013-10-15	819	NWL

		2013-05-09	648	NWL
		2013-05-09	647	NWL
		2013-04-01	623	NWL
		2013-04-01	621	NWL
		2013-02-15	579	NWL
		2012-11-01	495	NWL
HZMB 043		2012-09-03	407	NWL
HZMB 042	NL260	2012-11-01	495	NWL
		2011-11-07	Baseline	NWL
HZMB 041	NL24	2013-11-02	845	NWL
		2013-05-09	648	NWL
		2013-05-09	647	NWL
		2013-04-01	623	NWL
		2013-04-01	621	NWL
		2013-02-15	579	NWL
		2012-11-01	495	NWL
		2011-11-06	Baseline	NEL
		2011-11-05	Baseline	NWL
		2011-11-05	Baseline	NWL
		2011-10-10	Baseline	NWL
HZMB 040		2013-10-15	821	NWL
		2013-07-08	714	NWL
		2013-07-08	711	NWL
		2013-02-21	589	NWL
		2012-11-01	493	NWL
HZMB 038		2012-11-01	490	NWL
HZMB 037		2012-11-01	490	NWL
HZMB 036		2012-09-03	407	NWL
		2012-11-01	490	NWL
HZMB 035		2013-02-15	579	NWL
		2012-11-01	490	NWL
HZMB 034		2012-11-01	493	NWL
HZMB 028		2013-04-01	625	NWL
		2012-08-06	373	NWL
HZMB 027		2013-02-15	579	NWL

		2013-01-28	568	NWL
		2013-01-28	564	NWL
		2012-06-14	299	NWL
HZMB 026		2013-06-25	697	NWL
		2013-05-09	642	NWL
		2013-01-28	561	NWL
		2012-06-13	295	NEL
HZMB 025		2013-02-22	596	NEL
		2013-02-21	591	NWL
		2012-06-13	295	NEL
HZMB 024		2013-03-18	601	NWL
		2012-06-13	295	NEL
HZMB 023		2013-07-08	715	NWL
		2013-07-08	711	NWL
		2013-04-01	619	NWL
		2013-02-21	589	NWL
		2013-02-15	579	NWL
		2012-07-10	330	NWL
HZMB 022		2013-10-24	827	NWL
		2013-07-08	715	NWL
		2013-07-08	711	NWL
		2013-04-01	619	NWL
		2013-02-21	589	NWL
		2013-02-15	579	NWL
		2012-07-10	330	NWL
HZMB 021	NL37	2012-07-10	330	NWL
		2011-09-16	Baseline	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 020		2012-07-10	330	NWL
HZMB 019		2012-07-10	330	NWL
HZMB 018		2013-05-09	647	NWL
		2013-02-21	594	NEL
		2012-12-10	529	NEL
		2012-07-10	330	NWL
HZMB 017		2012-07-10	330	NWL
HZMB 016		2013-07-08	706	NWL
		2012-12-11	539	NWL
		2012-09-18	446	NWL
		2012-09-04	421	NWL
		2012-07-10	330	NWL
HZMB 015		2012-07-10	330	NEL
HZMB 014	NL176	2012-08-06	373	NWL
		2012-06-13	295	NEL
		2011-11-06	Baseline	NEL
		2011-11-01	Baseline	NEL
		2011-11-01	Baseline	NEL
HZMB 013		2012-05-28	281	NWL
HZMB 012		2012-05-28	281	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 011	EL01	2013-02-22	597	NEL
		2013-02-21	592	NEL
		2013-02-14	572	NEL
		2012-11-06	517	NEL
		2012-09-19	452	NWL
		2012-03-31	261	NEL
		2011-11-02	Baseline	NWL
		2011-11-01	Baseline	NEL
HZMB 009		2012-05-28	281	NWL
HZMB 008		2012-05-28	281	NWL
HZMB 007	NL246	2012-12-10	529	NEL
HZMB 006		2013-02-21	594	NEL
		2012-12-11	539	NWL
		2012-11-01	495	NWL
		2012-03-29	250	NWL
HZMB 005		2013-11-09	860	NWL
		2013-11-07	858	NWL
		2013-10-15	813	NWL
		2012-12-10	532	NWL
		2012-08-06	374	NWL
		2012-05-28	287	NWL
HZMB 004		2012-09-04	421	NWL
		2012-03-31	262	NWL
HZMB 003	NL179	2014-10-15	812	NWL
		2013-06-25	697	NWL
		2012-12-10	529	NEL
		2012-03-31	261	NWL

		2011-11-06	Baseline	NEL
		2011-09-16	Baseline	NWL
Identification Number	**Baseline Identification Number**	**Date (YYYY-MM-DD)**	**Sighting Number**	**Area Sighted**
HZMB 002	WL111	2013-11-01	839	NWL
		2013-10-15	819	NWL
		2013-09-24	798	NWL
		2013-02-14	573	NWL
		2012-12-11	536	NWL
		2012-12-11	535	NWL
		2012-10-12	466	NWL
		2012-10-24	475	NWL
		2012-05-28	281	NWL
		2012-03-29	250	NWL
HZMB 001	WL46	2013-08-21	771	NWL
		2013-06-13	681	NWL
		2013-04-01	617	NWL
		2013-02-14	573	NWL
		2012-03-29	250	NWL
	CH98	2011-11-02	Baseline	NWL
	NL11	2011-11-02	Baseline	NWL
		2011-11-07	Baseline	NWL
	NL12	2011-11-02	Baseline	NWL
	NL33	2011-09-23	Baseline	NWL
		2011-11-01	Baseline	NEL
		2011-11-05	Baseline	NWL
		2011-11-07	Baseline	NWL
	NL37	2011-09-16	Baseline	NWL
	NL46	2011-10-28	Baseline	NWL

HZMB 002
2013-11-01_15-41-16 _01

HZMB 005
2013-11-07_16-43-29

HZMB 005
2013-11-09_10-57-56

HZMB 041
2013-11-02_12-30-39 _01

HZMB 044
2013-11-01_17-18-36 _01

HZMB 044F
2013-11-02_12-11-56

HZMB 054
2013-11-02_12-12-43

HZMB 054
2013-11-07_09-50-41 _01

HZMB 068
2013-11-01_16-12-26

HZMB 098
2013-11-02_12-35-50 _01

HZMB 098
2013-11-02_15-36-50 _02

Appendix L – Event Action Plan

Event / Action Plan for Air Quality

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER 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 ER; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER 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. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Limit Level				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, 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 ER 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 ER 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.

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Exceedance for two or more consecutive samples	1. Notify IEC, ER, 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 ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	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; 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.	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 ER until the exceedance is abated.

Event / Action Plan for Construction Noise

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level	1. Notify IEC and Contractor; 2. Identify source, investigate the causes of exceedance and propose remedial measures; 3. Report the results of investigation to the IEC, ER 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 ER 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. Inform IEC, ER, EPD and Contractor; 2. Identify source; 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, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER 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 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.	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 ER until the exceedance is abated.

Event / Action Plan for Water Quality

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action level being exceeded by one sampling day	1. Repeat *in situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor and ER; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Repeat measurement on next day of exceedance to confirm findings.	1. Check monitoring data submitted by ET and Contractor's working methods; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of non-compliance in writing; 2. Discuss with IEC on the proposed mitigation measures; 3. Make agreement on mitigation measures to be implemented; 4. Ensure mitigation measures are properly implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER; 5. Implement the agreed mitigation measures. 6. Amend working methods if appropriate.

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action level being exceeded by two or more consecutive sampling days	1. Repeat *in situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and ER; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Action level; 8. Repeat measurement on next day of exceedance to confirm findings.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of non-compliance in writing; 2. Discuss with IEC on the proposed mitigation measures; 3. Make agreement on mitigation measures to be implemented; 4. Ensure mitigation measures are properly implemented; 5. Assess the effectiveness of the implemented mitigation measures.	1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER within 3 working days of notification; 5. Implement the agreed mitigation measures; 6. Amend working methods if appropriate.

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Limit level being exceeded by one sampling day	1. Repeat *in-situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of failure in writing; 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Request Contractor to critically review the working methods; 4. Ensure mitigation measures are properly implemented; 5. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER; 5. Implement the agreed mitigation measures; 6. Amend working methods if appropriate.

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Limit level being exceeded by two or more consecutive sampling days	1. Repeat *in-situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Request Contractor to critically review the working methods; 4. Make agreement on the mitigation measures to be implemented; 5. Ensure mitigation measures are properly implemented; 6. Assess the effectiveness of the implemented mitigation measures; 7. 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.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Take immediate action to avoid further exceedance; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER; 6. Implement the agreed mitigation measures; 7. Resubmit proposals of mitigation measures if problem still not under control; 8. As directed by the Engineer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.

Event / Action Plan for Dolphin Monitoring

Event	ET Leader	IEC	ER / SOR	Contractor
Action Level	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, ER/SOR and Contractor; 5. Check monitoring data. 6. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and finding with the ET and the Contractor.	1. Discuss monitoring with the IEC and any other measures proposed by the ET; 2. If ER/SOR is satisfied with the proposal of any other measures, ER/SOR to signify the agreement in writing on the measures to be implemented.	1. Inform the ER/SOR and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER/SOR; 3. Implement the agreed measures.
Limit Level	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, ER/SOR and Contractor of findings; 5. Check monitoring data;	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and findings with the ET and the Contractor; 3. Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures. 4. Review proposals for additional monitoring and any other mitigation measures submitted	1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures. 2. If ER/SOR is satisfied with the proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, ER/SOR to signify the agreement in writing on such proposals and any other mitigation measures.	1. Inform the ER/SOR and confirm notification of the non-compliance in writing; 2. Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures. 3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary. 4. Implement the agreed additional dolphin monitoring

	6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary. 7. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, ER/SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or consider to control/temporarily stop relevant construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary.	by ET and Contractor and advise ER/SOR of the results and findings accordingly. 5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise ER/SOR the results and findings accordingly.	3. Supervise the implementation of additional monitoring and/or any other mitigation measures.	and/or any other mitigation measures.

China Harbour Engineering Company Limited

Monthly Summary Waste Flow Table for December / 2013 (year)

Project : Hong Kong – Zhuhai – Macao Bridge, Hong Kong Boundary Crossing Facilities – Reclamation Works Contract No.: HY/2010/02

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste (see Note 4)	Others, e.g. general refuse (see Note 3)
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m^3)
Jan-13	0.0000	0.0000	0.0000	0.0000	0.0000	100.2272	0.0000	0.0000	0.0000	1.4000	0.0325
Feb-13	0.0000	0.0000	0.0000	0.0000	0.0000	49.3183	0.0000	0.0000	0.0000	0.2000	0.0195
Mar-13	0.0000	0.0000	0.0000	0.0000	0.0000	121.1545	0.0000	0.0000	0.0000	2.0000	0.0130
Apr-13	0.0000	0.0000	0.0000	0.0000	0.0000	197.7428	0.0000	0.0000	0.0000	0.0000	0.0260
May-13	0.0000	0.0000	0.0000	0.0000	0.0000	360.3733	0.0000	0.0000	0.0000	1.2000	0.0130
Jun-13	0.0000	0.0000	0.0000	0.0000	0.0000	415.9366	0.0000	0.0000	0.0000	0.0000	0.0130
Sub-total	0.0000	0.0000	0.0000	0.0000	0.0000	1244.7528	0.0000	0.0000	0.0000	4.8000	0.1170
Jul-13	0.0000	0.0000	0.0000	0.0000	0.0000	397.7040	0.0000	0.0000	0.5501	4.0000	0.0260
Aug-13	0.0000	0.0000	0.0000	0.0000	0.0000	447.7517	0.0000	0.0040	0.0000	1.6000	0.0325
Sep-13	0.0000	0.0000	0.0000	0.0000	0.0000	565.0243	0.0140	0.1400	0.0000	1.2000	0.0260
Oct-13	0.0000	0.0000	0.0000	0.0000	0.0000	800.3190	0.0000	0.1960	0.0000	0.0000	0.0325
Nov-13	0.0000	0.0000	0.0000	0.0000	0.0000	797.2930	0.0000	0.1960	0.0000	0.0000	0.0195
Dec-13	0.0000	0.0000	0.0000	0.0000	0.0000	1213.8441	0.0103	0.0000	0.0000	2.0000	0.0260
Total	0.0000	0.0000	0.0000	0.0000	0.0000	5466.6890	0.0243	0.5360	0.5501	13.6000	0.2795

Notes: (1) Broken concrete for recycling into aggregates.

(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.

(3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

(4) Chemical waste refer to spent “battery” and “oil with water”.

Appendix N
Cumulative Statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions

Cumulative statistics on Exceedances

		Total no. recorded in this month	Total no. recorded since project commencement
1-Hour TSP	Action	-	-
	Limit	-	-
24-Hour TSP	Action	-	-
	Limit	-	-
Noise	Action	-	-
	Limit	-	-
Water Quality	Action	1	1
	Limit	1	1
Dolphin Monitoring	Action	-	-
	Limit	-	-

Remarks: Exceedances which are not project-related are not presented in this table.

Cumulative statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. received in this month	Total no. received since project commencement
Environmental complaints	11 Nov 13	As informed by the Contractor, complaint received from Penta-Ocean – Gitanes Joint Venture (CV/2012/03) mentioned that the formation works of the Contaminated Mud Pit CMP1 to the South of the Brothers (CMP1 of SB) which has been completed in mid-August 2013 and the pit has been commissioned for receiving contaminated marine mud from other projects starting from 16	Closed		11

		August 2013. However, it was recently observed that some of the project vessels of HY/2010/02 (photos taken on 20 Nov 2013 are attached) had berthed within the said pit and those anchorages would likely cause disruption to the underlying contaminated mud and thus induce unfavourable contamination impact to the surrounding marine environment. In this regard, they reminded the contractor to avoid berthing of their vessels within the boundary of CMP1 of SB thereafter for the sake of environmental concern. After investigation, the complaint was considered as non-project related			
	12 Nov 13	As informed by the Contractor on 5 Dec13, one complaint was noted on 12 Nov regarding a barge moving through the southern channel. After investigation, the noise complaint was considered as non-project related	Closed		12
	12 Dec 13	As informed by the Contractor on 12 Dec 13. A complaint involves the leakage of sand from barges causing water discoloration at sea near Tuen Mun Pierhead Garden and sand material without properly covered was blown to the inside of the residential area which caused disturbance to residence. With refer to available information provided and monitoring data recorded on 09	Closed	1	13

		Dec 13, it cannot indicate that the water quality impact and air quality impact were caused by the vessel of this Contract and therefore the complaint could not be concluded as related to this Contract.			
	27 Dec 13	As informed by the Contractor on 27 Dec 13. A complaint involves barges loaded with sand material without properly covered was blown to the inside of the residential area of Tuen Mun Pierhead Garden which caused disturbance to residence. With refer to available information provided, it cannot indicate that the water quality impact and air quality impact were caused by the vessel of this Contract and therefore the complaint could not be concluded as related to this Contract.	Closed	2	14
Notification of summons	-	-	-	-	1
Successful Prosecutions					1