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 August 2014

[09/2014]

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Ref.: HYDHZMBEEM00_0_2233L.14 15 September 2014

Engineer's Representative
Ove Arup & Partners
Chief Resident Engineer's Office
5 Ying Hei Road, Tung Chung, Lantau
Hong Kong

By Fax (3698 5999) and By Post

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 August 2014

Reference is made to the Environmental Team's submission of the Monthly Environmental Monitoring & Audit Report for August 2014 (letter ref: 60249820/C/RMKY14091501 dated 15 September 2014) copied to us by E-mail on 15 September 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/B (for TM-CLKL Southern Landfall Reclamation only).

ET is reminded to ensure all information reported are true, valid and correct before sending to this office for review.

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 28 January 2014 (EP-354/2009/B) (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 August 2014. 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
- Rock filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Surcharge laying
- Capping Beams structures
- Construction of temporary jetties for surcharge laying
- Temporary Watermain construction along access at Portion D
- Flat barge of unloading public fill for surcharge laying
- Precast Yard Setup

Land-based Works

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- 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 and 24-hour TSP results were below the Action and Limit Level in the reporting month.

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

During Mid-ebb tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5 mid-ebb tide; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 exceeded the Action Level. During mid-flood tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7 during mid-flood tide; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 during mid-flood tide exceeded the Action Level. After investigation, it is unlikely that the DO exceedances are related the marine construction activities of this Contract.

Impact Dolphin Monitoring

A total of eight sightings were made, four “opportunistic” and four “on effort”. Five sightings were made on the 4th of August in NWL and three sightings were made on 25th August in NWL. A total of twenty-five 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 eight sightings, three groups were feeding, two group was travelling, one group was resting (categorized ad “Other”) and two groups were engaged in multiple activities, both of which comprised feeding and surface active behaviours. The locations of sighting with different behaviour are mapped in Figure 5d.

One calf was seen in August 2014; its mother was not identified. The location of sighting with calf is mapped in Figure 5e.

One limit level exceedance for dolphin monitoring for the quarterly monitoring period (June – August 2014) has been recorded. Investigation report will be provided in the quarterly report (June – August 2014).

Complaint, Notification of Summons and Successful Prosecution

One environmental complaint has been received in August 2014.

As informed by the Contractor on 22 Aug 2014, EPD referred a complainant to this Contract on 21 August 2014, the complainant raised concern about uncovered sand barges at the sea area outside Melody Garden, Tuen Mun, sand were brought to inside of houses by wind and also causing the vicinity to be covered with sand and dust. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

No notification of summons or 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.
- Control night-time lighting and glare by hooding all lights.
- Regular review and provide maintenance to dust control measures such as sprinkler system.

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) and January 2014 (EP-354/2009/B).

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 28 January 2014 (EP-354/2009/B) (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 thirtieth 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 August 2014.

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 2888	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
- Rock filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Surcharge laying
- Capping Beams structures
- Construction of temporary jetties for surcharge laying
- Temporary Watermain construction along access at Portion D
- Flat barge of unloading public fill for surcharge laying
- Precast Yard Setup

Land-based Works

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- 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 (AMS3B) 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
AMS3B	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 August 2014 is provided in Appendix F.

2.6.2 Due to electricity failure, the 24-hr TSP monitoring at AMS7 scheduled on 26-27 August 2014 was rescheduled to 27-28 August 2014.

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	81	73 - 87	374	500
AMS3B	81	72 - 87	368	500
AMS7	81	73 - 90	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	28	18 – 50	176	260
AMS3B	39	16 – 72	167	260
AMS7	31	21 – 44	183	260

2.7.2 All 1-Hour TSP and 24Hr TSP results were below the Action and Limit Level in the reporting month.

2.7.3 The event action plan is annexed in Appendix L.

2.7.4 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 (NMS3B) 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
NMS3B	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 NMS3B were free field measurements in the reporting month at NMS3B. 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 August 2014 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	66	66 – 67*	75
NMS3B	64	63 – 65*	70/65^

*+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 August 2014 is provided in Appendix F.

4.6.2 The scheduled water quality monitoring at mid ebb on 13 August 2014 has been cancelled according to the due to adverse weather condition.

4.7 Results and Observations

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

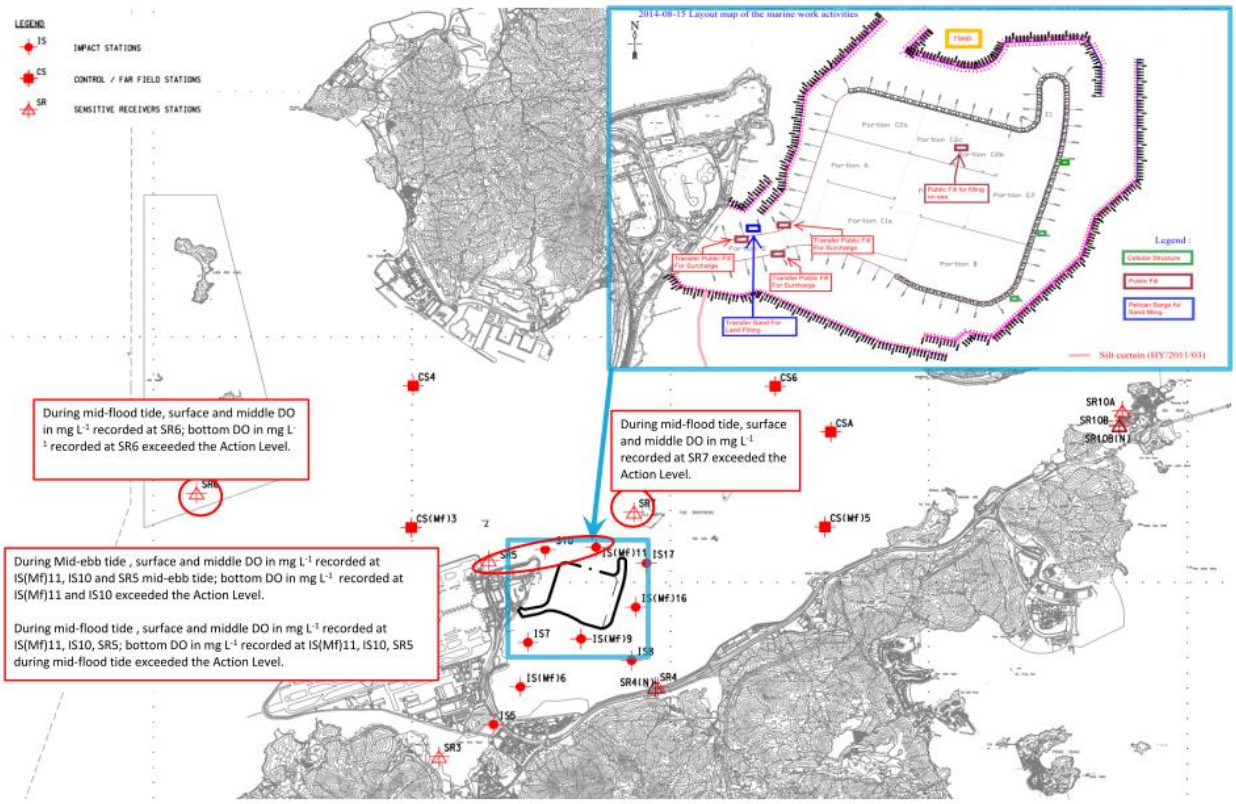
4.7.2 During Mid-ebb tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5 mid-ebb tide; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 exceeded the Action Level. During mid-flood tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7 during mid-flood tide; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 during mid-flood tide exceeded the Action Level. After investigation, the exceedances were unlikely that they are related the marine construction activities of this Contract.

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	0	0	0
IS(Mf)9	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS10	Action	**(1) 15 Aug 14**	**(1) 15 Aug 14**	**(1) 15 Aug 14**	**(1) 15 Aug 14**	0	0	0	0	**2**	**2**
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)11	Action	**(1) 15 Aug 14**	**(1) 15 Aug 14**	**(1) 15 Aug 14**	**(1) 15 Aug 14**	0	0	0	0	**2**	**2**
	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	**(1) 15 Aug 14**	**(1) 15 Aug 14**	0	**(1) 15 Aug 14**	0	0	0	0	**1**	**2**
	Limit	0	0	0	0	0	0	0	0	0	0
SR6	Action	0	**(1) 15 Aug 14**	0	**(1) 15 Aug 14**	0	0	0	0	0	**2**
	Limit	0	0	0	0	0	0	0	0	0	0
SR7	Action	0	**(1) 15 Aug 14**	0	0	0	0	0	0	0	**1**
	Limit	0	0	0	0	0	0	0	0	0	0
SR10A	Action	0	0	0	0	0	0	0	0	0	0
	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**	**3**	**5**	**2**	**4**	0	0	0	0	**14**	
	Limit	0	0	0	0	0	0	0	0	0	

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

4.7.3 During Mid-ebb tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5 mid-ebb tide; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 exceeded the Action Level. During mid-flood tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7 during mid-flood tide; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 during mid-flood tide exceeded the Action Level.



4.7.3.1 For marine works, marine filling was conducted at portion C2b during flood and ebb tide at area behind cellular structures on 15 Aug 2014. Also refer to above layout map.

4.7.3.2 Exceedance was not due to marine based construction works of the Project because:

4.7.3.3 With reference to the silt curtain checking record defects was observed at north parts of the perimeter silt curtain and at southwest entrance of the perimeter silt curtain.

4.7.3.4 As informed by the Contractor, filling was conducted on 13, 15 and 18 August 2014 at Portion C2b, but with referred to monitoring record and photo record attached, no sediment plume has been observed to flow from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain and no discoloration of sea water has been observed. Please refer to the photo attached for reference of the sea condition during ebb tide and flood tide on 15 August 2014.

4.7.3.5 Photo record of sea condition taken during ebb tide at north of HKBCF Reclamation Works near IS(Mf)11, IS10 and SR5 on 15 August 2014.

4.7.3.6 Photo record of sea condition taken during flood tide at north of HKBCF Reclamation Works near IS(Mf)11, IS10 and SR5 on 15 August 2014.

4.7.3.7 Construction activities were reviewed, almost the same marine works were conducted at almost the same location on 13, 15 and 18 August 2014, but no DO exceedance was recorded on 13 and 18 August 2014. This indicates that the DO exceedances were unlikely to attribute to marine works of this Contract.

4.7.3.8 Low DO value was observed at upstream control station during ebb tide. DA DO (surface & middle) were 5.3mg/L and 5.2 mg/L at CS(Mf)3 and CS4 during ebb tide. DO (bottom) were 4.8mg/L and

4.6mg/L at CS(Mf)3 and CSA respectively. This indicates that low DO (Surface & middle; Bottom) occurred at locations upstream to HKBCF Reclamation Works during ebb tide.

4.7.3.9 Low DO value was observed at upstream control station during flood tide. DA DO (surface & middle) were 5.2mg/L, 4.7 mg/L and 4.6 mg/L at CS(Mf)5, CS6 and CSA during ebb tide. DO (bottom) were 5.3mg/L, 4.5 mg/L and 4.1mg/L at CS(Mf)5, CS6 and CSA respectively. This indicates low DO (Surface & middle; Bottom) occurred at locations upstream to HKBCF Reclamation Works during flood tide.

4.7.3.10 After investigation, the Action Level exceedance of the surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5 during Mid-ebb tide; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 during Mid-ebb tide; surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7 during mid-flood tide; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 during mid-flood tide were unlikely to attribute to construction works of this Contract.

4.7.3.11 Action taken under the action plan

- in situ measurement was repeated to confirm findings;
- After considering the above mentioned investigation results, it appears that it was unlikely that the DO exceedances were not attributed to active construction activities of this project;
- Monitoring data, all plant, equipment and Contractor's working methods were checked;
- Since it is considered that the DO exceedances are unlikely to be project related, as such, actions 5 - 7 under the EAP are not considered applicable.

4.7.3.12 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.

4.7.3.13 With reference to the silt curtain checking record on 27 August 2014, the defect observed on 15 August 2014 at north part of the perimeter silt curtain has been repaired. As informed by the Contractor, maintenance work of the silt curtain is on-going and carried out by the Contractor on a daily basis.

4.7.4 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

*****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 August 2014 is provided in Appendix F.

5.6.2 Two surveys covering both study areas were completed.

5.7 Results and Observations

5.7.1 Dolphin surveys were conducted on 4th, 7th, 25th and 26th August 2014. A total of 219.8 km of transect line was conducted under favourable conditions. The total length travelled was also 219.8km, please note that that some lines were shortened due to works and/or shipping traffic.

The effort summary and sightings data are shown in Tables 5.3 and 5.4, respectively. The survey efforts conducted in August 2014 are plotted in Figure 5a-b. 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	04/08/2014	NWL	0	0.8	**49.7**
	04/08/2014	NWL	1	40.1	
	04/08/2014	NWL	2	8.8	
	07/08/2014	NWL	1	1.2	**60.0**
	07/08/2014	NWL	2	22.2	
	07/08/2014	NEL	0	0.3	
	07/08/2014	NEL	1	23	
	07/08/2014	NEL	2	13.3	
2	25/08/2014	NWL	1	38.3	**58.1**
	25/08/2014	NWL	2	19.8	
	26/08/2014	NWL	1	10.1	**52.0**
	26/08/2014	NWL	2	4.8	
	26/08/2014	NEL	1	13.8	
	26/08/2014	NEL	2	19.4	
	26/08/2014	NEL	3	3.9	
TOTAL in August 2014					**219.8**

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

Table 5.4 Impact Dolphin Monitoring Survey Details August 2014

Date	Location	No. Sightings "on effort"	No. Sightings "opportunistic"
04/08/2014	NWL	2	3
	NEL	0	0
07/08/2014	NWL	0	0
	NEL	0	0
25/08/2014	NWL	2	1
	NEL	0	0
26/08/2014	NWL	0	0
	NEL	0	0
TOTAL in August 2014		**4**	**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**
04 & 07/08/2014	36.6 km	73.1 km	0	2	0	2.7
25 & 26/08/2014	37.1 km	73.0 km	0	2	0	2.7
Encounter Rate of Total Number of Dolphins (ANI)**						
Date	**NEL Track**	**NWL Track**	**NEL Dolphins**	**NWL Dolphins**	**NEL Encounter Rate**	**NWL Encounter Rate**
04 & 07/08/2014	36.6 km	73.1 km	0	6	0	8.2
25 & 26/08/2014	37.1 km	73.0 km	0	9	0	12.3

* 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.

5.7.2 A total of eight sightings were made, four “opportunistic” and four “on effort”. Five sightings were made on the 4th of August in NWL and three sightings were made on 25th August in NWL. A total of twenty-five 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.

5.7.3 Behaviour: Of the eight sightings, three groups were feeding, two group was travelling, one group was resting (categorized ad “Other”) and two groups were engaged in multiple activities, both of which comprised feeding and surface active behaviours. The locations of sighting with different behaviour are mapped in Figure 5d.

5.7.4 One calf was seen in August 2014; its mother was not identified. The location of sighting with calf is mapped in Figure 5e.

5.7.5 Photo ID analyses for July 2014 is presented in Appendix K.

5.7.6 There were four re-sightings in July 2014 HZMB 049; 050; 116 and her calf. One new individual was added to the catalogue HZMB 121. HZMB 049 was last sighted in September 2012, however, as this individual was not identified in the baseline survey the usual patterns of occurrence are not known. HZMB 050 has been sighted five times during impact monitoring, always in NWL. The last time HZMB 050 was sighted was January 2014. HZMB 116 was seen twice, on the same day, with her calf. HZMB 116 was last seen in December 2013 when her calf was also present.

5.7.7 Noteworthy Observation[1]:

5.7.7.1 When impact monitoring was conducted at the southern parts of transect lines 1 & 2, the view of the area was partially blocked by the working vessels and fixed structures which do not belong to HKBCF Reclamation Works. The number of fixed structures has increased and the working vessels have moved when compared to last month’s observations. As the working vessels will move during the on-going works, it is considered that they will temporarily affect survey protocol, survey data collection, dolphin movement, dolphin habitat use and dolphin behaviour, whereas the fixed structures will

[1] A noteworthy observation is to show that either the conduct of the surveys themselves is affected, i.e., the noted vessel or works impedes the progress or view of the survey platform. In addition, the vessel or construction works may be different or additional to that observed previously and further, are of such a nature that they are a likely to create an impact on the movement or behaviour of the subject of the impact survey, in this case, the dolphins.

continuously affect survey protocol, survey data collection, dolphin movement, dolphin habitat use and dolphin behaviour.

5.7.7.2 The HKBCF Project effected line 11. The view of the area was partially blocked by the working vessels and in water structures. The number of fixed structures increased and working vessels had moved position when compared to observations made during last month's survey. As the working vessels will move as construction progresses, they will cause temporary effects to survey protocol, survey data collection, dolphin movement, dolphin habitat use and dolphin behaviour, whereas the fixed structures will affect all survey protocols and dolphin ecology in the long term.

5.7.7.3 The northern end of line 9 and 10 was affected by works which do not belongs to the HKBCF Reclamation Works; in particular, the view of the area was partially blocked by the working vessels. The in water structures has increased in size and the working vessels have moved position when compared to observations made during last month's survey. As the working vessels will move during the on-going works, they will temporarily affect survey data collection, dolphin movement, dolphin habitat use and dolphin behaviour. The works here are creating a reclamation/sea wall site which is permanent and will thus continuously affect all survey protocols and dolphin ecology.

5.7.7.4 Anchored vessels affected middle of line 12 on 26 Aug 2014 at 11:19 and southern end of line 12 on 26 Aug 2014 at 12:11, southern end of line 18 on 7 Aug 2014 at 15:25 and northern part of line 22 on 25 Aug 2014 at 14:54. As the vessels will move during throughout the duration of HKBCF impact monitoring, they will temporarily affect survey data collection, dolphin movement, dolphin habitat use and dolphin behaviour.

5.7.7.5 It was observed that lines 11 had been affected by the others construction activities in the vicinity, which are not related to the HKBCF Reclamation Works.

5.7.7.6 The new project is ongoing located at the southern ends of lines 3 and 5. These works partially blocked some of the survey view. As reported last month, there are no fixed structures, however, the moving platform and related vessels move between survey periods. As it is not known what activities these barges and platforms are conducting, the effect that these works may specifically have on dolphins is not known at this time.

5.7.8 The survey effort log notes the areas in which the visibility is limited or the survey is affected so that these can be accounted for in any subsequent analyses. Some of these obstructions will become permanent and some will be temporary as the HZMB is built and other projects progress. It is advised that the impact monitoring surveys should be completed as close to the predefined lines as possible (as per Figure 4 of this report).

5.7.9 The above noteworthy observations are largely a result of multiple and on-going infrastructure projects within the Lantau area. No amendment to EM&A protocols can negate the effects of these projects, e.g., it is a highly dynamic environment and viewing conditions may alter every survey (sometimes within surveys) and most of the survey area is affected, to some degree, by marine construction works. Instead, survey data analyses should incorporate any noteworthy observations which may affect either data collection or dolphin distribution and behavioural changes. The above mentioned activities recorded during boat survey will not affect implementation of the EM&A Programme provided appropriate data analyses are conducted. Given that viewing conditions will change frequently during the construction phase of HZMB, it is inappropriate at this time to implement any changes in EM&A procedures, however, a review of survey conditions will be made from time to time to assess if changes to procedures are required.

5.7.10 One limit level exceedance for dolphin monitoring for the quarterly monitoring period (June – August 2014) has been recorded. Investigation report will be provided in the quarterly report (June – August 2014).

5.7.11 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, 4 site inspections were carried out on 7, 14, 21 and 28 August 2014.

6.1.2 Particular observations during the site inspections are described below:

Air Quality

6.1.3 Filling was observed. The Contractor was reminded to ensure proper implementation of relevant mitigation measures for sand blanket filling or reclamation filling. (Reminder)

Noise

6.1.4 No adverse observation was identified in the reporting month.

Water Quality

6.1.5 It was observed that compressors were not provided with drip tray at Portion A. The Contractor was reminded to provide mitigation measures such as drip tray to compressors at Portion A. The Contractor cleared the compressors. (Closed)

6.1.6 Oil stain has been observed inside the water of one steel cell when inspection conducted between steel cell 53 – 58. Oil stain was cleared by the Contractor using oil absorbent materials and used oil absorbent materials were disposed of as chemical waste. (Closed)

6.1.7 Oil drums were observed without drip tray or bunding on barge GD851 and at area between Portion C1b and Potion A, the Contractor was reminded to provide mitigation measures such as drip tray or bunding to all oil drums. Drip tray or bunding was provided to oil drums on barge GD851 by the Contractor and Oil drum at area between Portion C1b and Potion A was removed by the Contractor. (Closed)

6.1.8 Defect (holes and deformed frame of drip tray) was observed within drip tray at area between Portion C1b and Potion A. The Contractor was reminded to provide proper mitigation measure such as drip tray without defect to oil drum and PMEs. The Contractor rectified large majority of the defects (holes and deformed frame of drip tray) observed within drip tray at area between Portion C1b and Potion A. The Contractor provided proper mitigation measure such as drip tray without defect to PME in September 2014. (Closed)

Chemical and Waste Management

6.1.9 General refuse were observed area near steel cell 48, various locations when inspection was conducted at portion B and Portion D and on water at Portion D. The Contractor was reminded to regularly clear the general refuse to keep the site clean and tidy. The Contractor cleared the general refuse to keep the site clean and tidy. (Closed)

Landscape and Visual Impact

6.1.10 No relevant adverse impact was observed in the reporting month.

Others

6.1.11 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, 1,427,973m^3 of fill were imported for the Project use in the reporting period. 196kg of paper/cardboard packaging and 65m^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/B	28/01/2014	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-RS0871-14	19/08/2014	18/11/2014	CHEC	Reclamation Works in Contract HY/2010/02
NCO	Construction Noise Permit	GW-RE0656-14	30/06/2014	22/12/2014	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.

6.4.6 Frequency of watering per day on exposed soil was checked; with reference to the record provided by the Contract, watering was conducted at least 8 times per day on reclaimed land. The frequency of watering is the mainly refer to water truck. Sprinklers are only served to strengthen dust control measure for busy traffic at the entrance of Portion D. As informed by the Contractor, during the mal-function period of sprinkler, water truck will enhance watering at such area. The Contractor was reminded to ensure provision of watering of at least 8 times per day on all exposed soil within the Project site and associated works areas throughout the construction phase.

6.4.7 Noted from contractor's report during the last Site Safety and Environmental Management Committee meeting on 21 August 2014, a number of sprinklers are missing/ damaged on 31 July 2014. Subsequently, with refer to the site inspection and checking record issued on 6 August 2014, the missing and damaged sprinkler was rectified on 6 August 2014.

6.4.8 Oil spillage observed on 14 and 20 August 2014 at Steel cell 54. Spill Response Plan was followed by the Contractor.

6.4.8.1 Following the spill response plan, ET, IEC and the RSS were informed of the incident by the Contractor and the Contractor used absorption booms to contain and remove the floating oil from water and absorption booms used was collected using disposal bags as part of the spill kits item. The used absorption booms were disposed of as chemical waste.

6.4.8.2 The source of the oil spill was identified on 14 August 2014 as a discrete, non-continuous source with approximately less than $15m^2$ spread. The cause of the oil spill was not identified due to no continuous runoff was observed after inspection.

6.4.8.3 The source of the oil spill was identified on 20 August 2014 as continuous source with approximately less than $15m^2$ spread.

6.4.8.4 The oil spillage identified on 20 August 2014 was caused by overflow of nearby oil container which tightly closed lids to chemical container was not provided to avoid leakage of chemicals and chemical waste. The oil container which caused the oil spillage was rellocated and transferred by the Contractor to designated oil storage area.

6.4.8.5 Similar to the oil stain observed on 20 August 2014, the oil stain on 14 August 2014 was also found at steel cell 54, it was considered that the source of the oil stain observed inside steel cell 54 on 14 and 20 August 2014 are likely to be the same and is likely to be caused by overflow of nearby oil container which without proper cover. On both incidents, the oil stain was confined by steel cell 54.

6.4.8.6 Monitoring record of 15, 18 and 20 August 2014 have been reviewed. There are action level exceedances of DO recorded on 15 August 2014, but they are not considered as related to this contract. For details of the DO exceedances occurred on 15 August 2014, please refer to section 4.7.3. The action level exceedances of DO occurred at area located north to the HKBCF Reclamation Works which is far away from the cell 54 located at southeast of the HKBCF Reclamation Works. It is unlikely that the DO exceedances were associated with the oil spillage occurred at steel cell no.54.

6.4.8.7 In addition, there was no exceedance recorded at monitoring station IS(Mf)16 which is the closest to steel cell 54 which indicates it is unlikely that water quality is affected by the oil spillage occurred at steel cell 54.

6.4.8.8 Site inspection was conducted jointly with the ESS and the RSS on 21 August 2014. No oil spillage was further observed on site.

6.4.8.9 Recommendation:

- The Contractor was reminded to keep chemical and chemical waste containers in good condition and free from corrosion and damage which may impair the performance of the containers.
- The Contractor was reminded to provide tightly closed lids to chemical container so as to avoid leakage of chemicals and chemical waste. In addition, the Contractor was reminded to ensure every chemical and chemical waste containers securely closed or sealed, correctly placed and kept clean.
- The contractor was reminded to continue to follow the spill response plan in the event of accidental oil spillage.

6.5 Summary of Exceedances of the Environmental Quality Performance Limit

6.5.1 All 1-Hour TSP and 24-hour TSP results were below the Action and Limit Level in the reporting month.

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

6.5.3 During Mid-ebb tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5 mid-ebb tide; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 exceeded the Action Level. During mid-flood tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7 during mid-flood tide; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 during mid-flood tide exceeded the Action Level. After investigation, it is unlikely that the DO exceedances are related the marine construction activities of this Contract.

6.5.4 One limit level exceedance for dolphin monitoring for the quarterly monitoring period (June – August 2014) has been recorded. Investigation report will be provided in the quarterly report (June – August 2014).

6.5.5 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 One environmental complaint has been received in August 2014.

6.6.3.1 As informed by the Contractor on 22 Aug 2014, EPD referred a complainant to this Contract on 21 August 2014, the complainant raised concern about uncovered sand barges at the sea area outside Melody Garden, Tuen Mun, sand were brought to inside of houses by wind and also causing the vicinity to be covered with sand and dust.

6.6.3.2 Investigation Actions:

- 1hr TSP and 24hrs TSP monitoring data of August 2014 have been reviewed.
- Site inspections were conducted jointly on 28 August 2014 with RSS and the Contractor.

6.6.3.3 Investigation findings:

- There is no sufficient information provided by the complainant to make sure that the concerned barges are related to this project.
- Date of the observed impact was not specified by the complainant so the impact air quality monitoring (IAQM) results available for August 2014 for monitoring stations close to the concerned area – AQMS1, ASR1, ASR5, ASR6 and ASR10 have been reviewed and there was no impact air quality monitoring result that shows 1-hour TSP or 24-hour TSP exceeded the action (AL)/limit level (LL). [2]

- [2] Reviewed IAQM data and the action (AL)/limit level (LL) is available online respectively at: http://www.hzmbenpo.com/php/list_air_year_All.php,and http://www.hzmbenpo.com/emna_report/tmclkl_hy201208/manual/html/toc.htm

- Photo record below shows that Sand barges are equipped with watering equipments. And watering equipment was used to keep the sand filling material wet.

  - In addition, site inspection has been jointly conducted with the Contractor and RSS on 28 August 2014, but no generation of fugitive dust was observed to be caused by barges loaded with filling material.

6.6.3.4 After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

6.6.3.5 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.

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

6.6.4 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 September 2014 and October 2014 will be*:-

Marine-based Works

- Cellular structure installation
- Connecting arc cell installation
- Laying geo-textile
- Sand blanket laying
- Sand filling
- Rock filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Band drain installation
- Backfill cellular structure
- Geotechnical Instrumentation works
- Surcharge laying
- Capping Beams structures
- Construction of temporary jetties for surcharge laying
- Temporary Watermain construction along access at Portion D
- Flat barge of unloading public fill for surcharge laying
- Precast Yard Setup

Land-based Works

- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Maintenance of Temporary Marine Access at Works Area WA2

*Construction activities in September & October 2014 will be changed subject to works progress.

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.
- Control night-time lighting and glare by hooding all lights.
- Regular review and provide maintenance to dust control measures such as sprinkler system.

7.3 Monitoring Schedule for the Coming Month

7.3.1 The tentative schedule for environmental monitoring in September 2014 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 For impact air quality monitoring, all 1-Hour TSP and 24-hour TSP results were below the Action and Limit Level in the reporting month.

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

8.1.4 During Mid-ebb tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10 and SR5 mid-ebb tide; bottom DO in mg L^{-1} recorded at IS(Mf)11 and IS10 exceeded the Action Level. During mid-flood tide on 15 August 2014, surface and middle DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5, SR6 and SR7 during mid-flood tide; bottom DO in mg L^{-1} recorded at IS(Mf)11, IS10, SR5 and SR6 during mid-flood tide exceeded the Action Level. After investigation, it is unlikely that the DO exceedances are related the marine construction activities of this Contract.

8.1.5 A total of eight sightings were made, four “opportunistic” and four “on effort”. Five sightings were made on the 4th of August in NWL and three sightings were made on 25th August in NWL. A total of twenty-five 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 eight sightings, three groups were feeding, two group was travelling, one group was resting (categorized ad “Other”) and two groups were engaged in multiple activities, both of which comprised feeding and surface active behaviours. The locations of sighting with different behaviour are mapped in Figure 5d.

8.1.7 One calf was seen in August 2014; its mother was not identified. The location of sighting with calf is mapped in Figure 5e.

8.1.8 One limit level exceedance for dolphin monitoring for the quarterly monitoring period (June – August 2014) has been recorded. Investigation report will be provided in the quarterly report (June – August 2014).

8.1.9 Environmental site inspection was carried out 4 times in August 2014. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

8.1.10 One environmental complaint has been received in August 2014. As informed by the Contractor on 22 Aug 2014, EPD referred a complainant to this Contract on 21 August 2014, the complainant raised concern about uncovered sand barges at the sea area outside Melody Garden, Tuen Mun, sand were brought to inside of houses by wind and also causing the vicinity to be covered with sand and dust. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

8.1.11 No notification 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.
- Regular review and provide maintenance to dust control measures such as sprinkler system.

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

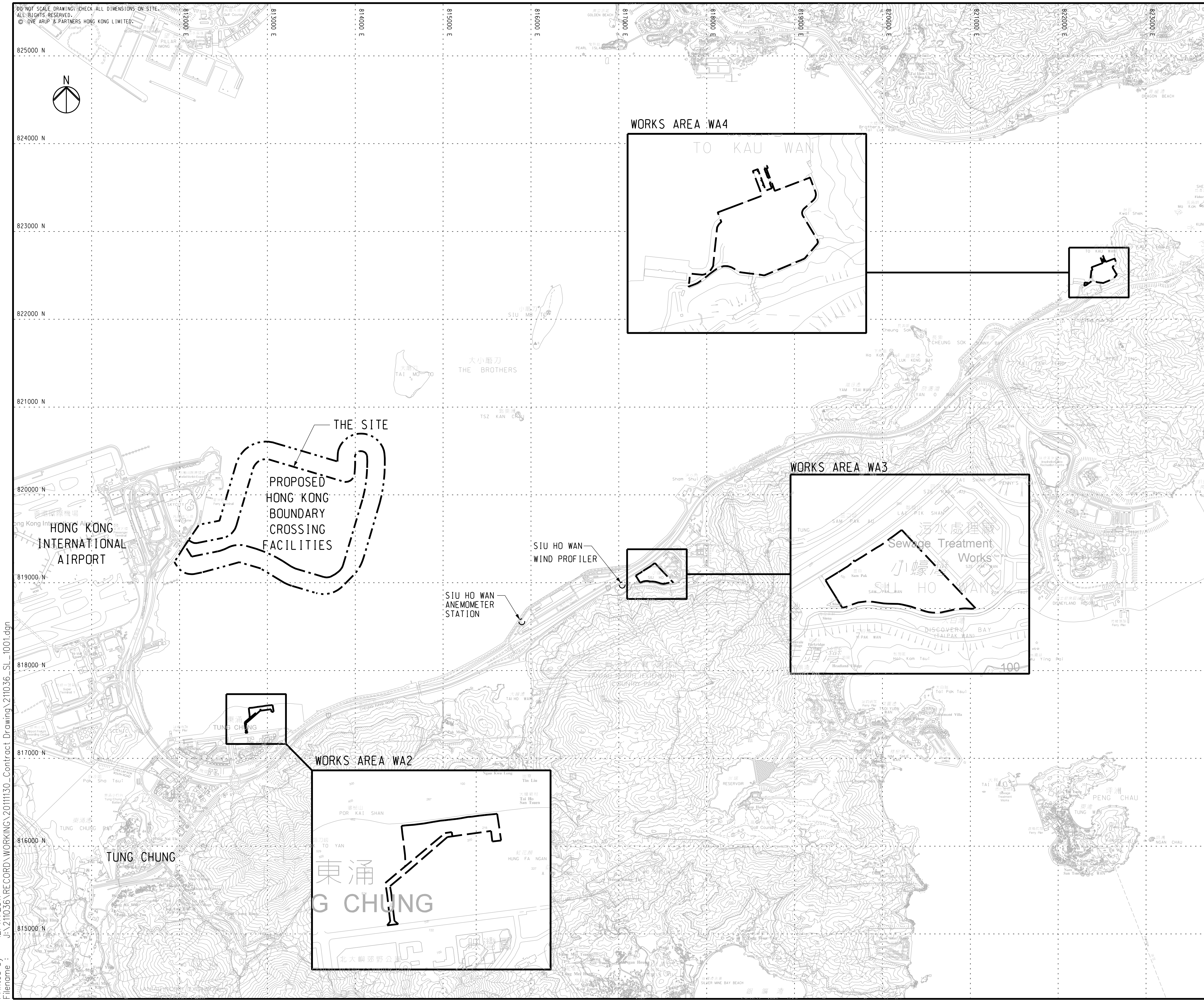
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities in order to make sure they are functioning effectively.
- Construction of seawall should be completed as early as possible.
- Regular inspect and review the loading process from barges to avoid splashing 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.

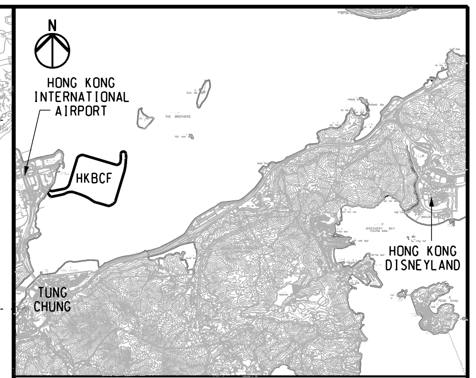
Chemical and Waste Management

- 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.
- Control night-time lighting and glare by hooding all lights.





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

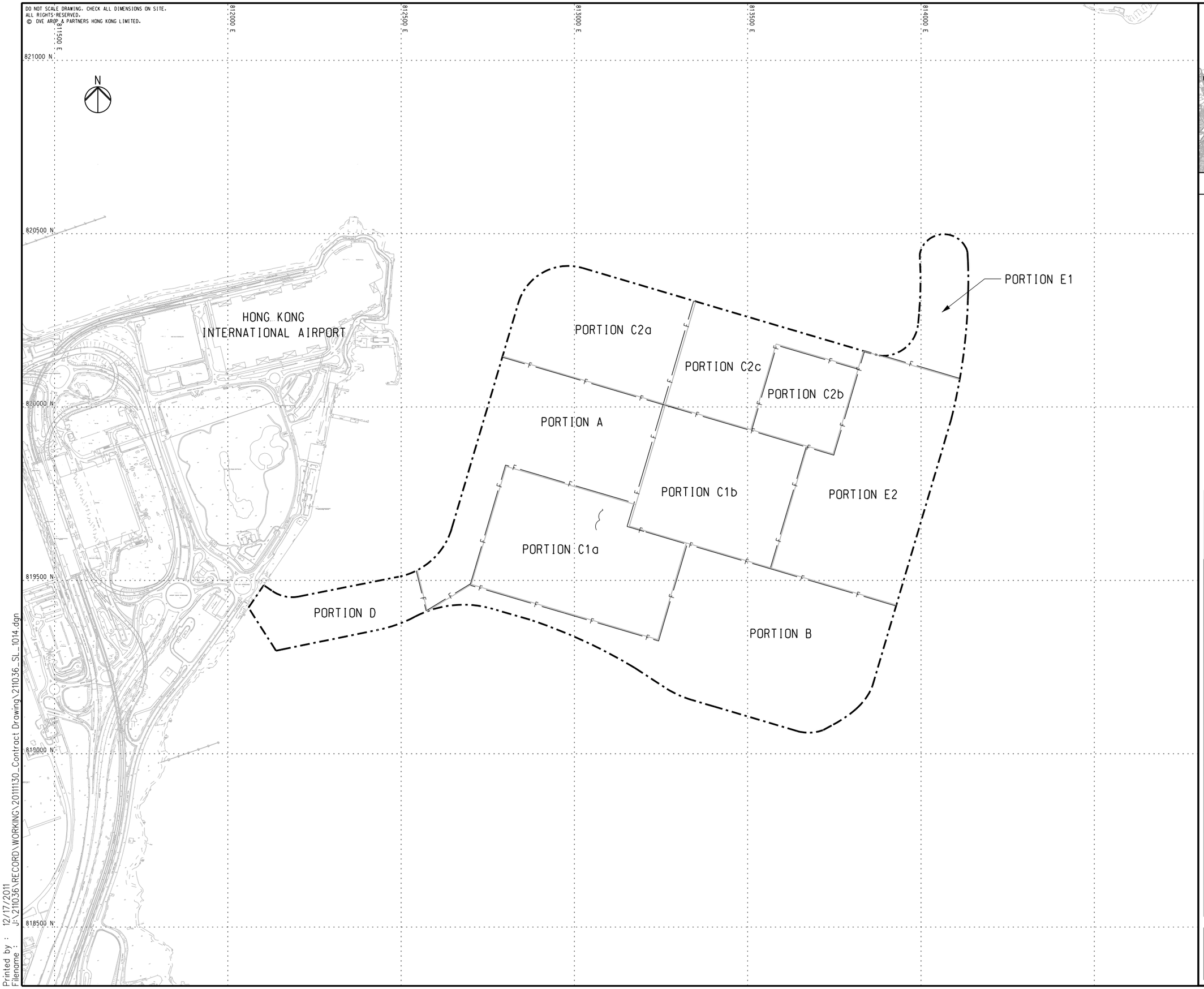
KEY PLAN

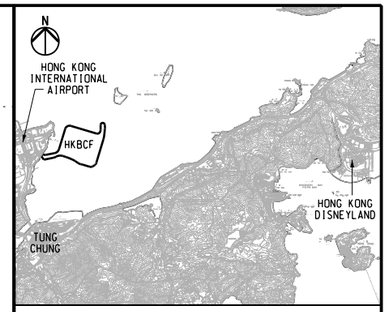
Drawing no.	Rev.
211036/SL/1001	-

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





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.
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- 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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Plot File by: Kwokhc 11/03/2014
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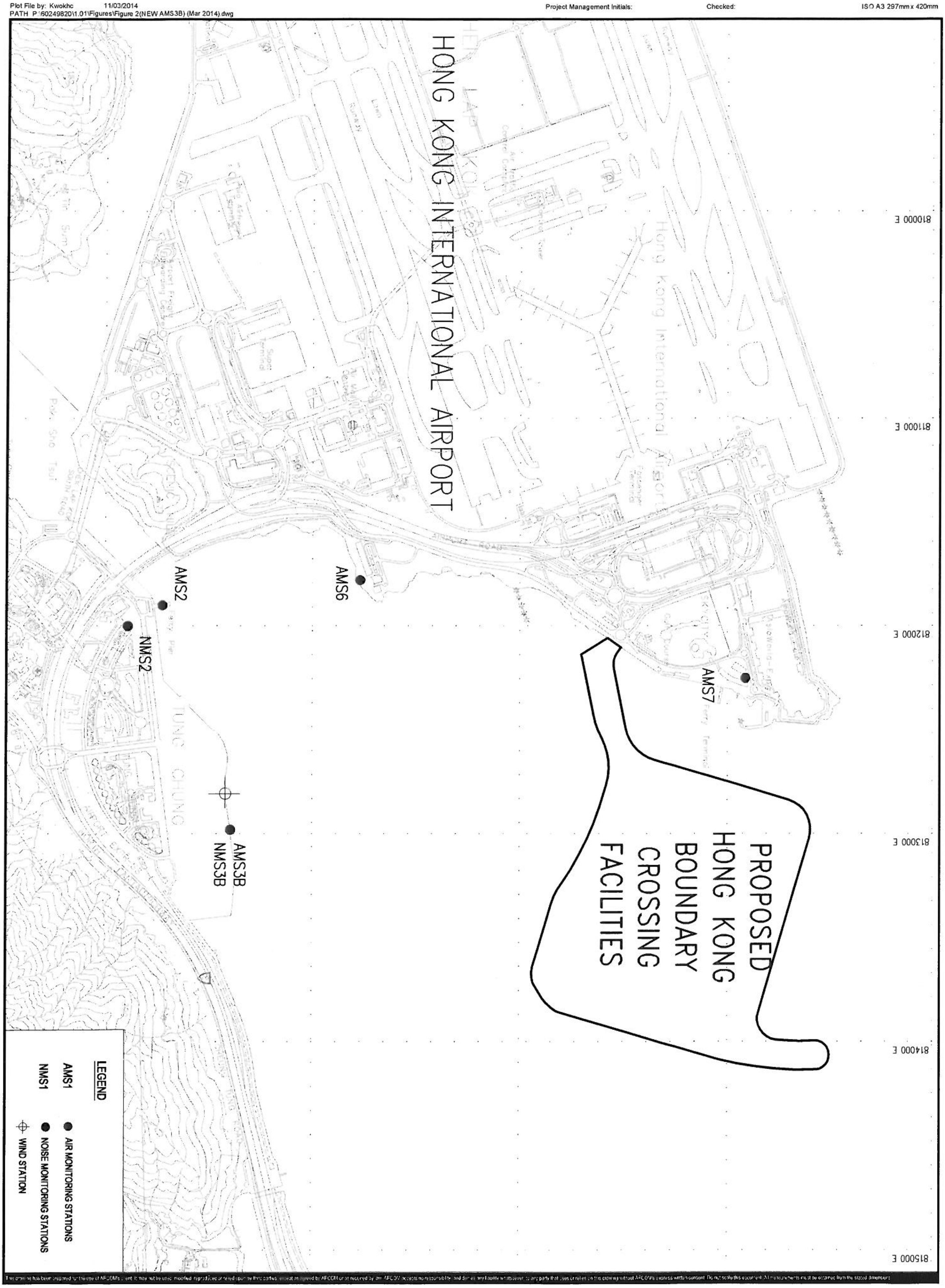

HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS
Project No.: - Date: MARCH 2014

AIR QUALITY AND NOISE MONITORING STATIONS FOR HKBCF

AECOM

Figure 2

Plot File by: Kwwkhc
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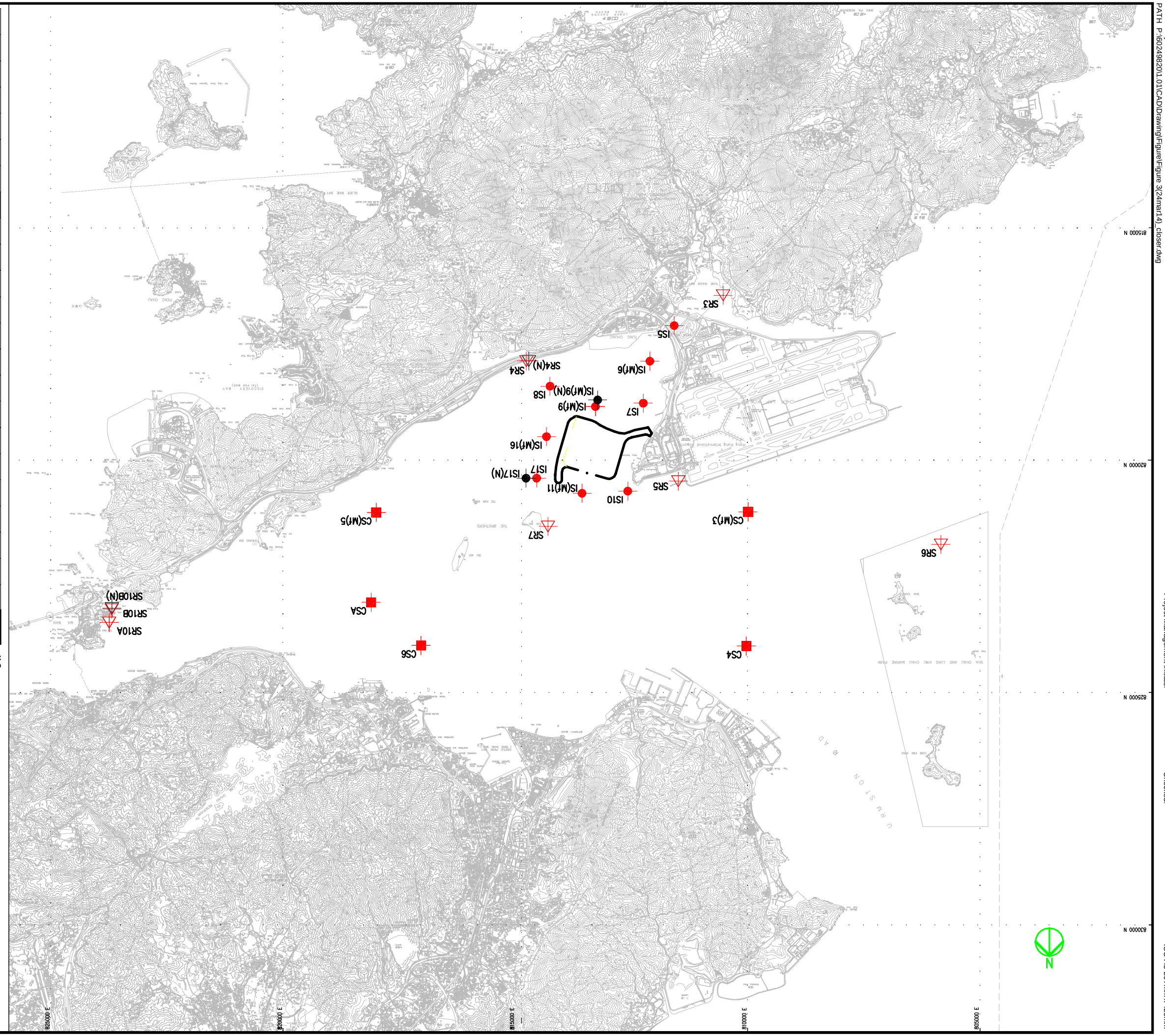
25/03/2014

Project Management Initials:

Checked:

ISO A3 297mm x 420mm



SETTING OUT SCHEDULE

MONITORING STATIONS	CO-ORDINATES	
	EASTING	NORTHING
IS5	811579	817106
IS(M)6	812101	817873
IS7	812244	818777
IS8	814251	818412
IS(M)9	813273	818850
IS(M)9(N)	813226	818708
IS10	812577	820670
IS(M)11	813562	820716
IS(M)16	814328	819497
IS17	814539	820391
IS17(N)	814767	820391
SR3	810525	816456
SR4(N)	814705	817859
SR5	811489	820455
SR6	805837	821818
SR7	814293	821431
SR10A	823741	823495
SR10B(N)	823683	823187
CS(M)3	809989	821117
CS(M)5	817990	821129
CS4	810025	824004
CS6	817028	823992
CSA	818103	823064

LEGEND

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

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

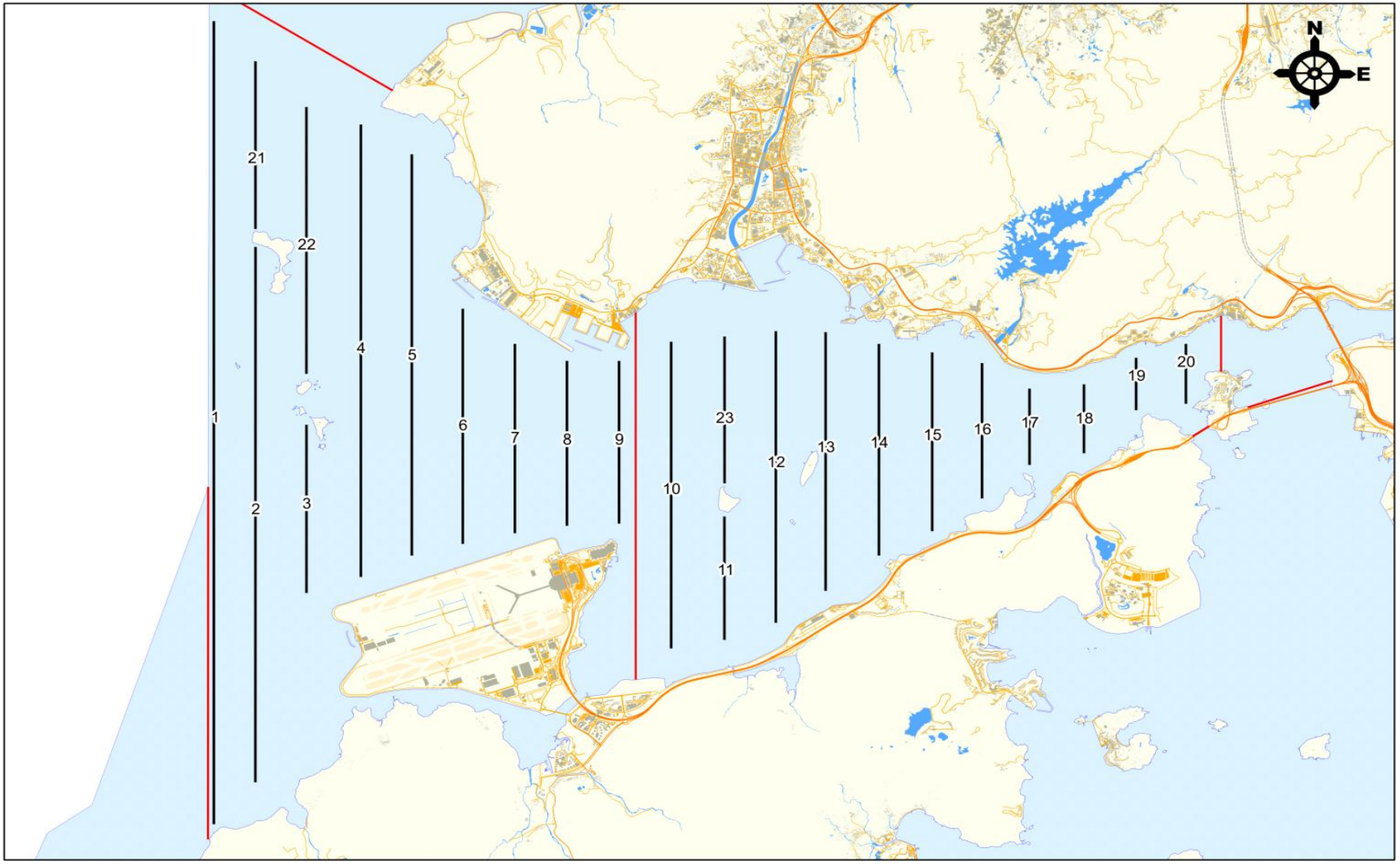
Project No.: -

Date: MAR 2014

WATER QUALITY MONITORING STATION

AECOM

Figure 3



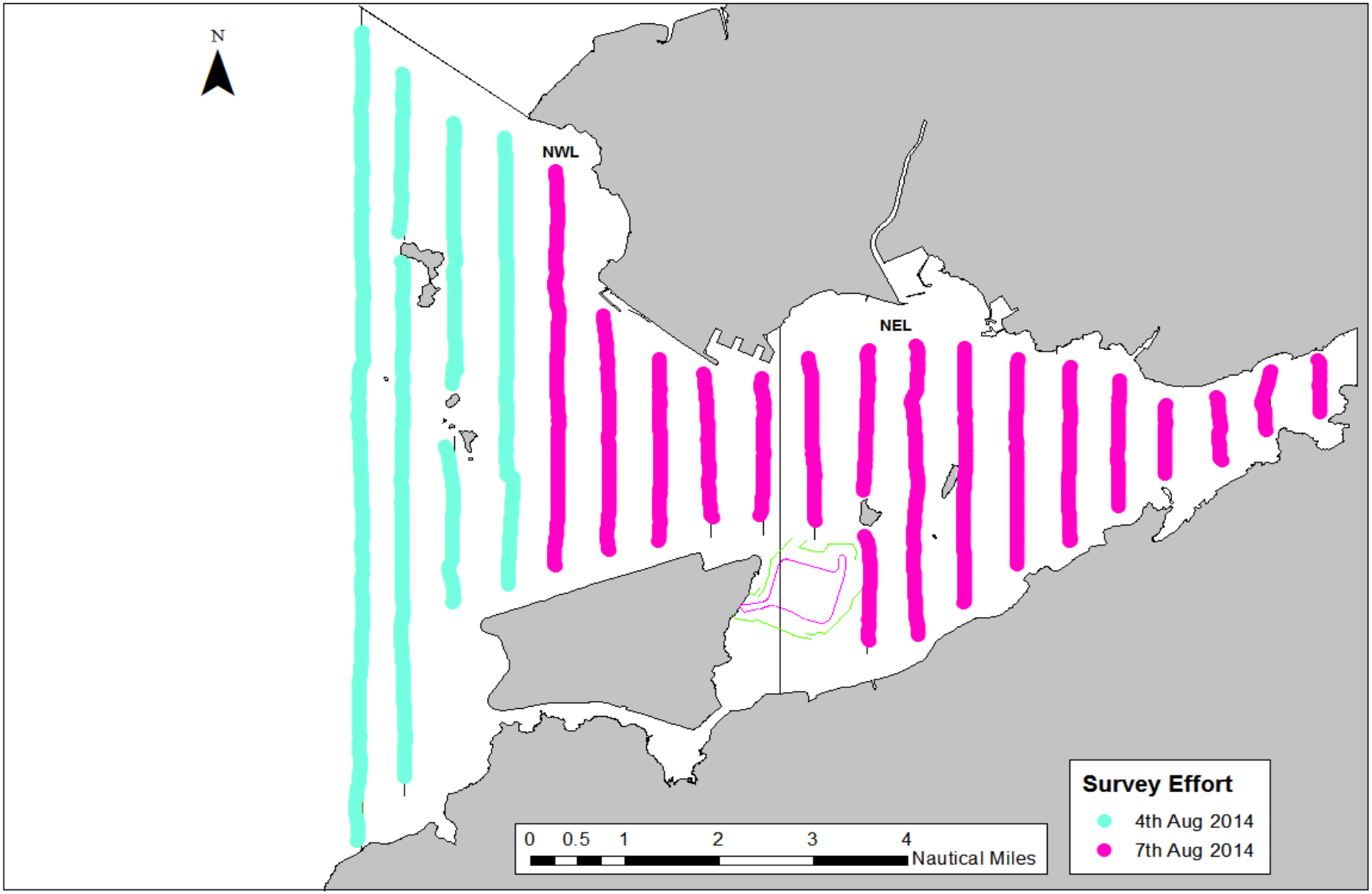
***Remark: Transect 10 is now 3.6km in length due to the HKBCF construction site. The total transect length for both NEL and NWL combined is 111km.**

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

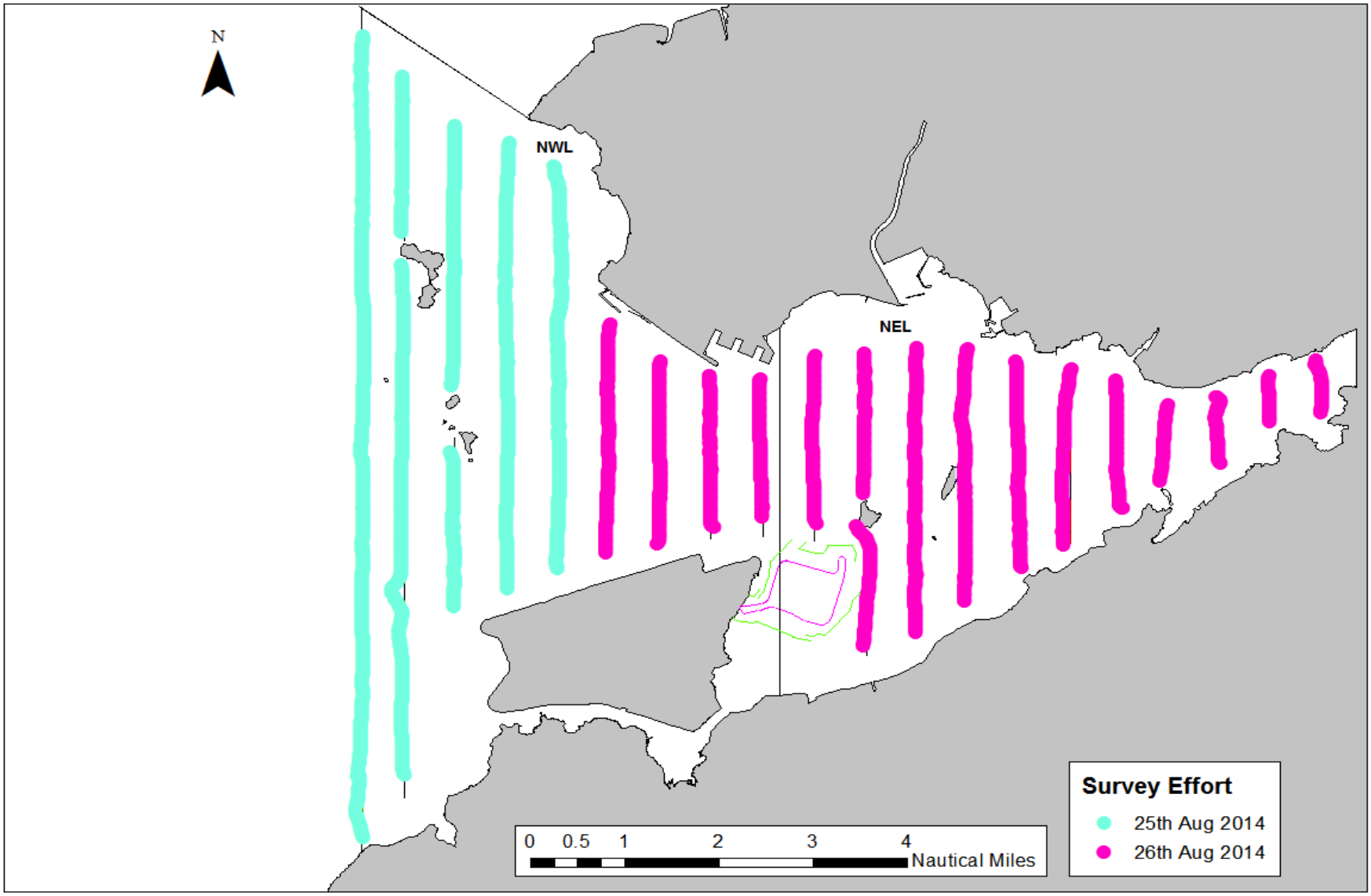
Figure 4



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

Impact Dolphin Monitoring Survey Efforts on 4 and 7 August 2014

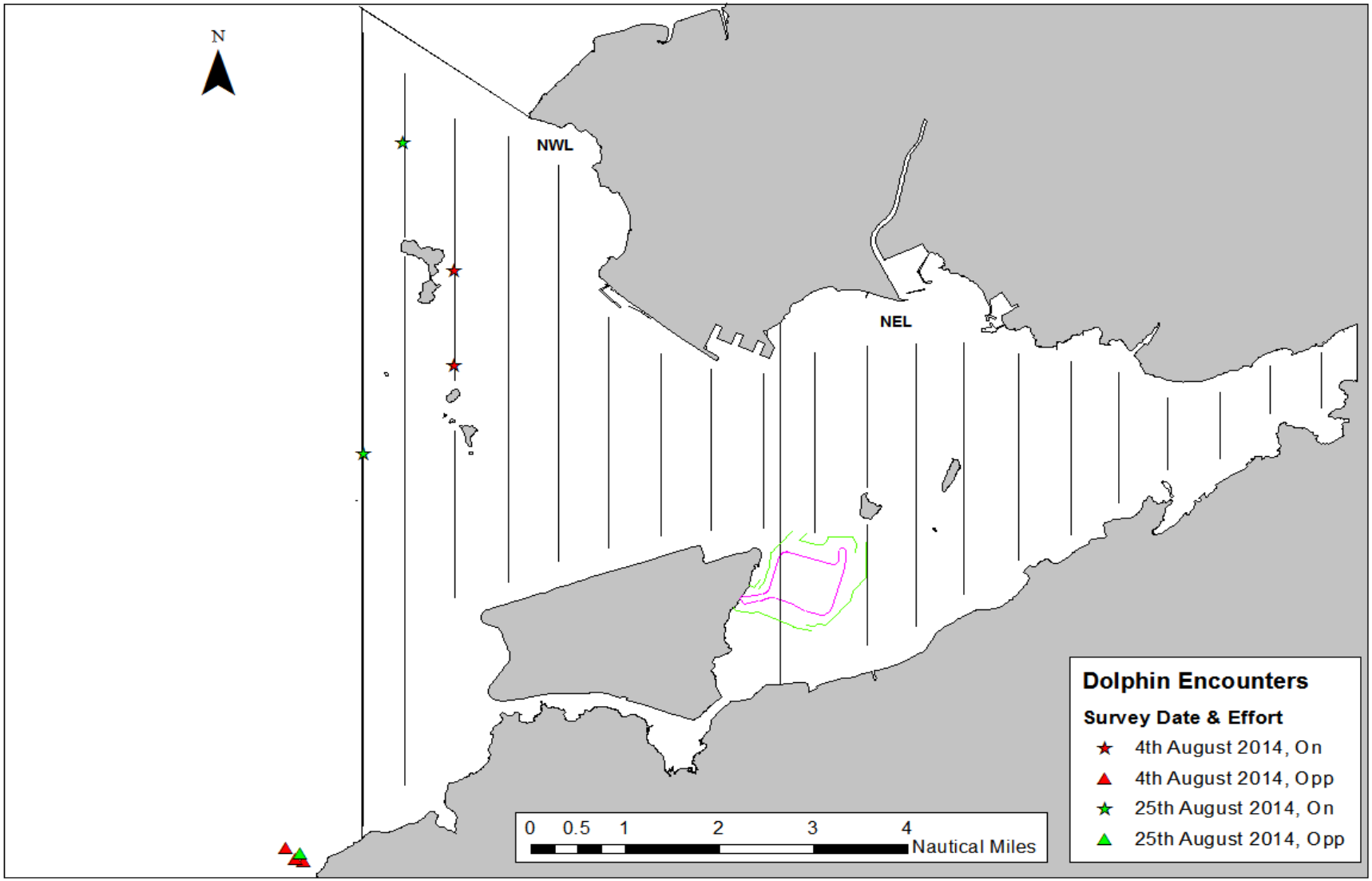
Figure 5a



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

Impact Dolphin Monitoring Survey Efforts on 25 and 26 August 2014

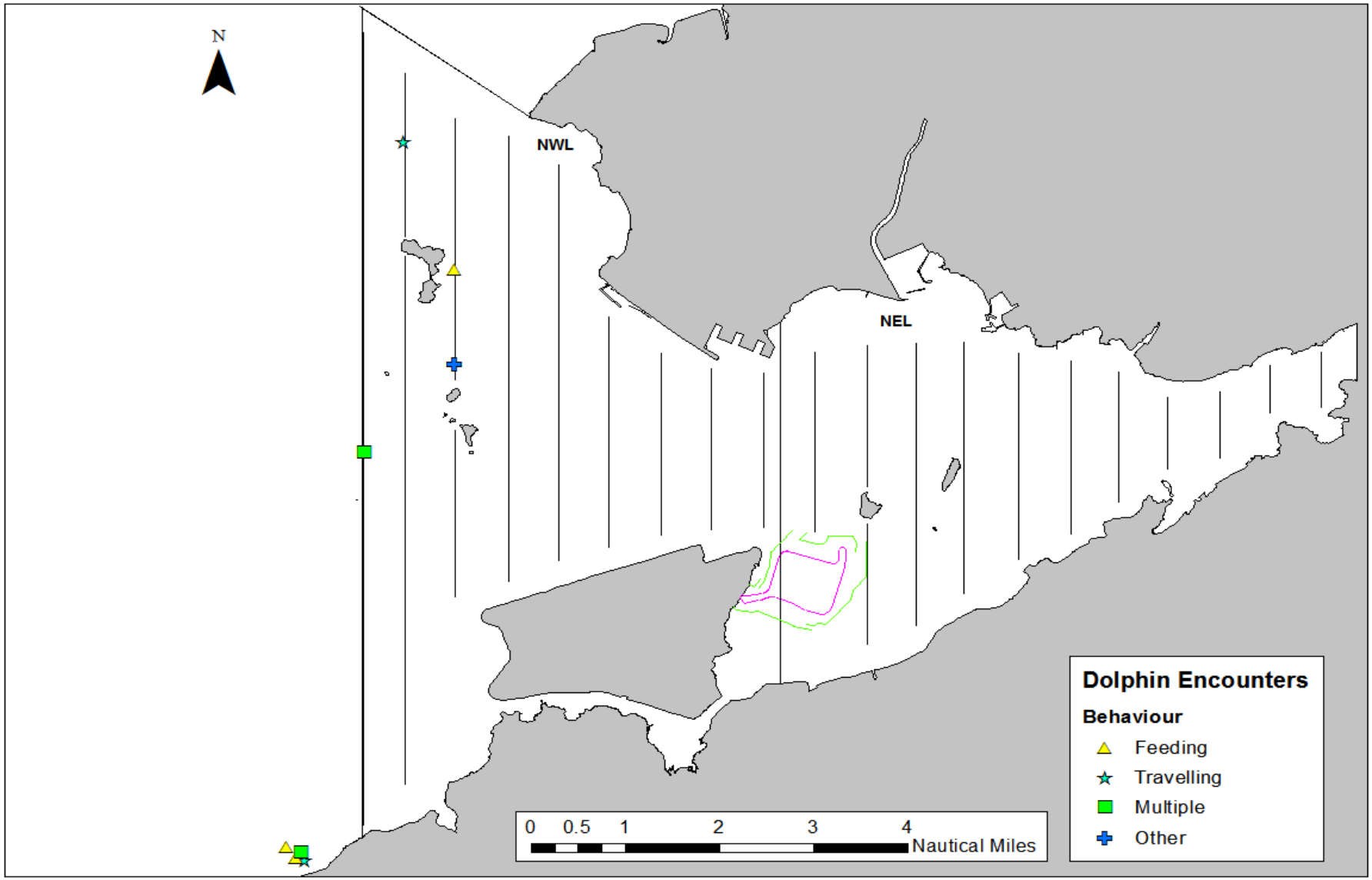
Figure 5b



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

Impact Dolphin Monitoring Survey
Sightings in August 2014

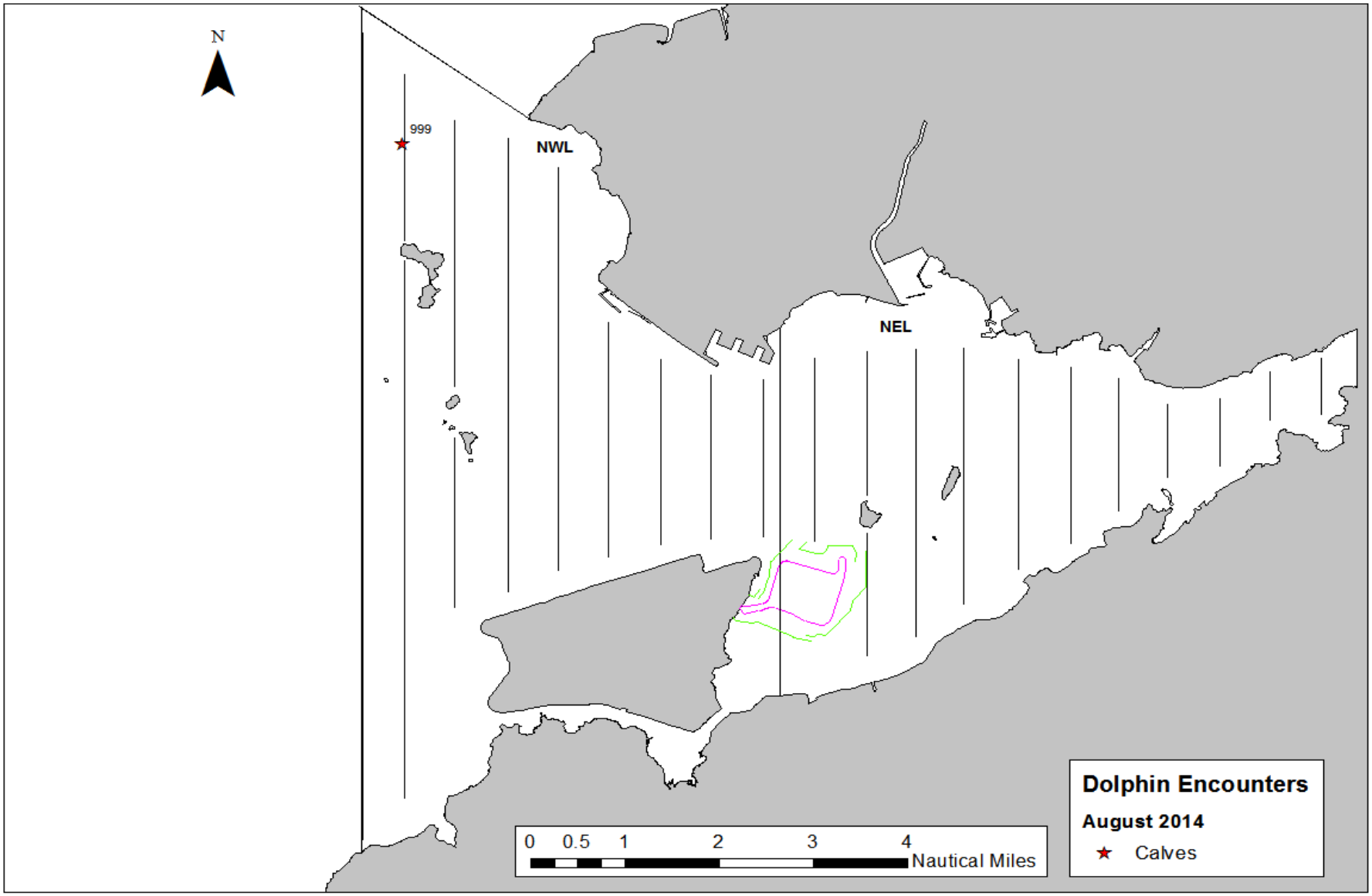
Figure 5c



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

Impact Dolphin Monitoring Survey
Behaviour Map in August 2014

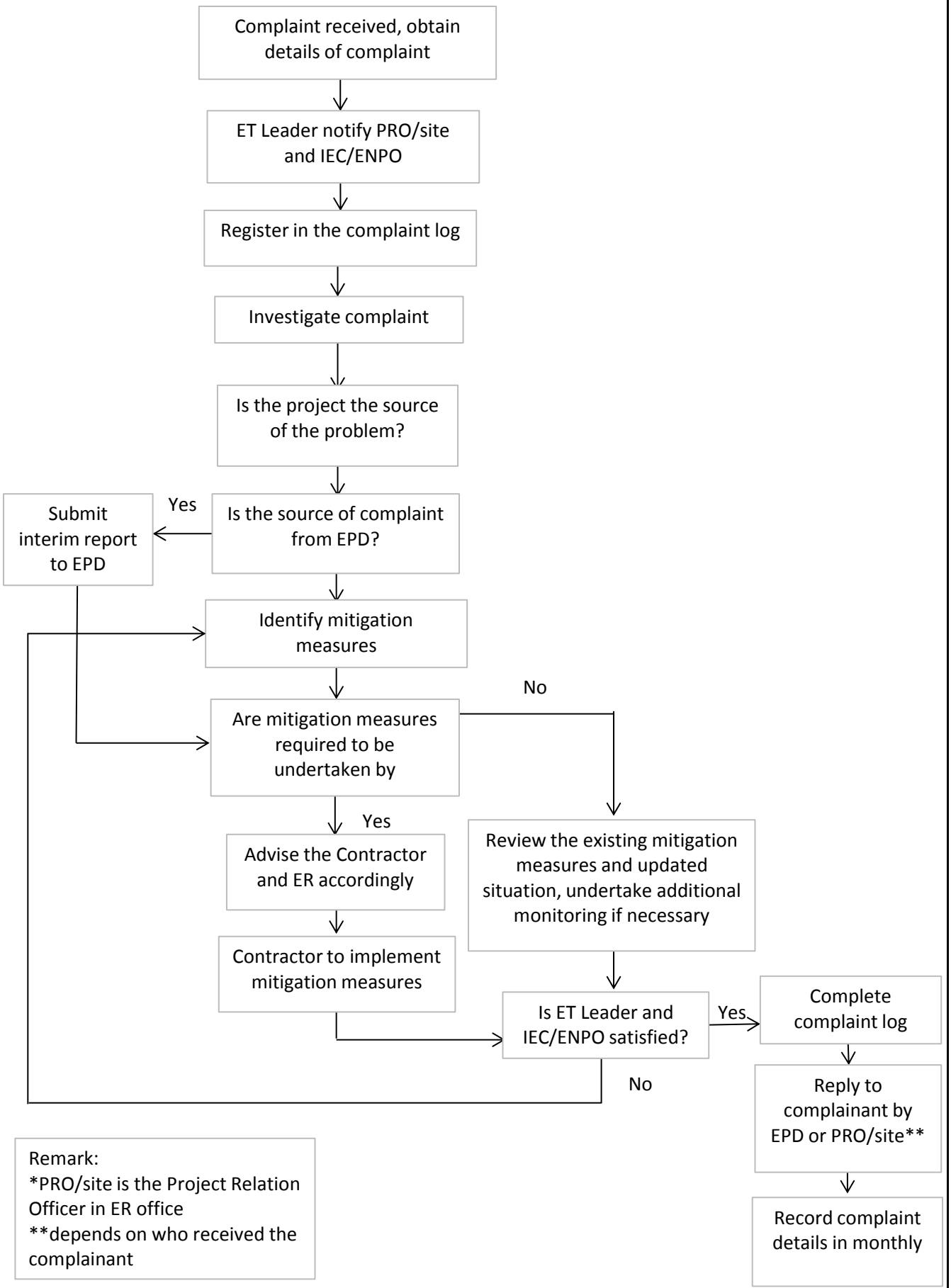
Figure 5d



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

Impact Dolphin Monitoring Survey Calf
Map in August 2014

Figure 5e

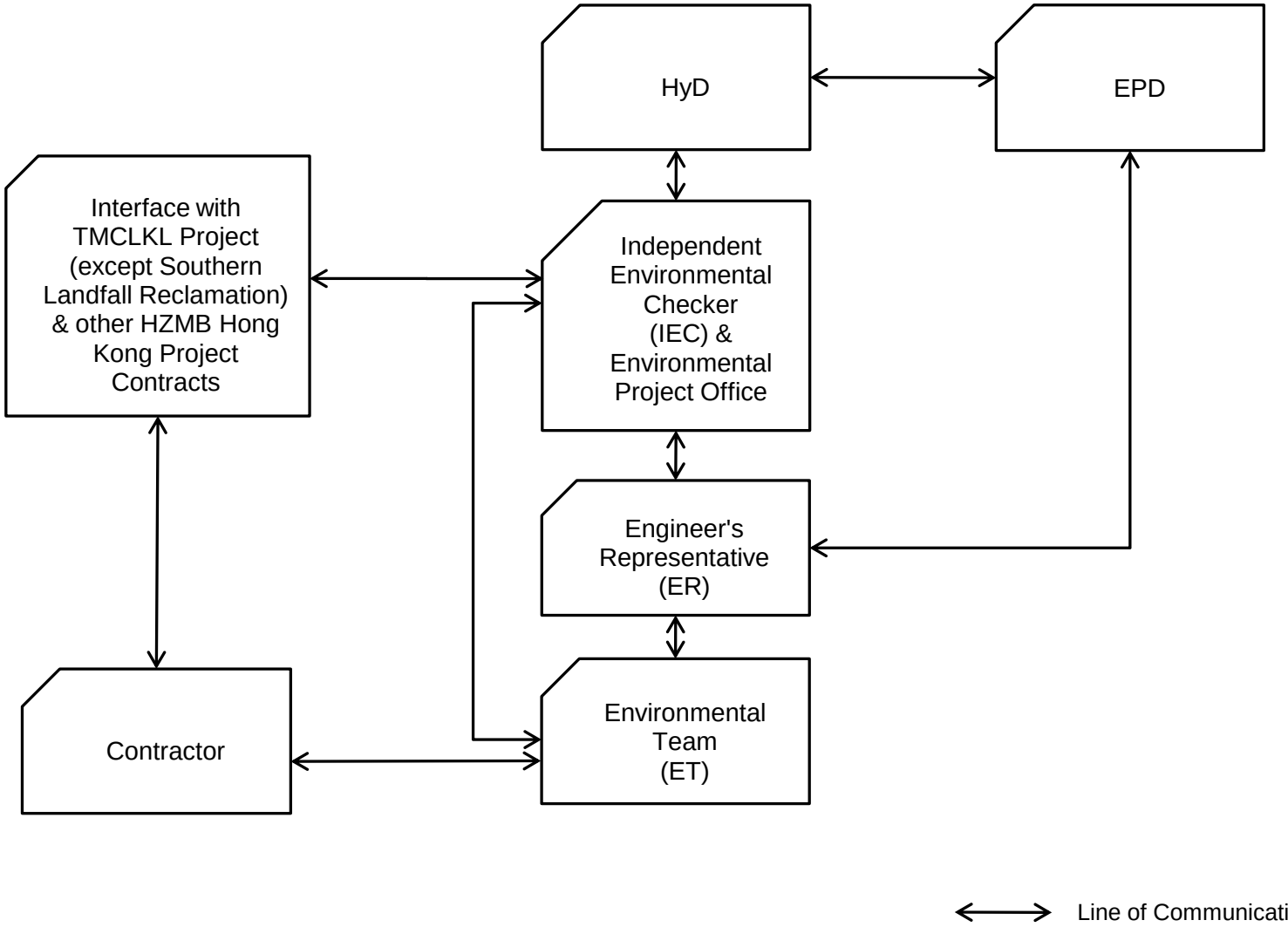


HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

AECOM

Environmental Complaint Handling Procedure

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



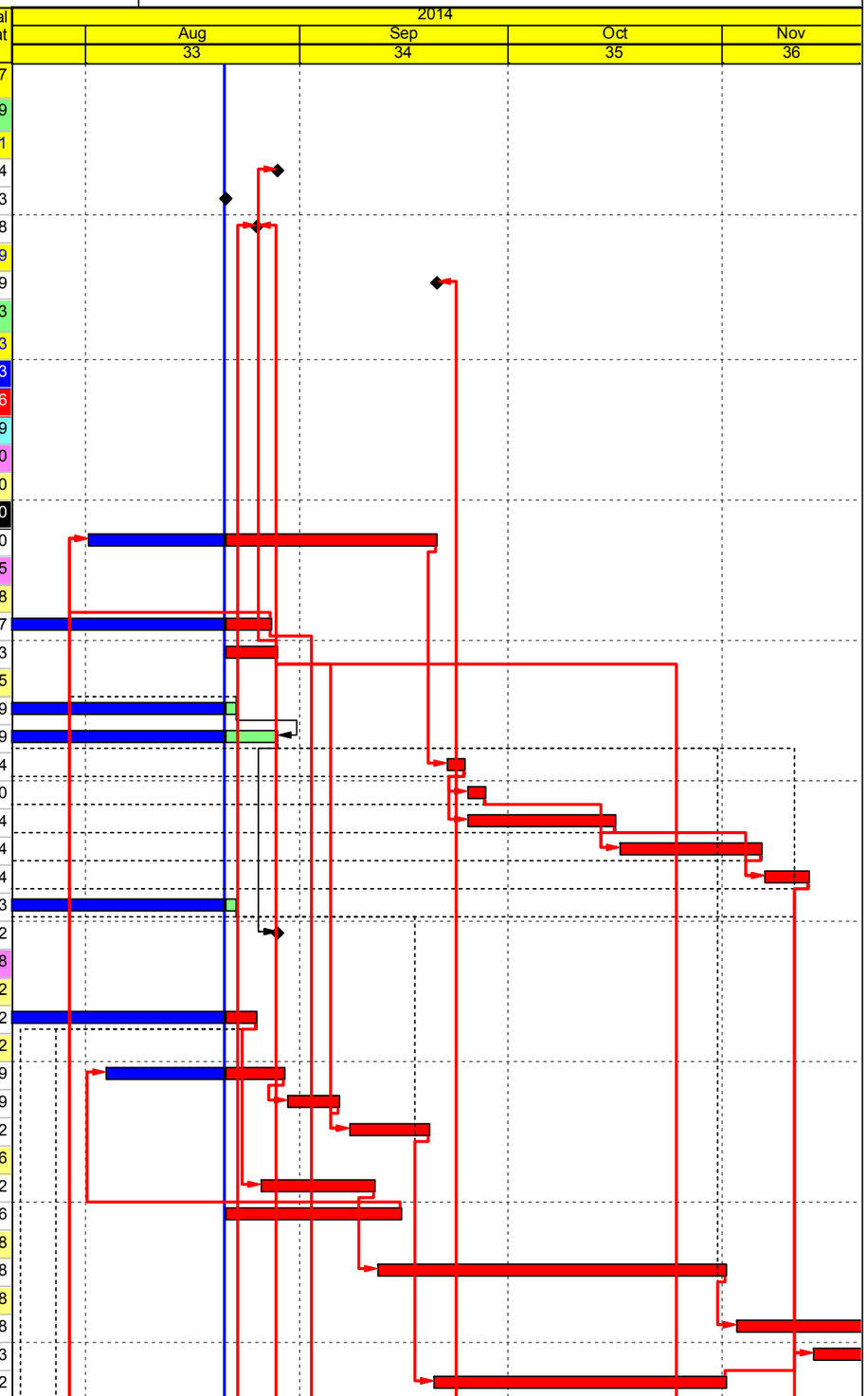
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
--RECLAMATION WORKS
Project No.: 60249820 Date: April 2013

Project Organisation for Environmental Works

AECOM

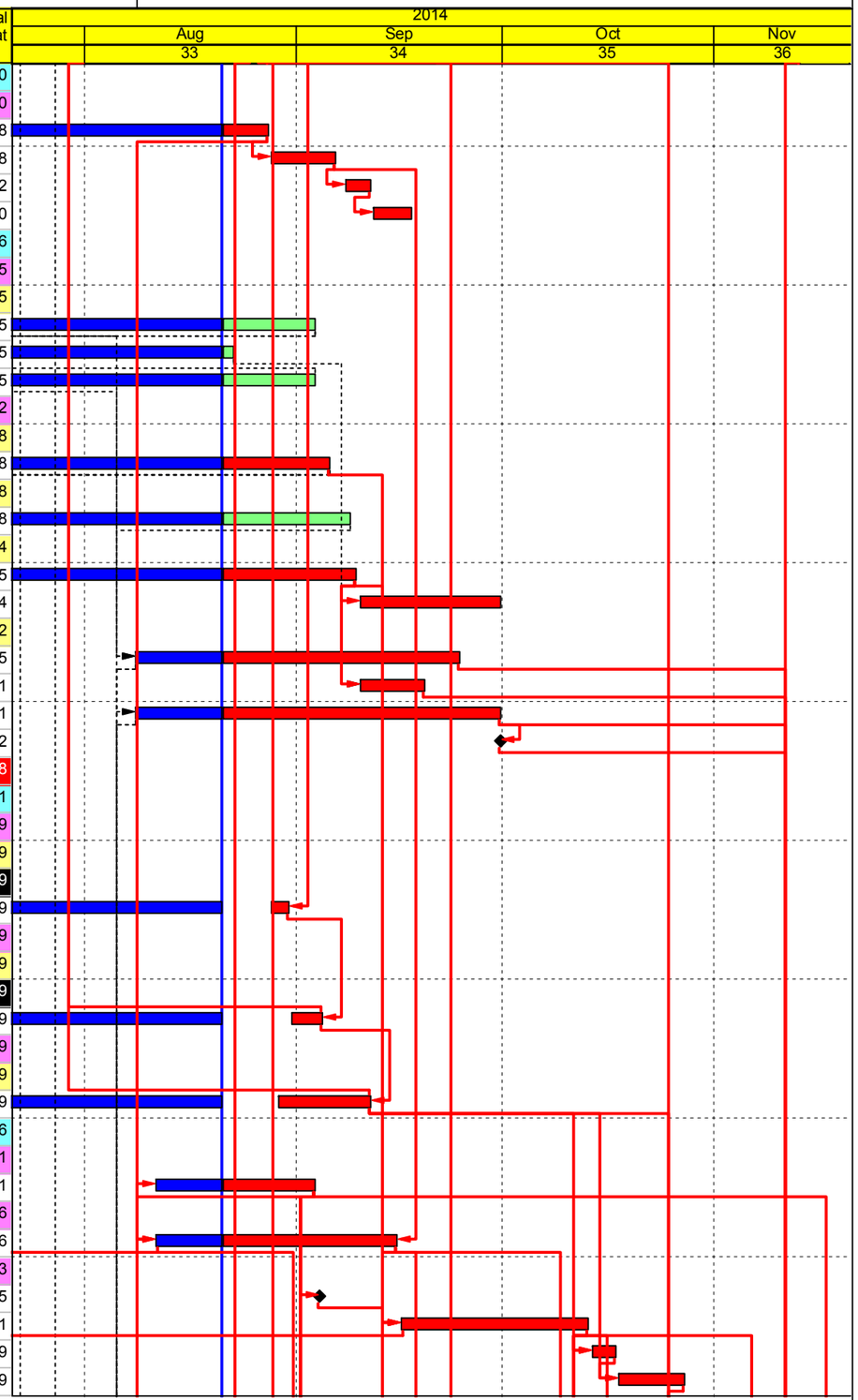
Appendix A

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
32th Monthly Progress Report Status as on 21Aug2014 Ver.5		1745	21-May-12 A	27-Mar-17	17
Contract Key Dates		31	21-Aug-14	20-Sep-14	-29
Key Dates for achievement of Stages and completion of Sections		8	21-Aug-14	28-Aug-14	-121
G1040	KD-2, Achievement of Stage 2 (420days+EOT 2days, 24Jan2013)	0		28-Aug-14*	-214
G1050	KD-3, Achievement of Stage 3 (730days+EOT 2days, 30Nov2013)	0		21-Aug-14*	-263
G1063	KD-4, Completion of Section A Main Area (730days+EOT 0.5days, 29Nov2013) PCB Are	0		25-Aug-14*	-118
Vacation of Site		0	20-Sep-14	20-Sep-14	-29
G1370	Works Area TKO-WA (Zone C)	0		20-Sep-14*	-29
Work Zone, as defined in PS Clause 1.03(6)		401	05-Feb-14 A	12-Mar-15	763
Portion A, B, C & E		401	05-Feb-14 A	12-Mar-15	763
Portion A, B, C & E		401	05-Feb-14 A	12-Mar-15	763
Seawall		257	07-Apr-14 A	19-Dec-14	846
Cellular Structures		257	07-Apr-14 A	19-Dec-14	199
Cellular Main Cells 85cells		48	01-Aug-14 A	20-Sep-14	-60
Full Guide Frames Method 85cells		48	01-Aug-14 A	20-Sep-14	-60
Portion E1 C078 & C079 & Portion E2 C065 & C066 4cells		48	01-Aug-14 A	20-Sep-14	-60
CSE1-040	PE1 Cellular Structure C078 & C079 2cells Type_C 9,143m3	48	01-Aug-14 A	20-Sep-14	-60
Connecting Arcs		221	07-Apr-14 A	13-Nov-14	235
Portion E2 between K051/K052 to C066/C067 16arcs		71	25-Jun-14 A	28-Aug-14	-28
CAE2-025L	PE2 Connecting Arc C063/C064 - C065/C066 Landside upper arcs splicing 3nrs (WC1)	18	25-Jun-14 A	27-Aug-14	-27
CAE2-028	PE2 Final backfill cellular cells & Arcs C063/C064, C064/C065, C065/C066 & C066/C067	7	21-Aug-14	28-Aug-14	-173
Portion E1 between C073/C074 to C090/C091 18arcs		221	07-Apr-14 A	13-Nov-14	235
CAE1-014L	PE1 Connecting Arc C084/C085 - C087/C088 Landside upper arcs splicing 4nrs (HF)	34	07-Apr-14 A	22-Aug-14	9
CAE1-018	PE1 Final backfill cellular cells & Arcs C080/C081 to C090/C091 Type_C 91,454.5 m3	22	31-May-14 A	28-Aug-14	9
CAE1-022L	PE1 Connecting Arc C077/C078 - C079/C080 Landside lower arcs 3nrs	3	22-Sep-14	24-Sep-14	-54
CAE1-022S	PE1 Connecting Arc C077/C078 - C079/C080 Seaside lower arcs 3nrs	3	25-Sep-14	27-Sep-14	-40
CAE1-024L	PE1 Connecting Arc C077/C078 - C079/C080 Landside upper arcs splicing 3nrs (WC1)	17	25-Sep-14	16-Oct-14	-54
CAE1-024S	PE1 Connecting Arc C077/C078 - C079/C080 Seaside upper arcs splicing 3nrs (WC1)	18	17-Oct-14	06-Nov-14	-54
CAE1-028	PE1 Final backfill cellular cells & Arcs C077/C078 to C079/C080 Type_C 28,665m3	6	07-Nov-14	13-Nov-14	-54
CAE1-048	PE1 Final backfill cellular cells & Arcs C077 to C066 Type_C 108,416m3	26	13-Jun-14 A	22-Aug-14	13
CAE1-099	PE1 Completion of Cellular Cell at interface of TM-CLKL Tunnel	0		28-Aug-14	312
Capping Beams		198	29-Apr-14 A	19-Dec-14	-48
Portion B between K028 to K056 Capping Beams		52	29-Apr-14 A	25-Aug-14	-122
CB025-00020	PB Capping Beams structure K044 - K056 13cells 4days/cell	52	29-Apr-14 A	25-Aug-14	-122
Portion E2 between K057 to C067 Capping Beams		29	04-Aug-14 A	19-Sep-14	-12
CBE2-000	PE2 Capping Beams structure K057 to C062 6cells 4days/cell	13	04-Aug-14 A	29-Aug-14	-19
CBE2-005	PE2 Capping Beams structure K063 to C064 2cells 4days/cell	8	30-Aug-14	06-Sep-14	-19
CBE2-010	PE2 Capping Beams structure C065 to C067 3cells 4days/cell	12	08-Sep-14	19-Sep-14	-12
Portion C2a between C112 to C103 Capping Beams		24	21-Aug-14	15-Sep-14	-126
CBC2a-010	PC2a Capping Beams structure C106 to C103 4cells 4days/cell	16	26-Aug-14	11-Sep-14	-122
CBC2a-020	PC2a Capping Beams structure C112 to C107 6cells 4days/cell	24	21-Aug-14	15-Sep-14	-126
Portion C2c between C102 to C091 Capping Beams		48	12-Sep-14	01-Nov-14	-48
CBC2c-000	PC2c Capping Beams structure C102 to C091 12cells 4days/cell	48	12-Sep-14	01-Nov-14	-48
Portion E1 between C090 to C074 Capping Beams		84	20-Sep-14	19-Dec-14	-48
CBE1-010	PE1 Capping Beams structure C090 to C080 11cells 4days/cell	44	03-Nov-14	19-Dec-14	-48
CBE1-020	PE1 Capping Beams structure C079 & C078 2cells 4days/cell	8	14-Nov-14	22-Nov-14	-23
CBE1-030	PE1 Capping Beams structure C068 to C077 10cells 4days/cell	40	20-Sep-14	01-Nov-14	-12



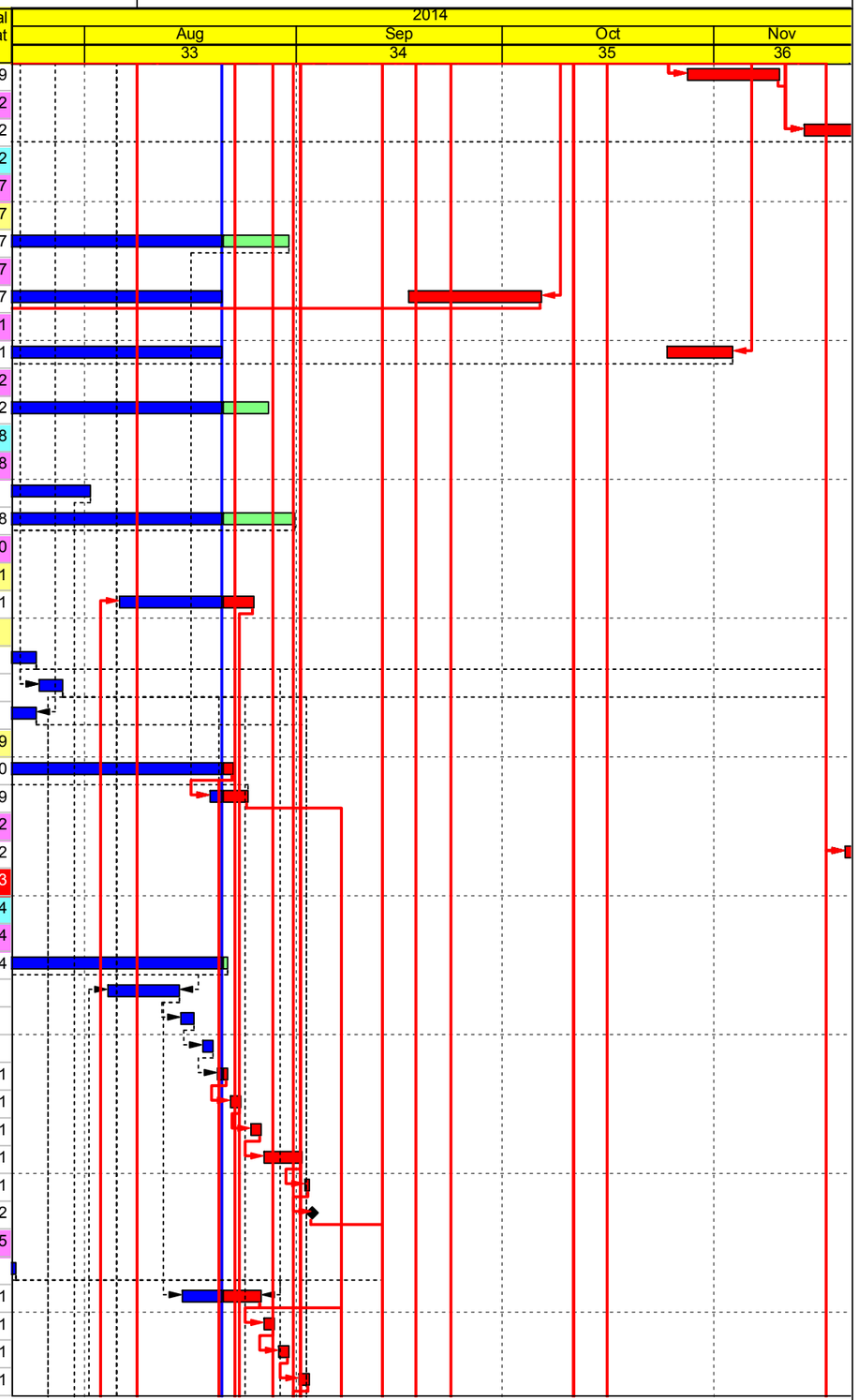
Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Optimizing Rubble Mound Seawalls		61	15-Jul-14 A	17-Sep-14	-110
Seawall Portion C2a at C117 - C113		61	15-Jul-14 A	17-Sep-14	-110
RFC2a-0070	PC2a at C117 - C113 Rockfill (Cat1), filter layer & geotextile +2.5mPD 21,060m3	12	15-Jul-14 A	27-Aug-14	-138
RFC2a-0080	PC2a at C117 - C113 Rockfill (Cat1) for platform upto +2.5mPD 19,530m3	10	28-Aug-14	06-Sep-14	-138
RFC2a-0090	PC2a at C117 - C113 Rockfill (Cat1 Fill) upto +6.0mPD & geotextile laying 7,980m3	4	08-Sep-14	11-Sep-14	-122
RFC2a-0100	PC2a at C117 - C113 UnderLayer (0mPD 12,600m3	6	12-Sep-14	17-Sep-14	-110
Conforming Sloping Seawalls		218	05-May-14 A	30-Sep-14	926
Geotextile		140	11-Jul-14 A	03-Sep-14	885
Seawall Portion E1 at C068 - C090 23cells		140	11-Jul-14 A	03-Sep-14	885
SGE1-010	PE1 Geotextile at C090 - C080 11cells	22	11-Jul-14 A	03-Sep-14	885
SGE1-020	PE1 Geotextile at C079 - C078 2cells	4	18-Jul-14 A	22-Aug-14	5
SGE1-030	PE1 Geotextile at C077 - C068 10cells	20	13-Jul-14 A	03-Sep-14	885
Rockfill		149	05-May-14 A	30-Sep-14	62
Seawall Portion C2a at C112 - C103 10cells		40	05-May-14 A	05-Sep-14	-128
RFC2a-000	PC2a Rockfill at C112 - C103 Rockfill 10cells	40	05-May-14 A	05-Sep-14	-128
Seawall Portion C2c at C102 - C091 12cells		48	18-Jun-14 A	08-Sep-14	78
RFC2c-000	PC2c Rockfill at C102 - C091 12cells	48	18-Jun-14 A	08-Sep-14	78
Seawall Portion E2 at K052 - C067 16cells		130	14-May-14 A	30-Sep-14	-4
RFE2-010	PE2 Rockfill at C052 - C062 11cells	44	14-May-14 A	09-Sep-14	-75
RFE2-020	PE2 Rockfill at C063 - C067 5cells	20	10-Sep-14	30-Sep-14	-4
Seawall Portion E1 at C068 - C090 23cells		54	08-Aug-14 A	30-Sep-14	-22
RFE1-010	PE1 Rockfill at C090 - C080 11cells	34	08-Aug-14 A	24-Sep-14	-15
RFE1-020	PE1 Rockfill at C079 - C078 2cells	10	10-Sep-14	19-Sep-14	-11
RFE1-030	PE1 Rockfill at C077 - C068 10cells	50	08-Aug-14 A	30-Sep-14	-21
RFE1-099	PE1 Completion of Type V1 seawall	0		30-Sep-14	-22
Reclamation		304	01-Apr-14 A	27-Nov-14	868
Ground Treatment		91	01-Apr-14 A	11-Sep-14	-31
Geotextile		8	01-May-14 A	30-Aug-14	-29
Existing Seabed Below -5mPD		8	01-May-14 A	30-Aug-14	-29
Land Portion E2 Northern Part		8	01-May-14 A	30-Aug-14	-29
GERE2-010	PE2 Geotextile for sand blanket Northern (seabed below -5mPD)	8	01-May-14 A	30-Aug-14	-29
Sand Blankets		15	10-Jun-14 A	04-Sep-14	-29
Existing Seabed below -5mPD		15	10-Jun-14 A	04-Sep-14	-29
Land Portion E2 Northern Part		15	10-Jun-14 A	04-Sep-14	-29
SABRE2-020	Sand Blankets at PE2 71,000m3 5,000m3/day North-East	15	10-Jun-14 A	04-Sep-14	-29
Vertical Band Drains by Marine Plant		84	01-Apr-14 A	11-Sep-14	-29
Land Portion E2 Northern Part 84,746nrs		84	01-Apr-14 A	11-Sep-14	-29
VBDE2-020	Vertical Band Drains 61,714nrs by marine plant at PE2 (750nrs/day)	84	01-Apr-14 A	11-Sep-14	-29
Marine Fill		109	11-Aug-14 A	27-Nov-14	-66
Land Portion C1b		23	11-Aug-14 A	03-Sep-14	-161
MFC1b-030	Marine Fill Type A Sand 70% at PC1b east 454,612m3 20,000m3/day	23	11-Aug-14 A	03-Sep-14	-161
Land Portion C2a		36	11-Aug-14 A	15-Sep-14	-146
MFC2a-010	Marine Fill Type A Sand 70% at PC2a 730,287m3 20,000m3/day	36	11-Aug-14 A	15-Sep-14	-146
Land Portion E2		68	04-Sep-14	10-Nov-14	-63
MFE2-005	Start PE2 after Marine Fill Type A Sand 100% at PC1b	0	04-Sep-14		-75
MFE2-010	Marine Fill Type A Sand 70% at PE2 South 516,405m3 20,000m3/day	26	16-Sep-14	13-Oct-14	-81
MFE2-020	Marine Fill Type A Sand 70% at PE2 North-W 76,867m3 20,000m3/day	4	14-Oct-14	17-Oct-14	-59
MFE2-030	Marine Fill Type A Sand 70% at PE2 North-M 182,445m3 20,000m3/day	9	18-Oct-14	27-Oct-14	-59



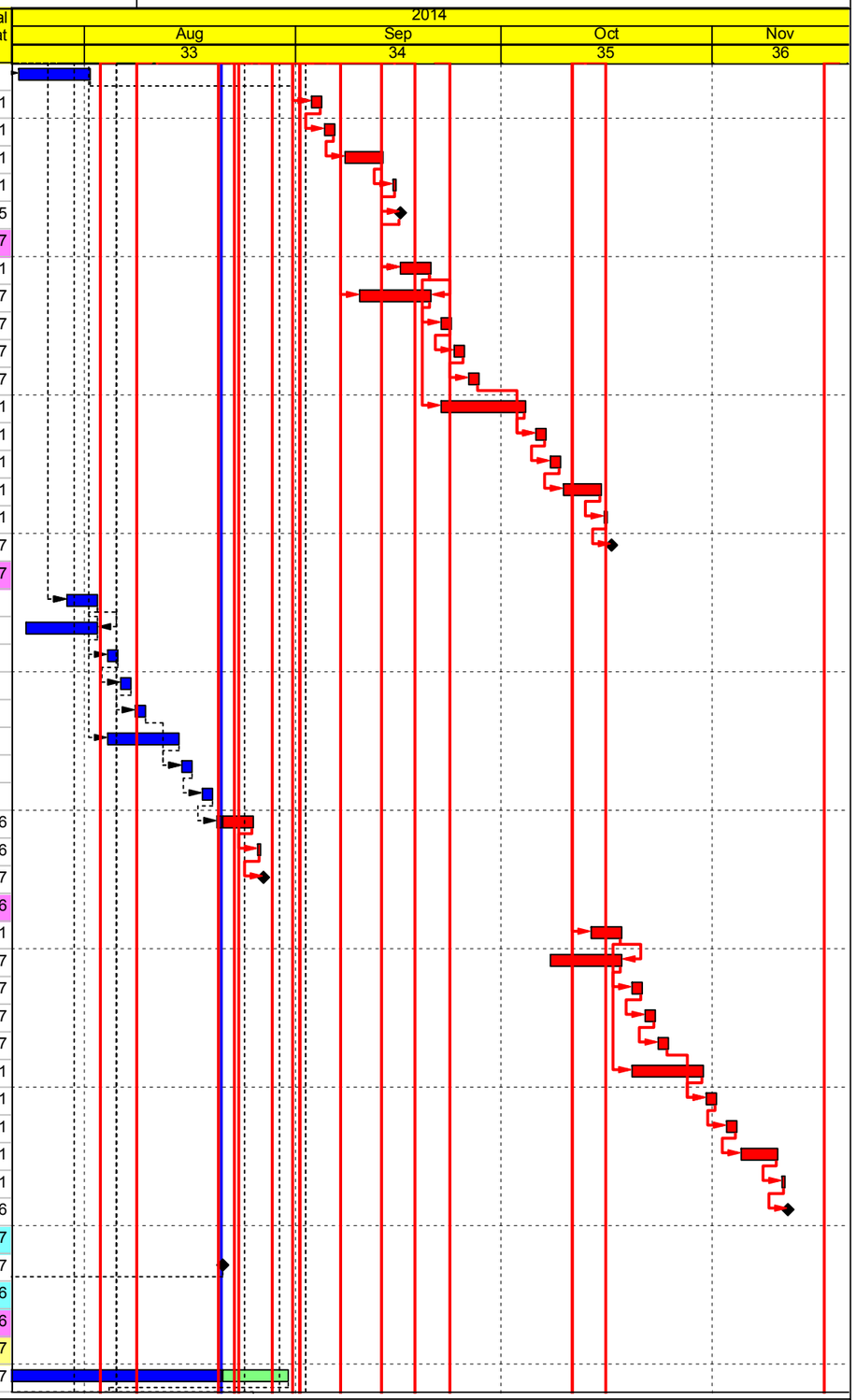
Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
MFE2-040	Marine Fill Type A Sand 70% at PE2 North-E 257,093m3 20,000m3/day	13	28-Oct-14	10-Nov-14	-59
Land Portion E1		13	14-Nov-14	27-Nov-14	-62
MFE1-010	Marine Fill Type A Sand 70% at PE1 255,355m3 20,000m3/day	13	14-Nov-14	27-Nov-14	-62
Vertical Band Drains by Land Plant		245	20-May-14 A	03-Nov-14	892
Land Portion B 304,328nrs		4	20-May-14 A	30-Aug-14	957
Main Area 201,530nrs by Land		4	20-May-14 A	30-Aug-14	957
VBDB0-060	Vertical Band Drains by land plant at PB Main North 15,000nrs 4,000nrs/day (13HP)	4	20-May-14 A	30-Aug-14	957
Land Portion C2a 111,740nrs by Land		38	25-Jun-14 A	06-Oct-14	-157
VBDC2a-030	Vertical Band Drains 111,740nrs by land plant at PC2a 3,000nrs/day (11HP)	38	25-Jun-14 A	06-Oct-14	-157
Land Portion E2 Southern Part 84,746nrs		28	26-Jun-14 A	03-Nov-14	-71
VBDE2-012	Vertical Band Drains 84,746nrs by land plant at PE2 South 3,000nrs/day (11HP)	28	26-Jun-14 A	03-Nov-14	-71
Land Portion E1 12,243nrs by Land		10	10-Jul-14 A	27-Aug-14	62
VBDE1-10	Vertical Band Drains 12,243nrs by land plant at PE1 (1200nrs/day) (5HP)	10	10-Jul-14 A	27-Aug-14	62
Earthwork Fill		151	02-Jun-14 A	27-Nov-14	868
Land Portion A		31	02-Jun-14 A	31-Aug-14	888
EFA0-050	Earthwork Fill Type D Sand 100% at PA at C122 - C126 Edge Area 146,046m3 12,000r	12	20-Jul-14 A	01-Aug-14 A	
EFA0-070	Earthwork Fill Type D Sand 100% at PA at C127 - C134 Edge Area 202,097m3 12,000r	17	02-Jun-14 A	31-Aug-14	888
Land Portion B		75	11-Jul-14 A	25-Aug-14	-70
Edge K013 - K027		4	06-Aug-14 A	25-Aug-14	-231
EFB0-010	Earthwork Fill Type D Sand 100% at PB Edge at K013 - K027 400,000m3 20,000m3/da	4	06-Aug-14 A	25-Aug-14	-231
Edge K028 - K054		12	17-Jul-14 A	28-Jul-14 A	
EFB0-040	Earthwork Fill Type D Sand 100% at PB Edge at K041 - K048 160,000m3 40,000m3/da	4	21-Jul-14 A	24-Jul-14 A	
EFB0-050	Earthwork Fill Type D Sand 100% at PB Edge at K049 - K054 160,000m3 40,000m3/da	4	25-Jul-14 A	28-Jul-14 A	
EFB0-055	Earthwork Fill Type D Sand 100% at PB Edge at K049 - K054 80,000m3 10,000m3/day	8	17-Jul-14 A	24-Jul-14 A	
Main Area		43	11-Jul-14 A	24-Aug-14	-69
EFB0-020	Earthwork Fill Type D Sand 100% at PB Main South 190000m3 40,000m3/day	5	11-Jul-14 A	22-Aug-14	-250
EFB0-032	Earthwork Fill Type D Sand 100% at PB Main North 135,000m3 40,000m3/day	4	19-Aug-14 A	24-Aug-14	-69
Land Portion C1b		8	20-Nov-14	27-Nov-14	-232
EFC1b-010	Earthwork Fill Type D Sand 100% at PC1b west 235,109m3 30,000m3/day 1st	8	20-Nov-14	27-Nov-14	-232
Surcharge		401	05-Feb-14 A	12-Mar-15	763
Temporary Jettys		148	17-Jun-14 A	12-Nov-14	884
2nd Temporary Jetty at C101		78	17-Jun-14 A	03-Sep-14	954
TP20010	Footing at Land - Place Steel Bridge precast footing and anchor block on	5	17-Jun-14 A	21-Aug-14	794
TP20020	Marine Piling 10nrs	10	04-Aug-14 A	14-Aug-14 A	
TP20030	Installation of Dolphins 2nrs	2	15-Aug-14 A	17-Aug-14 A	
TP20040	Installation of main pier	2	18-Aug-14 A	19-Aug-14 A	
TP20050	Installation of steel bridge from Jetty to the land footing	2	20-Aug-14 A	21-Aug-14	-131
TP20070	Installation of conveyor	2	22-Aug-14	23-Aug-14	-131
TP20080	Installation of accessory parts	2	25-Aug-14	26-Aug-14	-131
TP20090	Trial testing	5	27-Aug-14	01-Sep-14	-131
TP20100	Certification for the System	1	02-Sep-14	02-Sep-14	-131
TP20110	Start Operation of unloading public fill at C101	0	03-Sep-14		-162
3rd Temporary Jetty at C105		62	16-Jul-14 A	16-Sep-14	-175
TP30010	Footing at Land - Place Steel Bridge precast footing and anchor block on	5	16-Jul-14 A	21-Jul-14 A	
TP30020	Marine Piling 10nrs	10	15-Aug-14 A	26-Aug-14	-141
TP30030	Installation of Dolphins 2nrs	2	27-Aug-14	28-Aug-14	-141
TP30040	Installation of main pier	2	29-Aug-14	30-Aug-14	-141
TP30050	Installation of steel bridge from Jetty to the land footing	2	01-Sep-14	02-Sep-14	-141



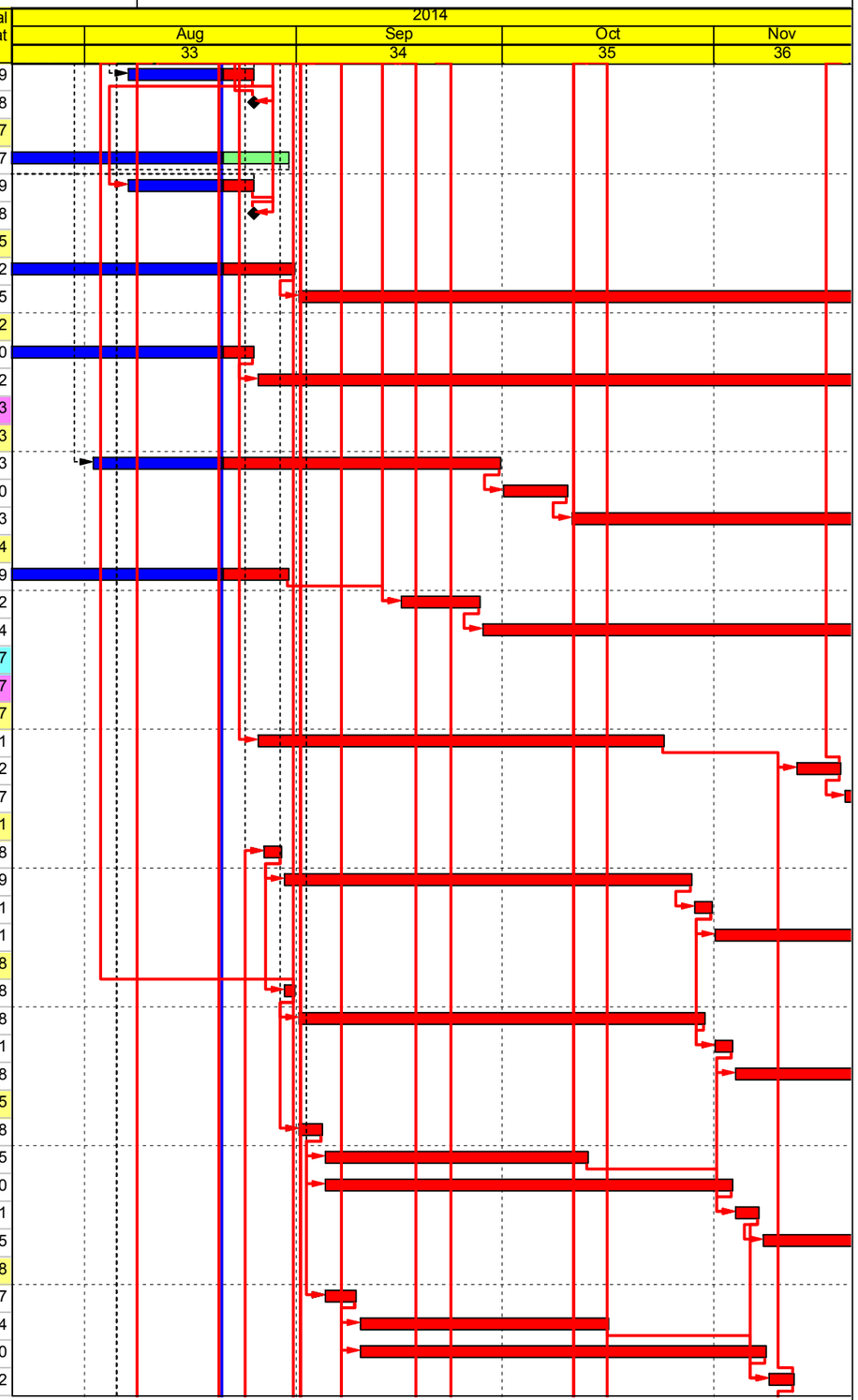
Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
TP30060	Assembly of conveyor	10	22-Jul-14 A	01-Aug-14 A	
TP30070	Installation of conveyor	2	03-Sep-14	04-Sep-14	-141
TP30080	Installation of accessory parts	2	05-Sep-14	06-Sep-14	-141
TP30090	Trial testing	5	08-Sep-14	13-Sep-14	-141
TP30100	Certification for the System	1	15-Sep-14	15-Sep-14	-141
TP30110	Start Operation of unloading public fill at C105	0	16-Sep-14		-175
4th Temporary Jetty at C109		37	10-Sep-14	17-Oct-14	-147
TP40010	Footing at Land - Place Steel Bridge precast footing and anchor block on	5	16-Sep-14	20-Sep-14	-121
TP40020	Marine Piling 10nrs	10	10-Sep-14	20-Sep-14	-117
TP40030	Installation of Dolphins 2nrs	2	22-Sep-14	23-Sep-14	-117
TP40040	Installation of main pier	2	24-Sep-14	25-Sep-14	-117
TP40050	Installation of steel bridge from Jetty to the land footing	2	26-Sep-14	27-Sep-14	-117
TP40060	Assembly of conveyor	10	22-Sep-14*	04-Oct-14	-121
TP40070	Installation of conveyor	2	06-Oct-14	07-Oct-14	-121
TP40080	Installation of accessory parts	2	08-Oct-14	09-Oct-14	-121
TP40090	Trial testing	5	10-Oct-14	15-Oct-14	-121
TP40100	Certification for the System	1	16-Oct-14	16-Oct-14	-121
TP40110	Start Operation of unloading public fill at C109	0	17-Oct-14		-147
5th Temporary Jetty at K053		35	23-Jul-14 A	27-Aug-14	-157
TP50010	Footing at Land - Place Steel Bridge precast footing and anchor block on	5	29-Jul-14 A	02-Aug-14 A	
TP50020	Marine Piling 10nrs	10	23-Jul-14 A	02-Aug-14 A	
TP50030	Installation of Dolphins 2nrs	2	04-Aug-14 A	05-Aug-14 A	
TP50040	Installation of main pier	2	06-Aug-14 A	07-Aug-14 A	
TP50050	Installation of steel bridge from Jetty to the land footing	2	08-Aug-14 A	09-Aug-14 A	
TP50060	Assembly of conveyor	10	04-Aug-14 A	14-Aug-14 A	
TP50070	Installation of conveyor	2	15-Aug-14 A	16-Aug-14 A	
TP50080	Installation of accessory parts	2	18-Aug-14 A	19-Aug-14 A	
TP50090	Trial testing	5	20-Aug-14 A	25-Aug-14	-126
TP50100	Certification for the System	1	26-Aug-14	26-Aug-14	-126
TP50110	Start Operation of unloading public fill at K053	0	27-Aug-14		-157
6th Temporary Jetty at K057		35	08-Oct-14	12-Nov-14	-86
TP60010	Footing at Land - Place Steel Bridge precast footing and anchor block on	5	14-Oct-14	18-Oct-14	-71
TP60020	Marine Piling 10nrs	10	08-Oct-14	18-Oct-14	-67
TP60030	Installation of Dolphins 2nrs	2	20-Oct-14	21-Oct-14	-67
TP60040	Installation of main pier	2	22-Oct-14	23-Oct-14	-67
TP60050	Installation of steel bridge from Jetty to the land footing	2	24-Oct-14	25-Oct-14	-67
TP60060	Assembly of conveyor	10	20-Oct-14*	30-Oct-14	-71
TP60070	Installation of conveyor	2	31-Oct-14	01-Nov-14	-71
TP60080	Installation of accessory parts	2	03-Nov-14	04-Nov-14	-71
TP60090	Trial testing	5	05-Nov-14	10-Nov-14	-71
TP60100	Certification for the System	1	11-Nov-14	11-Nov-14	-71
TP60110	Start Operation of unloading public fill at K053	0	12-Nov-14		-86
Flat Barges for unloading		0	21-Aug-14	21-Aug-14	967
FB10010	Flat Barge for unloading at C132	0	21-Aug-14*		967
Portion A Surcharge		328	05-Feb-14 A	29-Dec-14	836
Main Reclamation Areas		328	05-Feb-14 A	29-Dec-14	836
A1 PCB East		202	05-Feb-14 A	30-Aug-14	957
SURA0-120	Surcharge Period at PA PCB East 3.5mths (8-4.5=3.5mths)	105	05-Feb-14 A	30-Aug-14	957



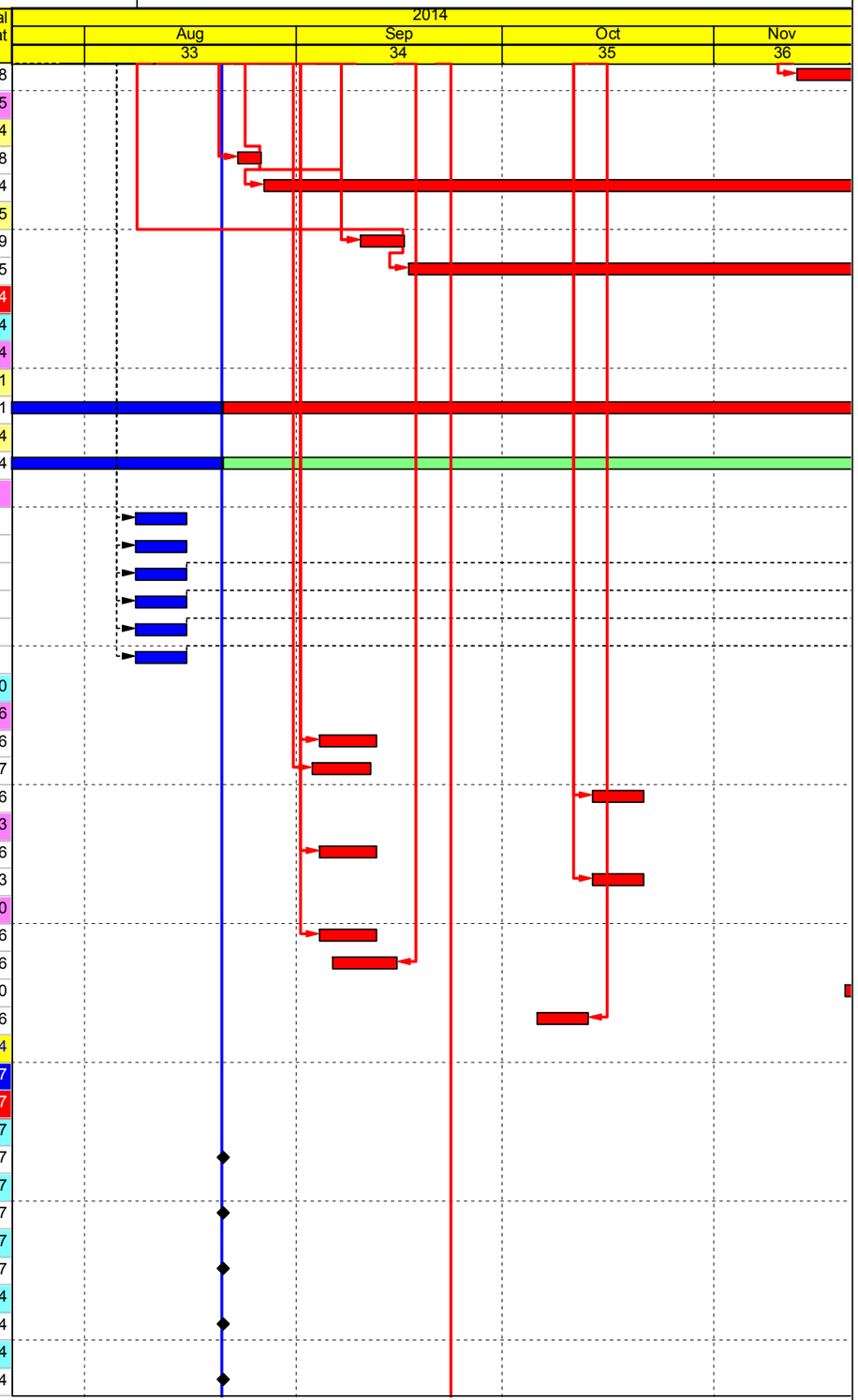
Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SURA0-130	Sand Surcharge Removal at PA PCB East 126,794m3 20,000m3/day	4	07-Aug-14 A	25-Aug-14	-109
SURA0-140	Completion of PA PCB East	0		25-Aug-14	-118
A1 PCB West		183	24-Feb-14 A	30-Aug-14	957
SURA0-220	Surcharge Period at PA PCB West 3.5mths (8-4.5=3.5mths)	105	24-Feb-14 A	30-Aug-14	957
SURA0-230	Sand Surcharge Removal at PA PCB West 126,794m3 20,000m3/day	7	07-Aug-14 A	25-Aug-14	-109
SURA0-240	Completion of PA PCB West	0		25-Aug-14	-118
A2		181	02-Jul-14 A	29-Dec-14	-255
SURA0-410	Surcharge Laying upto +11.5mPD & compaction upto +8.5mPD on Main Area at PA 285,	29	02-Jul-14 A	31-Aug-14	-232
SURA0-420	Surcharge Period on Main Area at PA 6mth (8-2-1-1=4mths)	120	01-Sep-14	29-Dec-14	-255
at C127 - C134 for Power Substation Area		175	20-Jun-14 A	23-Dec-14	-242
SURA0-310	Sand Surcharge Laying upto +11.5mPD & compaction upto +8.5mPD on Main Area at P/	4	20-Jun-14 A	25-Aug-14	-220
SURA0-320	Surcharge Period on Main Area at PA CLP substation 6mth (8-2-1-1=4mths)	120	26-Aug-14	23-Dec-14	-242
Edge Areas		161	02-Jul-14 A	09-Dec-14	-183
at C125 - C119		130	02-Aug-14 A	09-Dec-14	-183
SUEA0-055	Pause Period on Edge Area at PA 2mths	60	02-Aug-14 A	30-Sep-14	-183
SUEA0-060	Surcharge Laying & compaction upto 8.5mPD on Edge Area at PA 83,452m3 10,000m3/	9	01-Oct-14	10-Oct-14	-170
SUEA0-070	Surcharge Pause Period on Edge Area at PA 2mths	60	11-Oct-14	09-Dec-14	-183
at C134 - C126		148	02-Jul-14 A	26-Nov-14	-174
SUEA0-005	Pause Period on Edge Area at PA 2mths	60	02-Jul-14 A	30-Aug-14	-159
SUEA0-010	Surcharge Laying & compaction upto 8.5mPD on Edge Area at PA 107,295m3 10,000m3	11	16-Sep-14	27-Sep-14	-162
SUEA0-020	Surcharge Pause Period on Edge Area at PA 2mths	60	28-Sep-14	26-Nov-14	-174
Land Portion B		202	23-Aug-14	12-Mar-15	-77
Edge Areas		199	26-Aug-14	12-Mar-15	-77
at K013 - K027		146	26-Aug-14	18-Jan-15	-157
SUEB0-005	Surcharge Period 2mths after Fill upto +5.5mPD at PB at K013-K027	60	26-Aug-14	24-Oct-14	-231
SUEB0-010	Sand Surcharge Laying up to 8.5mPD on Edge Area at PB at K013 - K027 240,000m3 4	6	13-Nov-14	19-Nov-14	-232
SUEB0-020	Surcharge Period 1st stage on Edge Area at PB at K013 - K027 2mths	60	20-Nov-14	18-Jan-15	-157
at K028 - K034		186	27-Aug-14	28-Feb-15	-71
SUEB0-060	Sand Surcharge Laying up to 8.5mPD on Edge Area at PB at K028 - K034 100,000m3 4	3	27-Aug-14	29-Aug-14	-228
SUEB0-070	Surcharge Period 1st stage on Edge Area at PB 2mths (4.5-2.5=2mths)	60	30-Aug-14	28-Oct-14	-249
SUEB0-080	Sand Surcharge Laying up to top on Edge Area at PB 100,000m3 40,000m3/day	3	29-Oct-14	31-Oct-14	-231
SUEB0-090	Surcharge Period 2nd stage on Edge Area at PB (5-1=4mths)	120	01-Nov-14	28-Feb-15	-71
at K035 - K040		186	30-Aug-14	03-Mar-15	-68
SUEB0-140	Sand Surcharge Laying up to 8.5mPD on Edge Area at PB at K035 - K040 60,000m3 40	2	30-Aug-14	31-Aug-14	-228
SUEB0-150	Surcharge Period 1st stage on Edge Area at PB 2mths (4.5-2.5=2mths)	60	01-Sep-14	30-Oct-14	-248
SUEB0-160	Sand Surcharge Laying up to top on Edge Area at PB 60,000m3 40,000m3/day	2	01-Nov-14	03-Nov-14	-231
SUEB0-170	Surcharge Period 2nd stage on Edge Area at PB (5-1=4mths)	120	04-Nov-14	03-Mar-15	-68
at K041 - K048		188	01-Sep-14	07-Mar-15	-135
SUEB0-0100	Sand Surcharge Laying up to 8.5mPD on Edge Area at PB at K041 - K051 160,000m3 4	4	01-Sep-14	04-Sep-14	-228
SUEB0-0105	Additonal GI Works by Other Contractors HY/2010/07	30	05-Sep-14	13-Oct-14	-185
SUEB0-0110	Surcharge Period 1st stage on Edge Area at PB 2mths (4.5-2.5=2mths)	60	05-Sep-14	03-Nov-14	-250
SUEB0-0120	Sand Surcharge Laying up to top on Edge Area at PB 160,000m3 40,000m3/day	4	04-Nov-14	07-Nov-14	-231
SUEB0-0130	Surcharge Period 2nd stage on Edge Area at PB (5-1=4mths)	120	08-Nov-14	07-Mar-15	-135
at K049 - K054		189	05-Sep-14	12-Mar-15	-138
SUEB0-190	Sand Surcharge Laying up to 8.5mPD on Edge Area at PB at K049 - K054 160,000m3 4	4	05-Sep-14	09-Sep-14	-227
SUEB0-195	Additonal GI Works by Other Contractors HY/2010/07	30	10-Sep-14	16-Oct-14	-184
SUEB0-200	Surcharge Period 1st stage on Edge Area at PB 2mths (4.5-2.5=2mths)	60	10-Sep-14	08-Nov-14	-250
SUEB0-210	Sand Surcharge Laying up to top on Edge Area at PB 160,000m3 40,000m3/day	4	09-Nov-14	12-Nov-14	-232



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
SUEB0-220	Surcharge Period 2nd stage on Edge Area at PB (5-1=4mths)	120	13-Nov-14	12-Mar-15	-138
Reclamation Areas		145	23-Aug-14	14-Jan-15	-85
at Main 1		124	23-Aug-14	24-Dec-14	-64
SURB0-010	Sand Surcharge Laying upto top on Main Reclamation Area at PB South 110,000m3 40,(	3	23-Aug-14*	26-Aug-14	-228
SURB0-020	Surcharge Period on Main Reclamation Area at PB 6mths (7-3=4mths)	120	27-Aug-14	24-Dec-14	-64
at Main 2		127	10-Sep-14	14-Jan-15	-85
SURB0-060	Sand Surcharge Laying upto top on Main Reclamation Area at PB K041 - K051 267,000(	7	10-Sep-14	16-Sep-14	-79
SURB0-070	Surcharge Period on Main Reclamation Area at PB 6mths (7-3=4mths)	120	17-Sep-14	14-Jan-15	-85
Geotechnical Instrumentation Works		303	02-Apr-14 A	01-Mar-15	24
Geotechnical Instrumentation Works for Seawalls		303	02-Apr-14 A	01-Mar-15	24
Cluster Type SA 2nrs Piezometer, Extensometer and Settlement Marker Cluster inside Cells		303	02-Apr-14 A	01-Mar-15	24
SA-1 K048 Portion B		274	02-Apr-14 A	31-Jan-15	-31
CTSA1-020	Montioring of SA-1 C048 PB by weekly for subsequent 10mths	274	02-Apr-14 A	31-Jan-15	-31
SA-2 C113 Portion C2a		303	02-Apr-14 A	01-Mar-15	24
CTSA2-020	Monitoring of SA-2 C113 PC2a by weekly for subsequent 10mths	303	02-Apr-14 A	01-Mar-15	24
Cluster Type SE 26nrs Surface movement marker cluster at top of cell and sloping seawall		7	08-Aug-14 A	15-Aug-14 A	
CTSE-120	Installation of SE-12 (C069) PE2	7	08-Aug-14 A	15-Aug-14 A	
CTSE-130	Installation of SE-13 (C071) PE1	7	08-Aug-14 A	15-Aug-14 A	
CTSE-140	Installation of SE-14 (C077) PE1	7	08-Aug-14 A	15-Aug-14 A	
CTSE-150	Installation of SE-15 (C079) PE1	7	08-Aug-14 A	15-Aug-14 A	
CTSE-160	Installation of SE-16 (C082) PE1	7	08-Aug-14 A	15-Aug-14 A	
CTSE-170	Installation of SE-17 (C087) PE1	7	08-Aug-14 A	15-Aug-14 A	
Geotechnical Instrumentation Works for Reclamation RA & RB		71	03-Sep-14	27-Nov-14	-10
RA		39	03-Sep-14	21-Oct-14	-26
CTRA-060	Installation of RA 6sets at PC1b	7	04-Sep-14	12-Sep-14	-126
CTRA-070	Installation of RA 4sets at PC2a	7	03-Sep-14	11-Sep-14	-97
CTRA-100	Installation of RA 6sets at PE2	7	14-Oct-14	21-Oct-14	-26
RB		38	04-Sep-14	21-Oct-14	-53
SMT1-060	Installation of RB at PC1b	7	04-Sep-14	12-Sep-14	-126
SMT1-110	Installation of RB at PE2	7	14-Oct-14	21-Oct-14	-53
Settlement Marker Type 2		70	04-Sep-14	27-Nov-14	-10
SMT2-060	M2 - Installation of Settlement Marker Type2 at PC1b	7	04-Sep-14	12-Sep-14	-126
SMT2-070	M2 - Installation of Settlement Marker Type2 at PC2a	7	06-Sep-14	15-Sep-14	-96
SMT2-100	M2 - Installation of Settlement Marker Type2 at PE1	7	20-Nov-14	27-Nov-14	-10
SMT2-110	M2 - Installation of Settlement Marker Type2 at PE2	7	06-Oct-14	13-Oct-14	-16
Portion D		214	22-May-14 A	20-Jan-15	814
Submission		0	21-Aug-14	21-Aug-14	967
Design Submission		0	21-Aug-14	21-Aug-14	967
Stability Analysis and Settlement Assessment for Vertical Seawall w No Dredging		0	21-Aug-14	21-Aug-14	967
PD-DGN-02010	Stability Analysis and settlement assessment for vertical seawall with no dredging	0		21-Aug-14*	967
Stability Analysis and Settlement Assessment for Sloping Seawall w No Dredging		0	21-Aug-14	21-Aug-14	967
PD-DGN-03010	Stability Analysis and Settlement Assessment for Sloping seawall with no dredging	0		21-Aug-14*	967
Settlement Assessment for Culverts C1 - C4 w No Dredging		0	21-Aug-14	21-Aug-14	967
PD-DGN-04010	Settlement assessment for box culverts C1 - C4 with no dredging	0		21-Aug-14*	967
Structural Analysis for Culverts C1 - C4 w Precast Method		0	21-Aug-14	21-Aug-14	-74
PD-DGN-05010	Structural analysis for Box Culverts C1 - C4 with Precast Method	0		21-Aug-14*	-74
Drainage Impact Assessment & Temporary Diversion (stg2 - for construction of box culvert EC1)		0	21-Aug-14	21-Aug-14	-74
PD-DGN-07010	Drainage Impact Assessment and Temporary Diversion (stage 2 - for construction of box	0		21-Aug-14*	-74



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

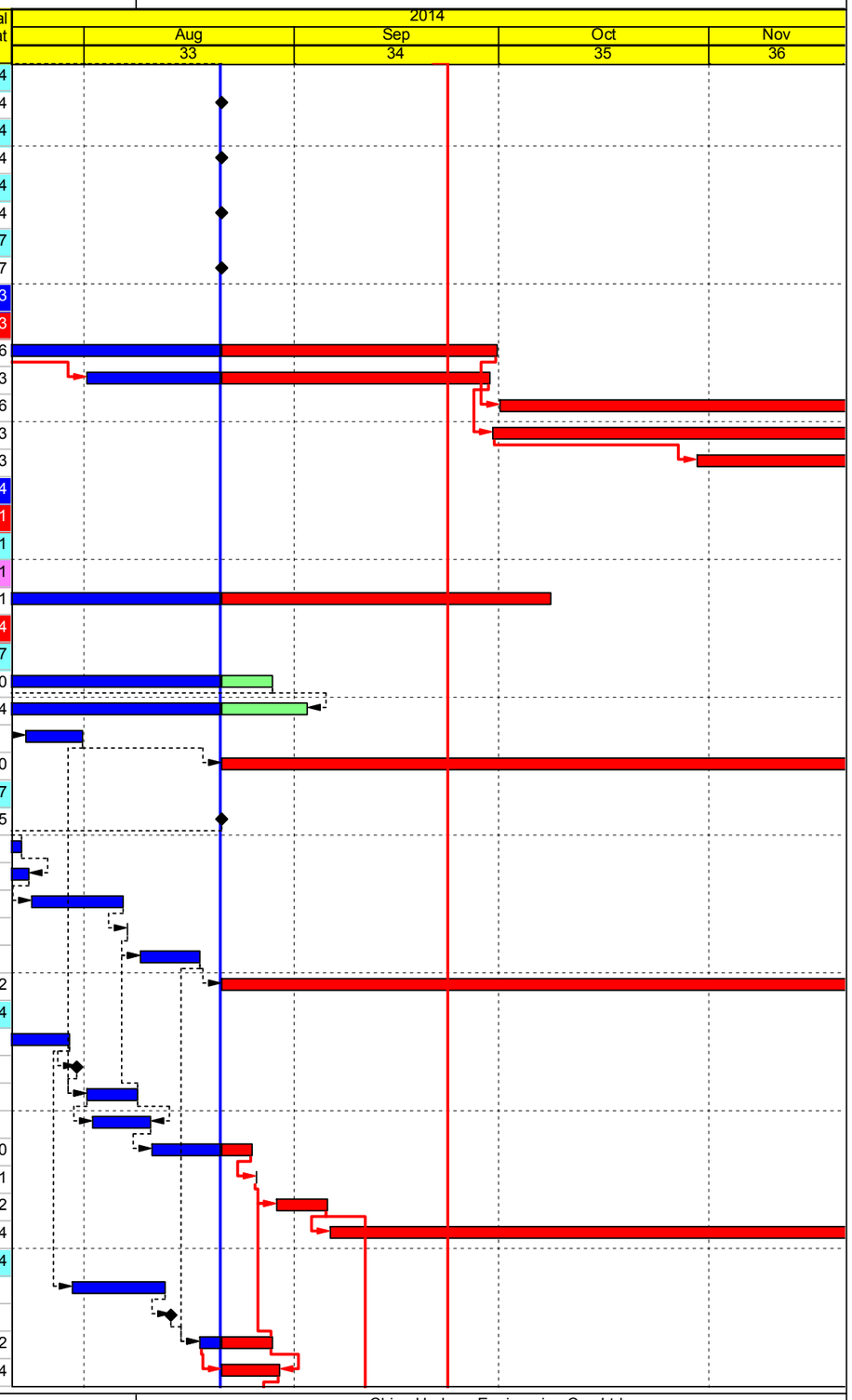
Contract No. HY/2010/02 Hong Kong - Zhuhai - Macao Bridge

Hong Kong Boundary Corssing Facilities - Reclamation Works

EMandA Quaterly Report Programme

Data Date :21-Aug-14

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Settlement Assessment for Box Culvert EC1		0	21-Aug-14	21-Aug-14	-74
PD-DGN-08010	Settlement Assessment for Box culvert EC1 Submission 1st	0		21-Aug-14*	-74
Structural Analysis for Box Culvert EC1 w Precast & Cast in-situ Method		0	21-Aug-14	21-Aug-14	-74
PD-DGN-09010	Structural Analysis for Box culvert EC1 with Precast and Cast in-situ Method	0		21-Aug-14*	-74
Detailed General Arrangement & RC drawings for C1 to C4 w Precast Method		0	21-Aug-14	21-Aug-14	-74
PD-DGN-10010	Detailed General Arrangement and RC drawings for Box culverts C1 to C4 with Precast	0		21-Aug-14*	-74
Detailed General Arrangement & RC drawings for EC1 w Precast & Cast insitu Methods		0	21-Aug-14	21-Aug-14	967
PD-DGN-11010	Detailed General Arrangement and RC drawings for Box Culverts EC1 with Precast and	0		21-Aug-14*	967
Precast Yard for Seawall Blocks & Culverts		180	02-Jul-14 A	28-Dec-14	-123
Culverts		180	02-Jul-14 A	28-Dec-14	-123
PD-PY-0210	Precast C1 6nrs	60	02-Jul-14 A	30-Sep-14	-146
PD-PY-0220	Precast EC1 10nrs	60	01-Aug-14 A	29-Sep-14	-123
PD-PY-0230	Precast C2 5nrs	60	01-Oct-14	29-Nov-14	-146
PD-PY-0240	Precast C3 5nrs	60	30-Sep-14	28-Nov-14	-123
PD-PY-0250	Precast C4 5nrs	60	30-Oct-14	28-Dec-14	-123
Site Construction		214	22-May-14 A	20-Jan-15	814
Seawall Construction		60	10-Jul-14 A	08-Oct-14	-31
Access at Portion D		60	10-Jul-14 A	08-Oct-14	-31
WaterMain Construction		60	10-Jul-14 A	08-Oct-14	-31
A30020	PD - Temp Watermain Construction along Access	60	10-Jul-14 A	08-Oct-14*	-31
Surcharge		214	22-May-14 A	20-Jan-15	814
West1 Portion		181	22-May-14 A	18-Dec-14	847
A1640	PD West1 - Surcharge Laying upto 8.5mPD 42,843m3 5,000m3/day outstanding	15	22-May-14 A	28-Aug-14	890
A1650	PD West1 - Surcharge compaction upto 8.5mPD	15	22-May-14 A	02-Sep-14	954
A1658	PD West1 - Surcharge Laying +11.5mPD 42,843m3 5,000m3/day	8	23-Jul-14 A	31-Jul-14 A	
A1660	PD West1 - Surcharge Period 4mths	120	21-Aug-14	18-Dec-14	-210
West2 Portion		156	16-Jul-14 A	18-Dec-14	847
A2194	PD West2 - Allow to surcharge upto 8.5mPD by result of Vent Shear Test	0		21-Aug-14	795
A2200	PD West2 - Surcharge Laying upto +8.5mPD 42,843m3 5,000m3/day outstanding	7	16-Jul-14 A	22-Jul-14 A	
A2210	PD West2 - Surcharge compaction upto 8.5mPD	7	17-Jul-14 A	23-Jul-14 A	
A2212	PD West2 - Vent Shear Test after +8.5mPD 6nrs	12	24-Jul-14 A	06-Aug-14 A	
A2216	PD West2 - Surcharge Pause Period 0mths	0	07-Aug-14 A	07-Aug-14 A	
A2218	PD West2 - Surcharge Laying +11.5mPD 42,843m3 5,000m3/day	8	09-Aug-14 A	18-Aug-14 A	
A2220	PD West2 - Surcharge Period 4mths	120	21-Aug-14	18-Dec-14	-182
East1 Portion		172	16-Jul-14 A	03-Jan-15	-164
A1672	PD East1 - Vent Shear Test 6nrs	12	16-Jul-14 A	29-Jul-14 A	
A1673	PD East1 - Allow to surcharge upto 8.5mPD by result of Vent Shear Test	0		30-Jul-14 A	
A1675	PD East1 - Surcharge Laying upto +8.5mPD 42,843m3 5,000m3/day outstanding	8	01-Aug-14 A	08-Aug-14 A	
A1680	PD East1 - Surcharge Compaction upto 8.5mPD	9	02-Aug-14 A	10-Aug-14 A	
A1682	PD East1 - Vent Shear Test after +8.5mPD 6nrs	4	11-Aug-14 A	25-Aug-14	-130
A1686	PD East1 - Surcharge Pause Period 0mths	0	26-Aug-14	26-Aug-14	-161
A1688	PD East1 - Surcharge Laying +11.5mPD 42,843m3 5,000m3/day	8	29-Aug-14	05-Sep-14	-152
A1690	PD East1 - Surcharge Period 4mths	120	06-Sep-14	03-Jan-15	-164
East2 Portion		175	30-Jul-14 A	20-Jan-15	-154
A2234	PD East2 - Vent Shear Test 6nrs	12	30-Jul-14 A	12-Aug-14 A	
A2236	PD East2 - Allow to surcharge upto 8.5 by result of Vent Shear Test	0		13-Aug-14 A	
A2240	PD East2 - Surcharge Laying upto +8.5mpD 42843m3 5,000m3/day	7	18-Aug-14 A	28-Aug-14	-152
A2250	PD East2 - Surcharge Compaction upto 8.5mPD	9	21-Aug-14	29-Aug-14	-154



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

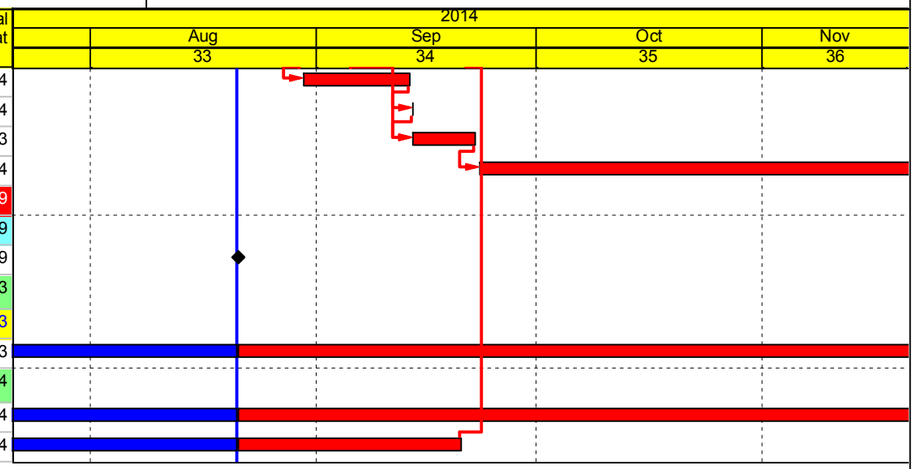
Contract No. HY/2010/02 Hong Kong - Zhuhai - Macao Bridge

Hong Kong Boundary Corssing Facilities - Reclamation Works

EMandA Quaterly Report Programme

Data Date :21-Aug-14

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
A2252	PD East2 - Vent Shear Test after +8.5mPD 6nrs	12	30-Aug-14	13-Sep-14	-124
A2256	PD East2 - Surcharge Pause Period 0mths	0	14-Sep-14	14-Sep-14	-154
A2258	PD East2 - Surcharge Laying +11.5mPD 42,843m3 5,000m3/day	8	14-Sep-14	22-Sep-14	-143
A2260	PD East2 - Surcharge Period 4mths	120	23-Sep-14	20-Jan-15	-154
Box Culvert Construction		0	21-Aug-14	21-Aug-14	-9
Extension Culvert EC1		0	21-Aug-14	21-Aug-14	-9
EC1-0005	The Area of EC1 handback by HY/2011/03	0	21-Aug-14*		-9
Works Area WA2 (Tung Chung)		1431	21-May-12 A	27-Mar-17	-23
Zone A		1431	21-May-12 A	27-Mar-17	-23
A1880	Maintenance of Engineer's Accommodation	1431	21-May-12 A	27-Mar-17	-23
Works Area TKO Fill Bank		1251	25-Sep-12 A	29-Dec-16	-24
WA-TKO-1040	Operate and Maintain Public Fill Sorting Facilities in Zone A, B1 & B2	1251	25-Sep-12 A	29-Dec-16	-24
WA-TKO-1050	Maintainance of Site in Zone C	568	25-Sep-12 A	20-Sep-14	-24



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

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 than 2.4m high should be provided as far as practicable along the site boundary	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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 system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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; • 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 construction sites	N/A

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• 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 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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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 EIA report at all construction sites	V
S6.4.14 of HKBCFEIA	N5	Sequencing operation of construction plants where practicable.	All construction sites where practicable	V
S5.1 of	N6	Implement a noise monitoring under EM&A programme.	Selected	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
TMCLKLEIA			representative noise monitoring station	
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; • 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;	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• 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 TMCLKLEIA	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 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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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 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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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 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	All construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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.		
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:	During filling	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• 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 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		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		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 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	W2	<u>Land Works</u> General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include:	All land-based construction sites	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
TMCLKLEIA		• wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; • sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including 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		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; • all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit; • wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel; • 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;		

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• 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 and S6.10 of TMCLKLEIA	W3	Implement a water quality monitoring programme	At identified monitoring location	V
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	Seawall, reclamation area	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		• Good site practices • Strict enforcement of no marine dumping • Site runoff control • Spill response plan		
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
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	E6	• Control vessel speed	Marine traffic	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
HKBCFEIA and S8.14 of TMCLKLEIA		• Skipper training • Predefined and regular routes for working vessels; avoid Brothers Islands		
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 • Strict enforcement of no marine dumping • Spill response plan	Seawall, reclamation area	V
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	All construction site areas	N/A

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Location	Implementation Status
		rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of new coastline.		
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				
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 $\mu g/m^3$	500 $\mu g/m^3$
AMS3A*	368 $\mu g/m^3$	500 $\mu g/m^3$
AMS6	360 $\mu g/m^3$	500 $\mu g/m^3$
AMS7	370 $\mu g/m^3$	500 $\mu g/m^3$

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 $\mu g/m^3$	260 $\mu g/m^3$
AMS3A*	167 $\mu g/m^3$	260 $\mu g/m^3$
AMS6	173 $\mu g/m^3$	260 $\mu g/m^3$
AMS7	183 $\mu g/m^3$	260 $\mu g/m^3$

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)]	

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Tung Chung Development Pier (AMS2)	Operator:	Cheung Hung Wai
Cal. Date:	5-Aug-14	Next Due Date:	5-Oct-14
Equipment No.:	A-001-78T	Serial No.	3383

Ambient Condition			
Temperature, Ta (K)	303	Pressure, Pa (mmHg)	752.2

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.97518	Intercept, bc	-0.01001
Last Calibration Date:	28-May-14	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	28-May-15	**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	2.93	1.49	48.0	47.36
13	7.4	2.68	1.36	44.0	43.41
10	5.8	2.38	1.21	38.0	37.49
7	4.0	1.97	1.00	31.0	30.58
5	2.8	1.65	0.84	24.0	23.68

By Linear Regression of Y on X

Slope , mw = **36.4726** **Intercept, bw =** **-6.5601**

Correlation Coefficient* = **0.9983**

*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)]$^{1/2}$= **41.41**

Remarks:

QC Reviewer: WS CHAN Signature: Date: 6/8/14

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Site Boundary of Site Office (WA2) (AMS3B)	Operator:	Leung Yiu Ting
Cal. Date:	30-Jul-14	Next Due Date:	30-Sep-14
Equipment No.:	A-001-79T	Serial No.	3384

Ambient Condition			
Temperature, Ta (K)	303	Pressure, Pa (mmHg)	754.3

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.97518	Intercept, bc	-0.01001
Last Calibration Date:	28-May-14	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-May-15	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	8.8	2.93	1.49	50.0	49.40
13	7.0	2.61	1.33	42.0	41.50
10	5.1	2.23	1.13	34.0	33.59
7	4.1	2.00	1.02	29.0	28.65
5	2.5	1.56	0.80	19.0	18.77

By Linear Regression of Y on X

Slope , mw = **43.6838** **Intercept, bw =** **-15.9935**

Correlation Coefficient* = **0.9992**

*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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2}$ = **41.29**

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 30/7/14

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Hong Kong SkyCity Marriott Hotel (AMS7)	Operator:	Cheung Hung Wai
Cal. Date:	5-Aug-14	Next Due Date:	5-Oct-14
Equipment No.:	A-001-80T	Serial No.	3385

Ambient Condition			
Temperature, Ta (K)	303	Pressure, Pa (mmHg)	752.2

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	1.97518	Intercept, bc	-0.01001
Last Calibration Date:	28-May-14	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	28-May-15	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

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	7.6	2.72	1.38	47.0	46.37
13	6.5	2.52	1.28	41.0	40.45
10	5.0	2.21	1.12	33.0	32.56
7	4.0	1.97	1.00	28.0	27.63
5	3.1	1.74	0.88	21.0	20.72

By Linear Regression of Y on X

Slope , mw = **50.4676** **Intercept, bw =** **-23.6983**

Correlation Coefficient* = **0.9979**

*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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **42.48**

Remarks:

QC Reviewer: NS CHAN Signature: Date: 6/8/14

TISCH Environmental

TISCH ENVIRONMENTAL, INC.
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VILLAGE OF CLEVES, OH
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877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 28, 2014 Rootsmeter S/N 0438320 Ta (K) - 296
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	1.3790	3.2	2.00
2	NA	NA	1.00	0.9720	6.4	4.00
3	NA	NA	1.00	0.8690	7.9	5.00
4	NA	NA	1.00	0.8260	8.8	5.50
5	NA	NA	1.00	0.6830	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9917	0.7191	1.4113		0.9957	0.7221	0.8874
0.9875	1.0159	1.9959		0.9915	1.0201	1.2549
0.9854	1.1339	2.2315		0.9894	1.1385	1.4030
0.9843	1.1916	2.3405		0.9883	1.1965	1.4715
0.9790	1.4333	2.8227		0.9829	1.4392	1.7747
Qstd slope (m) =		1.97518		Qa slope (m) =		1.23683
intercept (b) =		-0.01001		intercept (b) =		-0.00630
coefficient (r) =		0.99998		coefficient (r) =		0.99998
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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*:	*10 May 2014*		

*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	*11-05-14*	*09:30 - 10:30*	*26.7*	*75*	*0.04434*	*1775*	*29.58*
2	*11-05-14*	*10:30 - 11:30*	*26.7*	*75*	*0.04716*	*1880*	*31.33*
3	*11-05-14*	*11:30 - 12:30*	*26.8*	*76*	*0.04927*	*1964*	*32.73*
4	*11-05-14*	*12:30 - 13:30*	*26.8*	*75*	*0.05035*	*2015*	*33.58*

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: *0.9982*

Validity of Calibration Record: *11 May 2015*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 12 May 2014

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*:	*10 May 2014*		

*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	*11-05-14*	*09:45 - 10:45*	*26.7*	*75*	*0.04568*	*1713*	*28.50*
2	*11-05-14*	*10:45 - 11:45*	*26.7*	*75*	*0.04857*	*1819*	*30.32*
3	*11-05-14*	*11:45 - 12:45*	*26.8*	*76*	*0.05063*	*1903*	*31.72*
4	*11-05-14*	*12:45 - 13:45*	*26.8*	*75*	*0.05116*	*1922*	*32.03*

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: *0.9984*

Validity of Calibration Record: *11 May 2015*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 12 May 2014

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*:	*10 May 2014*		

*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	*11-05-14*	*13:30 - 14:30*	*26.8*	*75*	*0.05034*	*2017*	*33.62*
2	*11-05-14*	*14:30 - 15:30*	*26.9*	*76*	*0.05211*	*2084*	*34.73*
3	*11-05-14*	*15:30 - 16:30*	*26.9*	*76*	*0.05163*	*2066*	*34.43*
4	*11-05-14*	*16:30 - 17:30*	*26.9*	*76*	*0.05272*	*2113*	*35.22*

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: *0.9965*

Validity of Calibration Record: *11 May 2015*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 12 May 2014

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*:	*10 May 2014*		

*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	*11-05-14*	*13:45 - 14:45*	*26.8*	*75*	*0.04984*	*1996*	*33.27*
2	*11-05-14*	*14:45 - 15:45*	*26.9*	*76*	*0.05196*	*2077*	*34.62*
3	*11-05-14*	*15:45 - 16:45*	*26.9*	*76*	*0.05141*	*2055*	*34.25*
4	*11-05-14*	*16:45 - 17:45*	*26.9*	*76*	*0.05263*	*2109*	*35.15*

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: *0.9969*

Validity of Calibration Record: *11 May 2015*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 12 May 2014

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*:	*10 May 2014*		

*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	*18-05-14*	*09:00 - 10:00*	*28.3*	*77*	*0.04527*	*1815*	*30.25*
2	*18-05-14*	*10:00 - 11:00*	*28.3*	*77*	*0.04811*	*1923*	*32.05*
3	*18-05-14*	*11:00 - 12:00*	*28.3*	*77*	*0.05103*	*2041*	*34.02*
4	*18-05-14*	*12:00 - 13:00*	*28.4*	*77*	*0.05366*	*2157*	*35.95*

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: *0.9987*

Validity of Calibration Record: *18 May 2015*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 19 May 2014

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*: *10 May 2014*

*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	*18-05-14*	*09:30 - 10:30*	*28.3*	*77*	*0.04614*	*1846*	*30.77*
2	*18-05-14*	*10:30 - 11:30*	*28.3*	*77*	*0.04823*	*1934*	*32.23*
3	*18-05-14*	*11:30 - 12:30*	*28.3*	*77*	*0.05152*	*2053*	*34.22*
4	*18-05-14*	*12:30 - 13:30*	*28.4*	*77*	*0.05391*	*2162*	*36.03*

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: *0.9981*

Validity of Calibration Record: *18 May 2015*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 19 May 2014

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*:	*10 May 2014*		

*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	*18-05-14*	*12:45 - 13:45*	*28.4*	*77*	*0.05027*	*2158*	*35.97*
2	*18-05-14*	*13:45 - 14:45*	*28.5*	*76*	*0.05161*	*2211*	*36.85*
3	*18-05-14*	*14:45 - 15:45*	*28.5*	*76*	*0.05235*	*2247*	*37.45*
4	*18-05-14*	*15:45 - 16:45*	*28.4*	*77*	*0.05203*	*2233*	*37.22*

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: *0.9969*

Validity of Calibration Record: *18 May 2015*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 19 May 2014

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
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Tel : (852) 2873 6860
Fax : (852) 2555 7533
HOKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 13CA1107 01-02 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-73
Serial/Equipment No.:	10307223 / N.004.08
Adaptors used:	-

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	07-Nov-2013

Date of test: 08-Nov-2013

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	17-Apr-2014	SCL
Preamplifier	B&K 2673	2239857	16-Apr-2014	CEPREI
Measuring amplifier	B&K 2610	2346941	24-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	CEPREI
Digital multi-meter	34401A	US36087050	10-Dec-2013	CEPREI
Audio analyzer	8903B	GB41300350	15-Apr-2014	CEPREI
Universal counter	53132A	MY40003662	15-Apr-2014	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:** 11-Nov-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.

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. Tel : (852) 2873 6860
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓 Fax : (852) 2555 7533
E-mail: smec@cigismec.com Website: www.cigismec.com
HOKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 13CA1107 01-01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	Rion Co., Ltd.	,	Rion Co., Ltd.
Type/Model No.:	NL-31	,	UC-53A
Serial/Equipment No.:	00320528 / N.007.03A	,	90565
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	07-Nov-2013

Date of test: 08-Nov-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-2014	CIGISMEC
Signal generator	DS 360	33873	15-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	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:** 11-Nov-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.
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Tel : (852) 2873 6860
Fax : (852) 2555 7533
HOKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0305 06-01 **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 N.009.04	,	2250420
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO. LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	05-Mar-2014

Date of test: 07-Mar-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	22-Jun-2014	CIGISMEC
Signal generator	DS 360	33873	15-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	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:** 12-Mar-2014 **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.

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1421424
Date of Issue: 23/07/2014
Client: AECOM ASIA COMPANY LIMITED

Description: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V1
Serial No.: W.026.09
Equipment No.: W.026.09
Date of Calibration: 08 July, 2014 Date of next Calibration: 08 October, 2014

Parameters:

Conductivity **Method Ref: APHA (20th edition), 2510B**

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	142.5	-3.0
6667	6651	-0.2
12890	12740	-1.2
58670	58210	-0.8
	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	3.52	-0.03
5.90	5.88	-0.02
7.75	7.72	-0.03
	Tolerance Limit (mg/L)	±0.20

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.1	+2.5
10	10.1	+1.0
20	20.2	+1.0
50	50.4	+0.8
100	100.3	+0.3
	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: HK1421424
Date of Issue: 23/07/2014
Client: AECOM ASIA COMPANY LIMITED

Description: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V1
Serial No.: W.026.09
Equipment No.: W.026.09
Date of Calibration: 08 July, 2014 Date of next Calibration: 08 October, 2014

Parameters:

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

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0	0.01	--
10	10.04	+0.4
20	19.63	-1.9
30	29.89	-0.4
	Tolerance Limit (%)	±10.0

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

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)
14.0	14.07	+0.1
25.0	25.09	+0.1
39.0	39.04	+0.0
	Tolerance Limit (°C)	±2.0

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: HK1421422
Date of Issue: 23/07/2014
Client: AECOM ASIA COMPANY LIMITED

Description: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V1
Serial No.: 04F11451
Equipment No.: W.026.31
Date of Calibration: 08 July, 2014 Date of next Calibration: 08 October, 2014

Parameters:

Conductivity **Method Ref: APHA (20th edition), 2510B**

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	150.1	+2.2
6667	6711	+0.7
12890	12786	-0.8
58670	57900	-1.3
	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	3.51	-0.04
5.90	5.85	-0.05
7.75	7.69	-0.06
	Tolerance Limit (mg/L)	±0.20

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.1	+2.5
10	10.2	+2.0
20	20.2	+1.0
50	50.6	+1.2
100	100.5	+0.5
	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: HK1421422
Date of Issue: 23/07/2014
Client: AECOM ASIA COMPANY LIMITED

Description: Sonde Environmental Monitoring System
Brand Name: YSI
Model No.: 6820 V1
Serial No.: 04F11451
Equipment No.: W.026.31
Date of Calibration: 08 July, 2014 Date of next Calibration: 08 October, 2014

Parameters:

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

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0	0.00	--
10	10.02	+0.2
20	20.04	+0.2
30	30.01	+0.0
	Tolerance Limit (%)	±10.0

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

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)
14.0	14.11	+0.1
25.0	25.06	+0.1
39.0	38.95	-0.0
	Tolerance Limit (°C)	±2.0

pH Value **Method Ref: APHA (21st edition), 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.05	+0.05
7.0	7.03	+0.03
10.0	9.95	-0.05
	Tolerance Limit (pH Unit)	±0.20

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 Water Quality Monitoring Schedule for August 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Aug	2-Aug
					Mid-Flood 9:39 Mid-Ebb 16:03	
3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug
	Mid-Flood 12:54 Mid-Ebb 18:36 24-hour TSP 1-hour TSP Noise Dolphin Monitoring		Mid-Ebb 8:58 Mid-Flood 16:20	Dolphin Monitoring	Mid-Ebb 10:55 Mid-Flood 18:12	24-hour TSP 1-hour TSP
10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug
	Mid-Flood 6:35 Mid-Ebb 13:19		Mid-Flood 8:18 Mid-Ebb* 14:48		Mid-Flood 10:06 Mid-Ebb 16:13 24-hour TSP 1-hour TSP Noise	
17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug
	Mid-Ebb 7:11 Mid-Flood 13:50		Mid-Ebb 9:41 Mid-Ebb 17:11	24-hour TSP 1-hour TSP Noise	Mid-Ebb 11:18 Mid-Flood 18:21	
24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug
	Mid-Ebb 13:04 Mid-Flood 19:36 Dolphin Monitoring	Dolphin Monitoring	Mid-Flood 7:34 Mid-Ebb 14:05 24-hour TSP^ 1-hour TSP Noise	24-hour TSP^	Mid-Flood 8:49 Mid-Ebb 15:04	

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

^Due to electricity failure, the 24-hr TSP monitoring at AMS7 scheduled on 26-27 August 2014 was rescheduled to 27-28 August 2014.

*The scheduled water quality monitoring at mid-ebb (13 August 2014) has been cancelled due to thunderstorm Signal is hoisted and lightning event was recorded at the water quality monitoring area.

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

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep
	Mid-Flood 11:21 Mid-Ebb 17:05	24-hour TSP 1-hour TSP Noise	Mid-Ebb 6:56 Mid-Flood 14:46		Mid-Ebb 9:33 Mid-Flood 17:04	24-hour TSP 1-hour TSP
7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep
	Mid-Ebb 12:13 Mid-Flood 19:00		Mid-Flood 7:21 Mid-Ebb 13:42		Mid-Flood 9:04 Mid-Ebb 15:05 24-hour TSP 1-hour TSP Noise	
14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep
	Mid-Flood 12:07 Mid-Ebb 17:23 Dolphin Monitoring	Dolphin Monitoring	Mid-Ebb 7:26 Mid-Flood 20:18	24-hour TSP 1-hour TSP Noise	Mid-Ebb 10:00 Mid-Flood 17:18	
21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep
	Mid-Ebb 12:02 Mid-Flood 18:27		Mid-Ebb 13:06 Mid-Flood 19:13 24-hour TSP 1-hour TSP Noise		Mid-Flood 8:03 Mid-Ebb 14:09	
28-Sep	29-Sep	30-Sep				
	Mid-Flood 10:20 Mid-Ebb 16:05 Dolphin Monitoring	24-hour TSP 1-hour TSP Noise Dolphin Monitoring				

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

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 ($\mu g/m^3$)
4-Aug-14	1st Hour	Sunny	1.4	10:21	76	374	500
4-Aug-14	2nd Hour	Sunny	1.0	11:21	76	374	500
4-Aug-14	3rd Hour	Sunny	1.0	12:21	73	374	500
9-Aug-14	1st Hour	Sunny	2.0	11:53	80	374	500
9-Aug-14	2nd Hour	Sunny	1.0	12:53	78	374	500
9-Aug-14	3rd Hour	Sunny	0.6	13:53	78	374	500
15-Aug-14	1st Hour	Sunny	1.4	10:15	84	374	500
15-Aug-14	2nd Hour	Sunny	1.0	11:15	86	374	500
15-Aug-14	3rd Hour	Sunny	1.1	12:15	83	374	500
21-Aug-14	1st Hour	Sunny	1.6	9:55	85	374	500
21-Aug-14	2nd Hour	Sunny	0.4	10:55	87	374	500
21-Aug-14	3rd Hour	Sunny	0.3	11:55	83	374	500
27-Aug-14	1st Hour	Fine	4.6	10:18	82	374	500
27-Aug-14	2nd Hour	Fine	5.2	11:18	81	374	500
27-Aug-14	3rd Hour	Fine	4.7	12:18	80	374	500
				Average	81		
				Min	73		
				Max	87		

1-hour TSP Monitoring Results at Station AMS3B - 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 ($\mu g/m^3$)
4-Aug-14	1st Hour	Sunny	1.4	10:30	73	368	500
4-Aug-14	2nd Hour	Sunny	1.0	11:30	76	368	500
4-Aug-14	3rd Hour	Sunny	1.0	12:30	72	368	500
9-Aug-14	1st Hour	Sunny	1.0	12:10	79	368	500
9-Aug-14	2nd Hour	Sunny	0.6	13:10	78	368	500
9-Aug-14	3rd Hour	Sunny	0.6	14:10	79	368	500
15-Aug-14	1st Hour	Sunny	1.4	10:25	84	368	500
15-Aug-14	2nd Hour	Sunny	1.0	11:25	85	368	500
15-Aug-14	3rd Hour	Sunny	1.1	12:25	86	368	500
21-Aug-14	1st Hour	Sunny	1.6	10:10	86	368	500
21-Aug-14	2nd Hour	Sunny	0.4	11:10	86	368	500
21-Aug-14	3rd Hour	Sunny	0.3	12:10	87	368	500
27-Aug-14	1st Hour	Fine	4.6	10:10	80	368	500
27-Aug-14	2nd Hour	Fine	5.2	11:10	79	368	500
27-Aug-14	3rd Hour	Fine	4.7	12:10	79	368	500
				Average	81		
				Min	72		
				Max	87		

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 ($\mu g/m^3$)
4-Aug-14	1st Hour	Sunny	1.4	10:09	73	370	500
4-Aug-14	2nd Hour	Sunny	1.0	11:09	75	370	500
4-Aug-14	3rd Hour	Sunny	1.0	12:09	74	370	500
9-Aug-14	1st Hour	Sunny	2.0	11:30	77	370	500
9-Aug-14	2nd Hour	Sunny	1.0	12:30	77	370	500
9-Aug-14	3rd Hour	Sunny	0.6	13:30	78	370	500
15-Aug-14	1st Hour	Sunny	1.4	10:00	87	370	500
15-Aug-14	2nd Hour	Sunny	1.0	11:00	88	370	500
15-Aug-14	3rd Hour	Sunny	1.1	12:00	88	370	500
21-Aug-14	1st Hour	Sunny	1.6	9:45	89	370	500
21-Aug-14	2nd Hour	Sunny	0.4	10:45	90	370	500
21-Aug-14	3rd Hour	Sunny	0.3	11:45	87	370	500
27-Aug-14	1st Hour	Fine	4.6	10:40	81	370	500
27-Aug-14	2nd Hour	Fine	5.2	11:40	79	370	500
27-Aug-14	3rd Hour	Fine	4.7	12:40	79	370	500
				Average	81		
				Min	73		
				Max	90		

Due to electricity failure, the 24-hr TSP monitoring at AMS7 scheduled on 26-27 August 2014 was rescheduled to 27-28 August 2014.

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.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight(g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
4-Aug-14	9:00	5-Aug-14	9:00	Sunny	30.2	1002.4	1.33	1.33	1.33	1912.3	2.7300	2.7862	0.0562	3749.84	3773.84	24.00	29	176	260
8-Aug-14	16:00	9-Aug-14	16:00	Sunny	30.1	1004.4	1.33	1.33	1.33	1912.3	2.6912	2.7867	0.0955	3773.84	3797.84	24.00	50	176	260
14-Aug-14	16:00	15-Aug-14	16:00	Fine	30.7	1010.1	1.33	1.33	1.33	1912.3	2.6831	2.7245	0.0414	3797.84	3821.84	24.00	22	176	260
20-Aug-14	16:00	21-Aug-14	16:00	Sunny	30.7	1010.7	1.33	1.33	1.33	1912.3	2.7017	2.7354	0.0337	3821.84	3845.84	24.00	18	176	260
26-Aug-14	16:00	27-Aug-14	16:00	Sunny	31.7	1010.6	1.33	1.33	1.33	1912.3	2.6728	2.7169	0.0441	3845.84	3869.84	24.00	23	176	260
																Average	28		
																Min	18		
																Max	50		

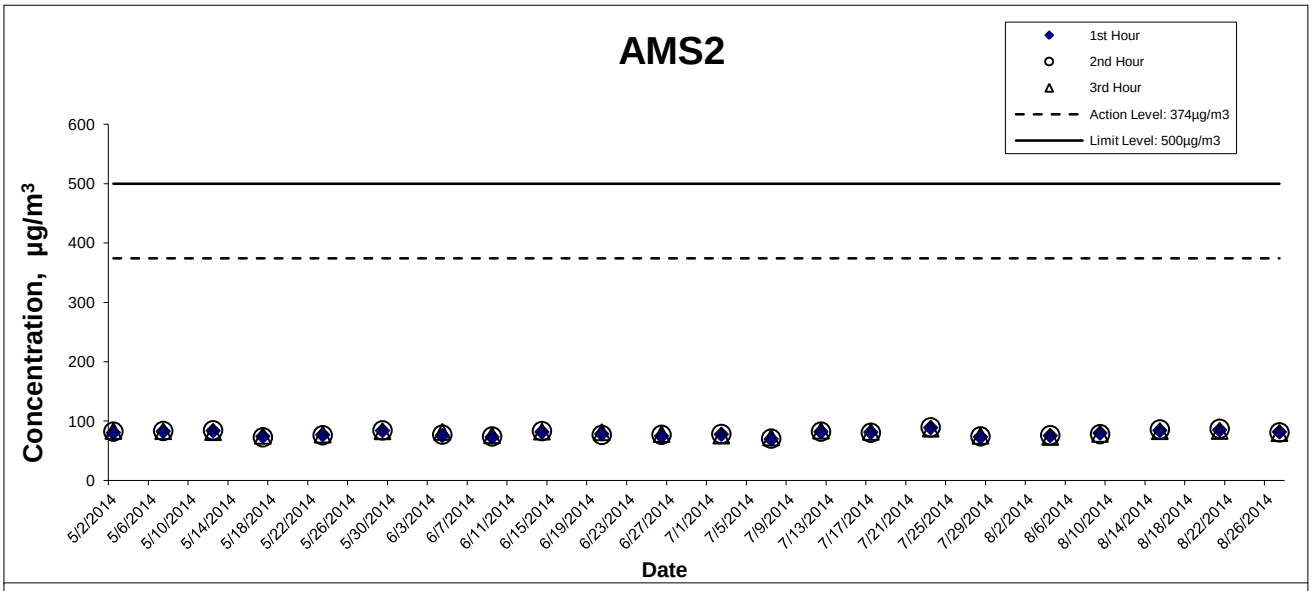
24-hour TSP Monitoring Results at Station AMS3B - Site Boundary of Site Office (WA2)

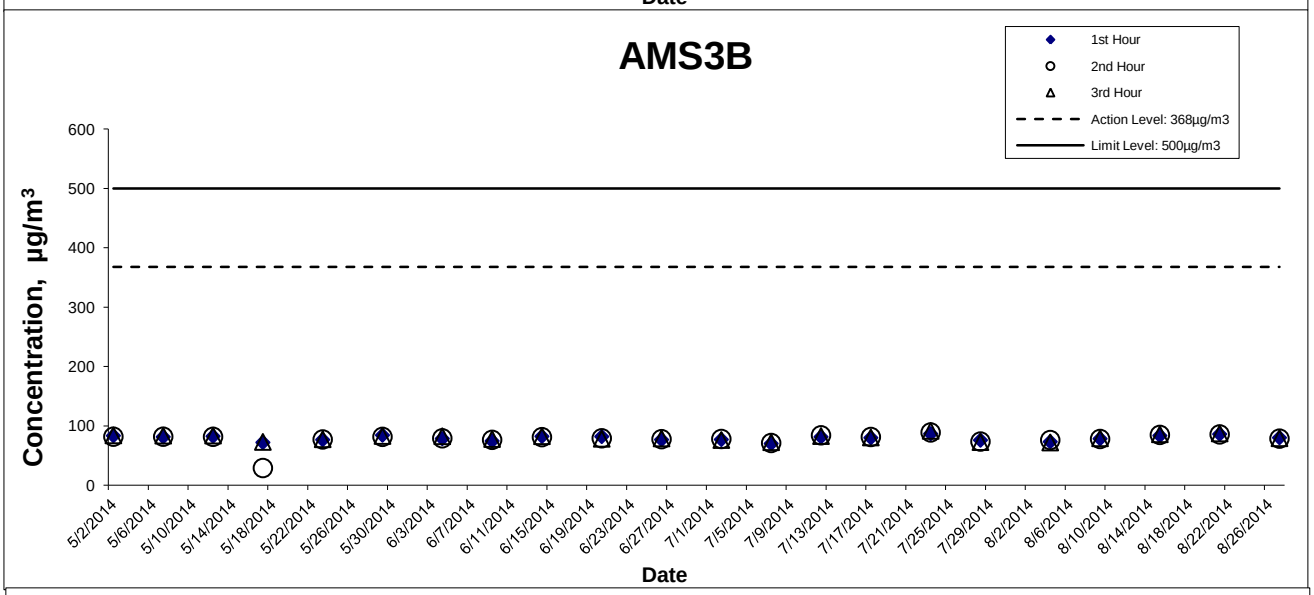
Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight(g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
4-Aug-14	9:00	5-Aug-14	9:00	Sunny	30.2	1002.4	1.34	1.34	1.34	1923.8	2.7245	2.7706	0.0461	3685.80	3709.80	24.00	24	167	260
8-Aug-14	16:00	9-Aug-14	16:00	Sunny	30.1	1004.4	1.34	1.34	1.34	1923.8	2.7149	2.7466	0.0317	3709.80	3733.80	24.00	16	167	260
14-Aug-14	16:00	15-Aug-14	16:00	Fine	30.7	1010.1	1.34	1.34	1.34	1923.8	2.6888	2.8274	0.1386	3733.80	3757.80	24.00	72	167	260
20-Aug-14	16:00	21-Aug-14	16:00	Sunny	30.7	1010.7	1.34	1.34	1.34	1923.8	2.7250	2.8068	0.0818	3757.80	3781.80	24.00	43	167	260
26-Aug-14	16:00	27-Aug-14	16:00	Sunny	31.7	1010.6	1.34	1.34	1.34	1923.8	2.6788	2.7603	0.0815	3781.80	3805.80	24.00	42	167	260
																Average	39		
																Min	16		
																Max	72		

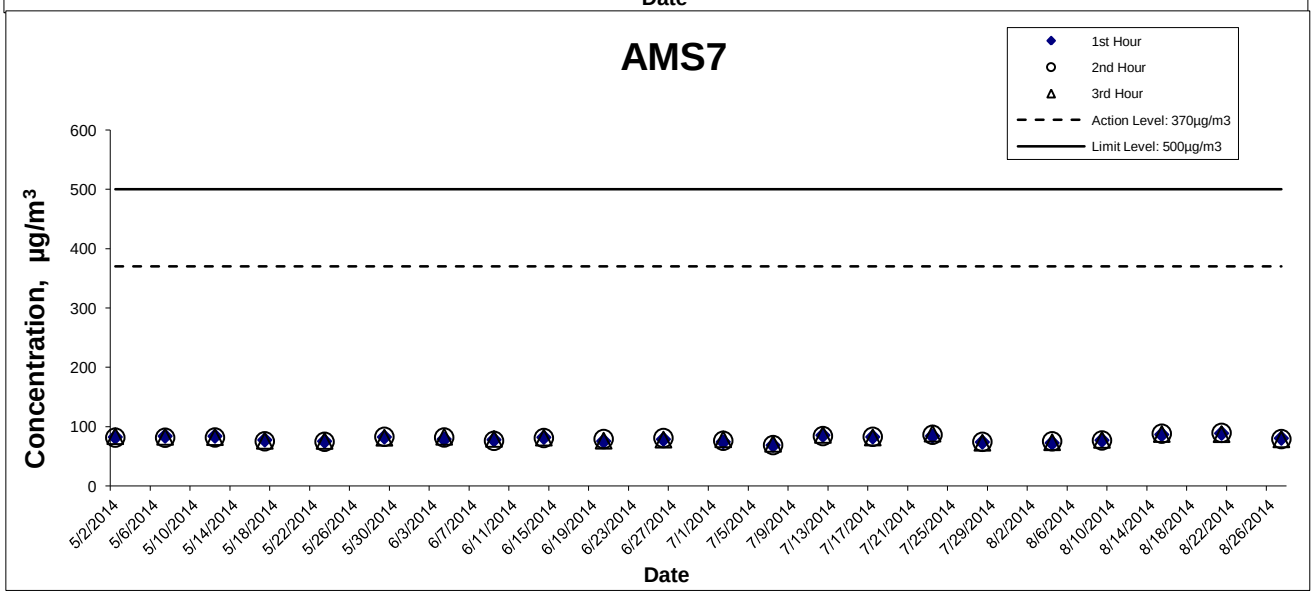
^ Action Level set out at AMS3 Ho Yu College is adopted.

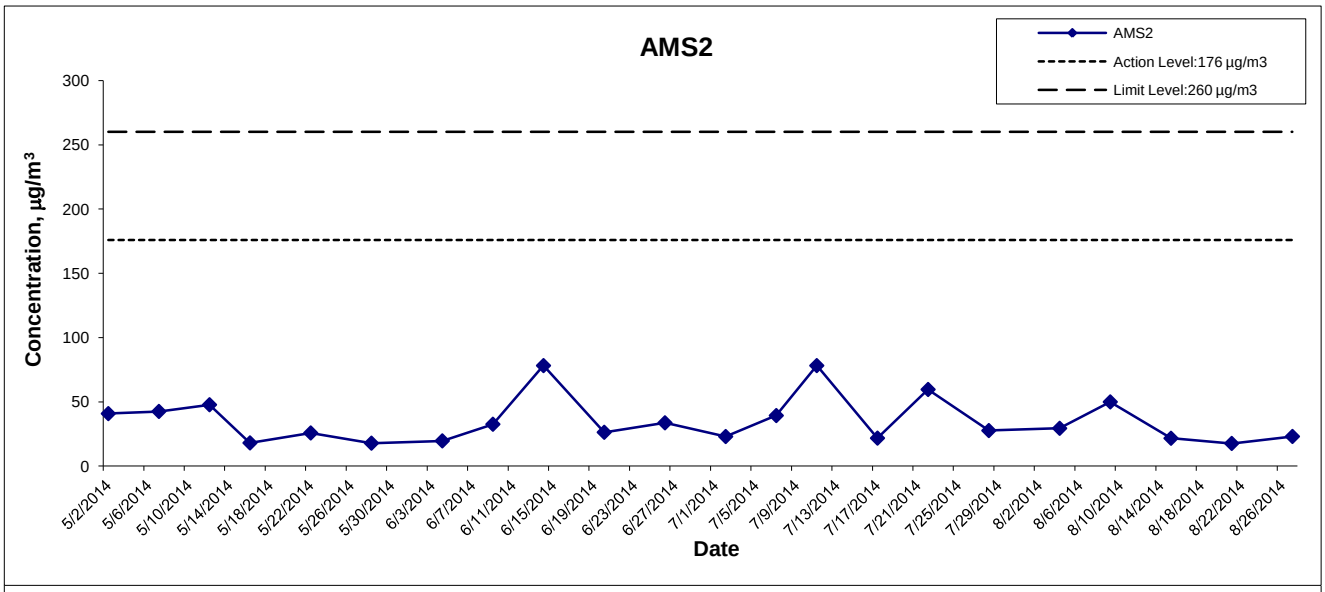
24-hour TSP Monitoring Results at Station AMS7 - Hong Kong SkyCity Marriott Hotel

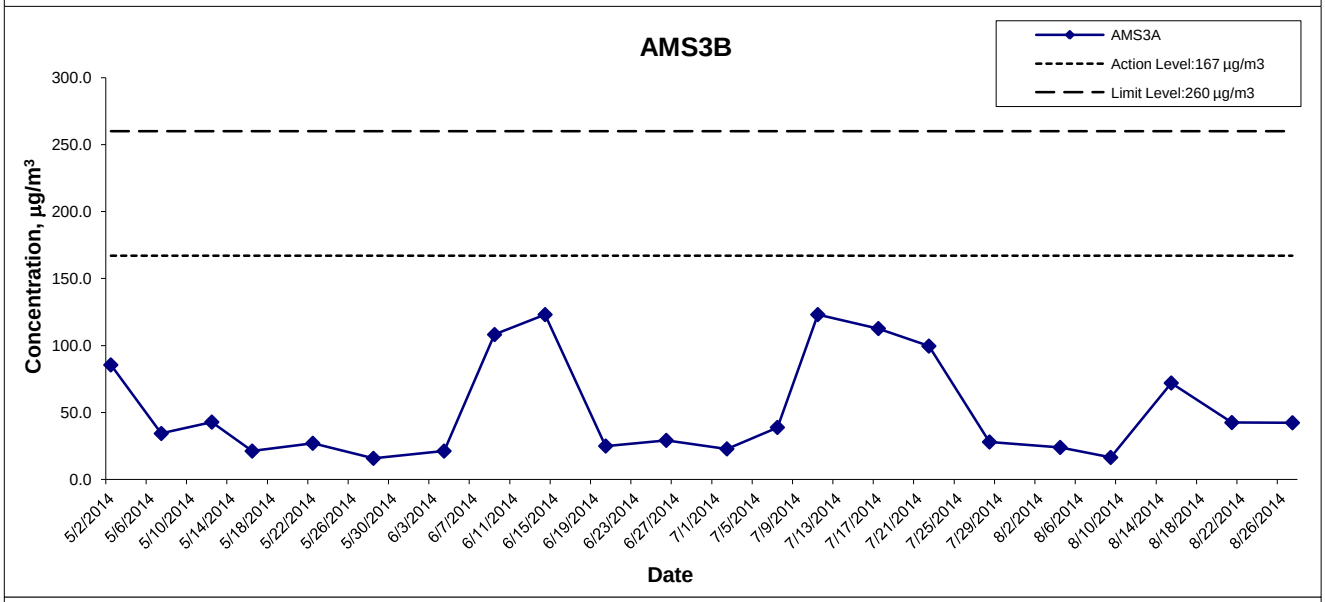
Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight(g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
4-Aug-14	9:00	5-Aug-14	9:00	Sunny	30.2	1002.4	1.34	1.34	1.34	1925.3	2.7177	2.7793	0.0616	3707.98	3731.98	24.00	32	183	260
8-Aug-14	16:00	9-Aug-14	16:00	Sunny	30.1	1004.4	1.30	1.30	1.30	1869.1	2.7224	2.7686	0.0462	3731.98	3755.98	24.00	25	183	260
14-Aug-14	16:00	15-Aug-14	16:00	Fine	30.7	1010.1	1.30	1.30	1.30	1869.1	2.6940	2.7564	0.0624	3755.98	3779.98	24.00	33	183	260
20-Aug-14	16:00	21-Aug-14	16:00	Sunny	30.7	1010.7	1.30	1.30	1.30	1869.1	2.7200	2.7598	0.0398	3779.98	3803.98	24.00	21	183	260
27-Aug-14	16:00	28-Aug-14	16:00	Sunny	29.1	1012.1	1.30	1.30	1.30	1869.1	2.6688	2.7511	0.0823	3803.98	3827.98	24.00	44	183	260
																Average	31		
																Min	21		
																Max	44		

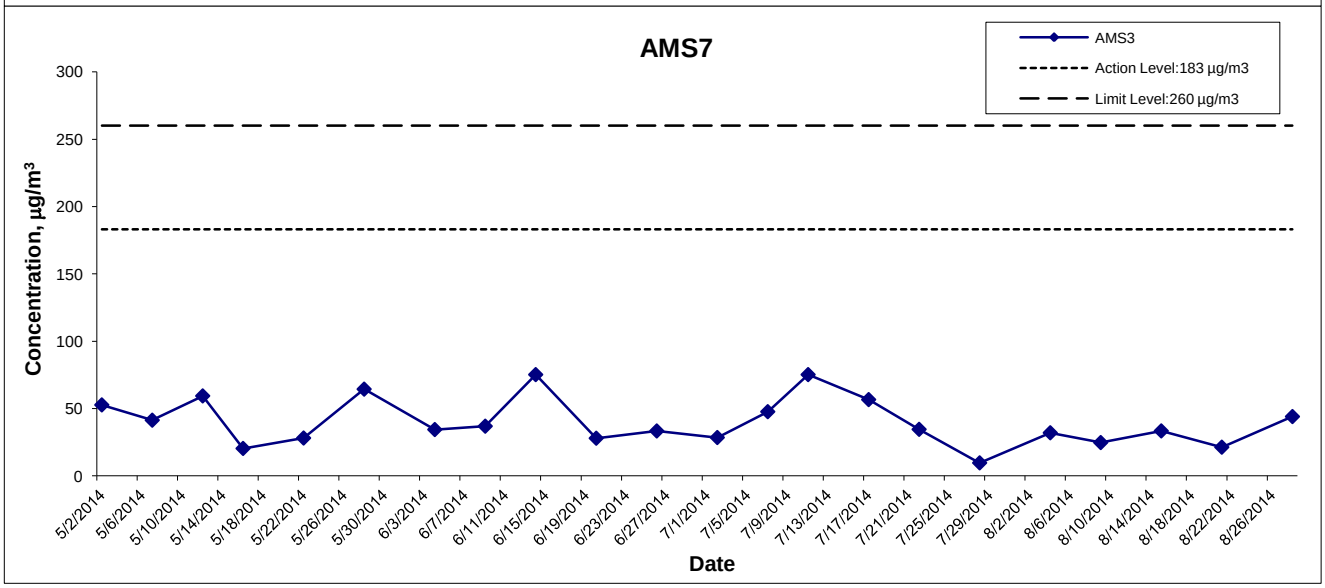












HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

AECOM

Graphical Presentation of Impact 24-hour TSP Monitoring Results

Project No.: 60249820 **Date: September 2014** **Appendix G**

APPENDIX H Meteorological Data for Monitoring Periods on Monitoring Dates in August 2014

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
08/04/14	09:10:50	0.57	113
08/04/14	10:10:50	1.43	99
08/04/14	11:10:50	0.99	130
08/04/14	11:54:28	-0.78	45
08/04/14	12:54:28	1.02	174
08/04/14	13:54:28	0.49	194
08/04/14	14:54:28	0.14	125
08/04/14	15:54:28	0.11	99
08/04/14	16:54:28	0.10	88
08/04/14	17:54:28	1.37	202
08/04/14	18:54:28	0.10	192
08/04/14	19:54:28	0.80	96
08/04/14	20:54:28	0.11	65
08/04/14	21:54:28	1.64	130
08/04/14	22:54:28	0.15	7
08/04/14	23:54:28	0.03	189
08/05/14	00:54:28	0.71	181
08/05/14	01:54:28	-0.03	199
08/05/14	02:54:28	-0.10	175
08/05/14	03:54:28	-0.01	138
08/05/14	04:54:28	-0.11	160
08/05/14	05:54:28	-0.11	131
08/05/14	06:54:28	-0.10	167
08/05/14	07:54:28	-0.08	99
08/05/14	08:54:28	0.18	108
08/05/14	09:54:28	0.22	162
08/08/14	16:54:28	3.01	275
08/08/14	17:54:28	1.17	336
08/08/14	18:54:28	2.81	275
08/08/14	19:54:28	1.40	344
08/08/14	20:54:28	0.97	73
08/08/14	21:54:28	1.24	354
08/08/14	22:54:28	1.34	329
08/08/14	23:54:28	0.83	331
08/09/14	00:54:28	1.44	336
08/09/14	01:54:28	1.11	7
08/09/14	02:54:28	0.99	268
08/09/14	03:54:28	0.87	290
08/09/14	04:54:28	0.91	139
08/09/14	05:54:28	0.88	28
08/09/14	06:54:28	1.37	290
08/09/14	07:54:28	1.17	28
08/09/14	08:54:28	3.25	320
08/09/14	09:54:28	1.57	322
08/09/14	10:54:28	1.90	305
08/09/14	11:54:28	2.00	300
08/09/14	12:54:28	0.98	338
08/09/14	13:54:28	0.59	261
08/09/14	14:54:28	0.56	337
08/09/14	15:54:28	1.50	107
08/09/14	16:54:28	1.68	319
08/14/14	16:54:28	1.57	316
08/14/14	17:54:28	3.57	334
08/14/14	18:54:28	1.65	275
08/14/14	19:54:28	3.13	272
08/14/14	20:54:28	0.76	350
08/14/14	21:54:28	1.05	310
08/14/14	22:54:28	0.73	279
08/14/14	23:54:28	0.73	315
08/15/14	00:54:28	0.67	278
08/15/14	01:54:28	0.64	267
08/15/14	02:54:28	0.69	273
08/15/14	03:54:28	0.76	100
08/15/14	04:54:28	0.84	153
08/15/14	05:54:28	0.90	285
08/15/14	06:54:28	0.64	89
08/15/14	07:54:28	0.77	126
08/15/14	08:54:28	0.45	113
08/15/14	09:54:28	0.71	116
08/15/14	10:54:28	1.37	126
08/15/14	11:54:28	0.98	307
08/15/14	12:54:28	1.06	313
08/15/14	13:54:28	0.69	235
08/15/14	14:54:28	2.85	313
08/15/14	15:54:28	0.15	11
08/15/14	16:54:28	0.59	340
08/20/14	16:54:28	0.73	148
08/20/14	17:54:28	0.80	154
08/20/14	18:54:28	0.55	236
08/20/14	19:54:28	0.45	256
08/20/14	20:54:28	0.57	134
08/20/14	21:54:28	0.53	253
08/20/14	22:54:28	0.66	223
08/20/14	23:54:28	0.34	231
08/21/14	00:54:28	0.62	296
08/21/14	01:54:28	0.56	258
08/21/14	02:54:28	0.62	248
08/21/14	03:54:28	0.63	116
08/21/14	04:54:28	0.62	239

APPENDIX H Meteorological Data for Monitoring Periods on Monitoring Dates in August 2014

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
08/21/14	05:54:28	0.66	283
08/21/14	06:54:28	0.70	190
08/21/14	07:54:28	0.36	275
08/21/14	08:54:28	1.05	132
08/21/14	09:54:28	1.58	139
08/21/14	10:54:28	0.41	141
08/21/14	11:54:28	0.25	215
08/21/14	12:54:28	0.84	141
08/21/14	13:54:28	0.27	88
08/21/14	14:54:28	0.55	216
08/21/14	15:54:28	0.74	274
08/21/14	16:54:28	2.85	285
08/21/14	17:54:28	0.21	326
08/21/14	18:54:28	0.62	31
08/21/14	19:54:28	0.63	172
08/21/14	20:54:28	0.24	267
08/21/14	21:54:28	0.24	65
08/21/14	22:54:28	0.21	308
08/21/14	23:54:28	0.14	171
08/22/14	00:54:28	0.21	63
08/22/14	01:54:28	0.07	300
08/22/14	02:54:28	0.06	158
08/22/14	03:54:28	0.08	248
08/22/14	04:54:28	0.59	147
08/22/14	05:54:28	0.03	280
08/22/14	06:54:28	0.31	288
08/22/14	07:54:28	0.03	57
08/22/14	08:54:28	0.36	47
08/22/14	09:54:28	0.83	133
08/22/14	10:54:28	0.29	134
08/22/14	11:54:28	0.63	128
08/22/14	12:54:28	0.53	77
08/22/14	13:54:28	0.25	60
08/22/14	14:54:28	0.36	145
08/22/14	15:54:28	0.56	90
08/22/14	16:54:28	1.34	336
08/26/14	16:54:28	0.45	198
08/26/14	17:54:28	0.20	108
08/26/14	18:54:28	1.43	168
08/26/14	19:54:28	1.38	135
08/26/14	20:54:28	0.94	142
08/26/14	21:54:28	0.43	119
08/26/14	22:54:28	1.66	164
08/26/14	23:54:28	0.10	147
08/27/14	00:54:28	0.25	141
08/27/14	01:54:28	2.14	176
08/27/14	02:54:28	1.89	183
08/27/14	03:54:28	3.51	149
08/27/14	04:54:28	1.13	145
08/27/14	05:54:28	0.32	172
08/27/14	06:54:28	3.57	147
08/27/14	07:54:28	0.34	139
08/27/14	08:54:28	0.41	65
08/27/14	09:54:28	1.99	159
08/27/14	10:54:28	4.55	160
08/27/14	11:54:28	5.16	149
08/27/14	12:54:28	4.74	144
08/27/14	13:54:28	3.78	172
08/27/14	14:54:28	6.74	166
08/27/14	15:54:28	4.85	166
08/27/14	16:54:28	7.54	179
08/27/14	17:54:28	1.73	124
08/27/14	18:54:28	4.81	161
08/27/14	19:54:28	2.57	136
08/27/14	20:54:28	1.38	137
08/27/14	21:54:28	1.16	93
08/27/14	22:54:28	2.87	158
08/27/14	23:54:28	0.60	183
08/28/14	00:54:28	2.64	139
08/28/14	01:54:28	1.36	155
08/28/14	02:54:28	2.71	132
08/28/14	03:54:28	1.65	112
08/28/14	04:54:28	0.35	105
08/28/14	05:54:28	1.62	192
08/28/14	06:54:28	3.34	140
08/28/14	07:54:28	2.67	170
08/28/14	08:54:28	0.69	165
08/28/14	09:54:28	4.31	135
08/28/14	10:54:28	1.09	165
08/28/14	11:54:28	2.63	144
08/28/14	12:54:28	3.02	128
08/28/14	13:54:28	4.90	149
08/28/14	14:54:28	2.31	144
08/28/14	15:54:28	4.83	163
08/28/14	16:54:28	5.09	182

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				
4-Aug-14	Sunny	10:45	62	68	66	<5m/s	62.9	75	N
15-Aug-14	Sunny	10:50	63	68	66	<5m/s	62.9	75	N
21-Aug-14	Sunny	10:40	63	70	67	<5m/s	62.9	75	N
27-Aug-14	Fine	10:45	65	70	67	<5m/s	62.9	75	N
		Min	62	68	66				
		Max	65	70	67				
		Average	--	--	66				

Daytime Noise Monitoring Results at Station NMS3B - 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				
4-Aug-14	Sunny	11:28	61	65	64	<5m/s	66.3	70	N
15-Aug-14	Sunny	11:30	60	64	63	<5m/s	66.3	70	N
21-Aug-14	Sunny	11:25	60	64	63	<5m/s	66.3	70	N
27-Aug-14	Fine	13:50	62	67	65	<5m/s	66.3	70	N
		Min	60	64	63				
		Max	62	67	65				
		Average	--	--	64				

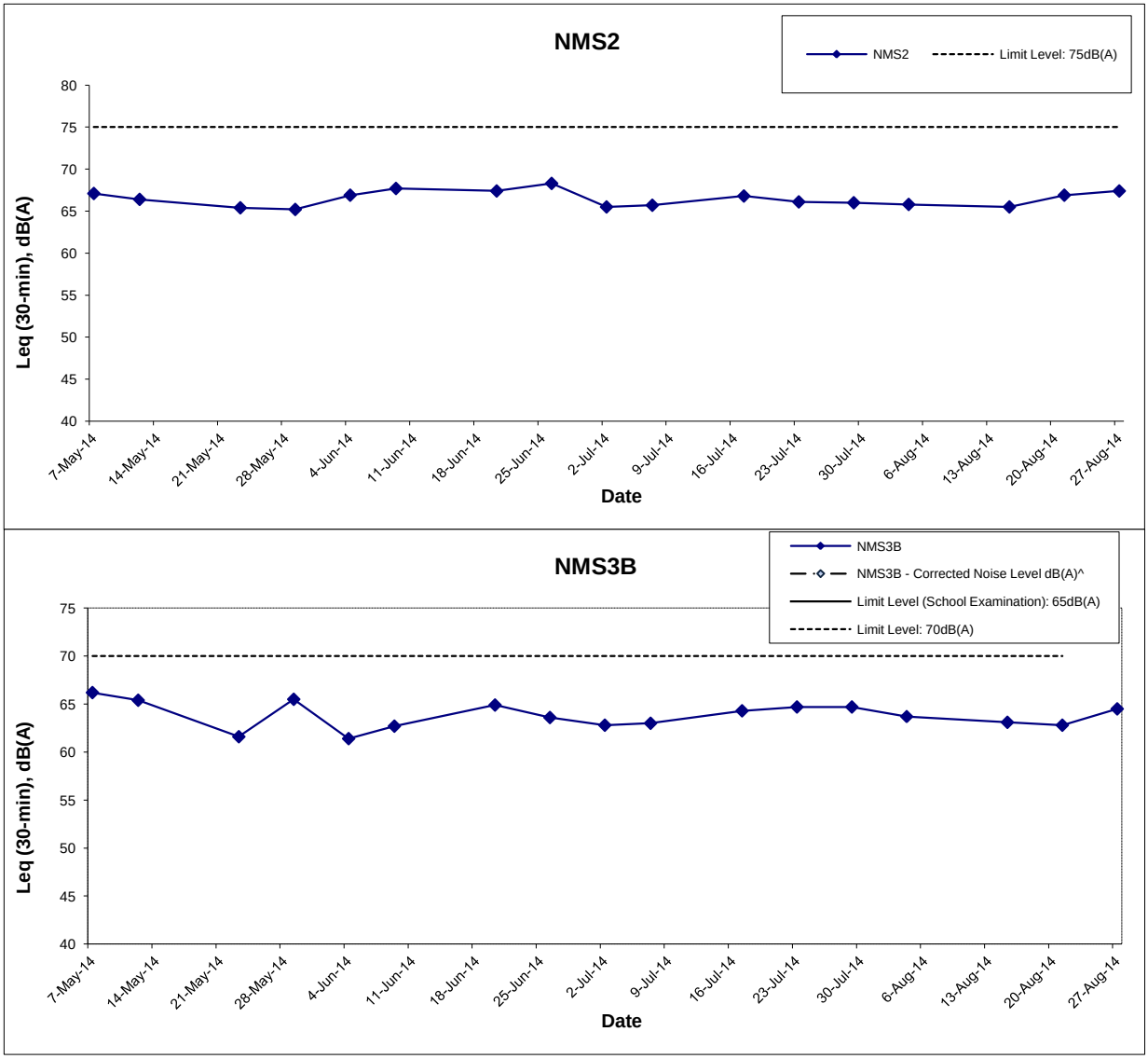
Remark:

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*
1-Aug-14	Sunny	Moderate	15:29	6.5	Surface	1.0	29.9 29.6	29.7	8.2 8.2	8.2	15.7 15.9	15.8	90.4 90.1	90.3	6.3 6.3	6.3	6.2	2.5 2.3	2.4	2.6	2.4 2.3	2.4	2.5
					Middle	3.3	29.2 29.2	29.2	8.1 8.2	8.2	19.0 18.7	18.9	86.9 85.7	86.3	6.0 5.9	6.0		2.6 2.6	2.6		2.3 2.0	2.2	
					Bottom	5.5	28.9 29.3	29.1	8.1 8.1	8.1	21.9 22.2	22.0	87.3 90.1	88.7	6.0 6.1	6.0	6.0	2.7 2.6	2.7		2.8 3.0	2.9	
4-Aug-14	Sunny	Moderate	18:07	5.9	Surface	1.0	30.3 31.4	30.8	8.3 8.3	8.3	14.8 13.8	14.3	74.9 75.9	75.4	5.4 5.7	5.5	5.5	6.5 6.6	6.6	6.5	2.0 2.2	2.1	2.4
					Middle	3.0	29.5 29.7	29.6	8.3 8.3	8.3	17.0 16.9	16.9	74.3 73.1	73.7	5.5 5.3	5.4		6.2 6.5	6.4		2.4 2.4	2.4	
					Bottom	4.9	27.9 28.4	28.1	8.2 8.2	8.2	24.8 23.4	24.1	78.5 75.2	76.9	5.9 5.6	5.8	5.8	6.3 6.4	6.4		2.1 3.1	2.6	
6-Aug-14	Sunny	Moderate	09:28	6.3	Surface	1.0	29.3 29.3	29.3	8.4 8.4	8.4	16.3 16.5	16.4	101.5 99.3	100.4	7.1 6.9	7.0	6.4	3.2 3.4	3.3	4.3	6.0 5.9	6.0	6.2
					Middle	3.2	29.4 29.2	29.3	8.3 8.3	8.3	20.1 20.8	20.5	85.2 83.8	84.5	5.8 5.7	5.8		3.8 4.0	3.9		5.9 6.2	6.1	
					Bottom	5.3	26.6 26.6	26.6	8.1 8.1	8.1	29.5 29.6	29.5	77.7 74.6	76.2	5.3 5.1	5.2	5.2	5.5 5.7	5.6		6.4 6.5	6.5	
8-Aug-14	Sunny	Moderate	11:43	6.5	Surface	1.0	29.4 29.4	29.4	8.2 8.2	8.2	16.1 16.1	16.1	80.8 81.2	81.0	5.7 5.7	5.7	5.4	2.7 2.8	2.8	3.4	2.1 2.1	2.1	2.7
					Middle	3.3	28.6 28.7	28.7	8.2 8.2	8.2	19.1 18.9	19.0	73.3 73.9	73.6	5.1 5.2	5.1		3.8 3.7	3.8		2.6 2.6	2.6	
					Bottom	5.5	27.1 27.0	27.0	8.1 8.1	8.1	26.6 26.7	26.6	74.5 70.2	72.4	5.1 4.8	5.0	5.0	3.6 3.5	3.6		3.3 3.2	3.3	
11-Aug-14	Sunny	Moderate	12:46	6.3	Surface	1.0	29.2 29.0	29.1	8.1 8.1	8.1	21.8 22.0	21.9	88.7 85.9	87.3	6.4 6.3	6.4	6.3	5.3 5.4	5.4	6.6	5.4 5.0	5.2	6.8
					Middle	3.2	28.3 28.4	28.3	8.0 8.0	8.0	22.9 22.8	22.9	82.5 82.8	82.7	6.1 6.1	6.1		6.8 6.6	6.7		6.5 6.7	6.6	
					Bottom	5.3	28.0 28.0	28.0	8.0 8.0	8.0	24.3 24.1	24.2	82.5 83.0	82.8	6.1 6.1	6.1	6.1	7.7 7.7	7.7		8.5 8.5	8.5	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	-	- -	-	-
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	15:58	6.6	Surface	1.0	29.3 29.4	29.3	8.0 8.0	8.0	19.1 19.1	19.1	79.0 79.6	79.3	5.4 5.5	5.5	5.3	5.1 5.2	5.2	5.8	3.4 3.2	3.3	4.7
					Middle	3.3	29.3 28.9	29.1	8.0 8.0	8.0	19.3 19.4	19.4	73.7 73.1	73.4	5.1 5.1	5.1		5.6 5.8	5.7		5.0 5.2	5.1	
					Bottom	5.6	28.0 27.9	28.0	7.9 7.9	7.9	22.1 22.1	22.1	69.5 68.5	69.0	4.8 4.8	4.8	4.8	6.7 6.5	6.6		5.9 5.3	5.6	
18-Aug-14	Sunny	Moderate	07:37	6.4	Surface	1.0	29.1 29.1	29.1	8.0 7.9	8.0	13.9 13.9	13.9	83.0 84.3	83.7	5.9 6.0	6.0	5.8	3.5 3.4	3.5	3.5	3.0 3.1	3.1	3.2
					Middle	3.2	28.5 28.7	28.6	7.9 7.8	7.9	16.6 18.1	17.4	77.2 79.4	78.3	5.5 5.6	5.5		3.5 3.4	3.5		2.6 3.2	2.9	
					Bottom	5.4	28.3 28.2	28.2	7.9 7.7	7.8	20.8 21.0	20.9	79.1 79.8	79.5	5.5 5.6	5.5	5.5	3.5 3.5	3.5		3.6 3.6	3.6	
20-Aug-14	Rainy	Moderate	10:04	6.4	Surface	1.0	28.6 28.6	28.6	8.1 8.1	8.1	13.2 13.2	13.2	95.8 94.1	95.0	6.9 6.8	6.8	6.4	3.1 3.2	3.2	3.3	4.3 3.6	4.0	3.9
					Middle	3.2	28.5 28.5	28.5	8.1 8.0	8.1	13.8 13.9	13.9	80.4 82.3	81.4	5.8 5.9	5.9		3.1 3.0	3.1		3.9 3.9	3.9	
					Bottom	5.4	27.2 27.5	27.3	7.9 7.9	7.9	25.3 22.9	24.1	71.4 74.8	73.1	4.9 5.2	5.1	5.1	3.8 3.4	3.6		4.0 3.8	3.9	

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)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*
22-Aug-14	Sunny	Moderate	11:49	6.3	Surface	1.0	29.7 29.6	29.6	7.9 7.9	7.9	10.9 10.9	10.9	82.3 82.7	82.5	5.9 5.9	5.9	5.8	3.8 3.6	3.7	4.2	3.0 2.9	3.0	3.4
					Middle	3.2	29.2 29.1	29.1	7.9 7.9	7.9	12.8 12.9	12.9	78.8 78.4	78.6	5.6 5.6	5.6		3.4 3.7	3.6		3.6 3.3	3.5	
					Bottom	5.3	26.9 27.1	27.0	7.9 7.9	7.9	20.9 20.1	20.5	75.3 76.3	75.8	5.4 5.5	5.4	5.4	5.1 5.3	5.2		3.5 3.9	3.7	
25-Aug-14	Sunny	Moderate	13:32	6.4	Surface	1.0	29.3 29.6	29.4	8.1 8.1	8.1	16.7 16.5	16.6	76.5 76.7	76.6	5.3 5.3	5.3	5.2	3.0 3.1	3.1	4.0	1.5 1.6	1.6	1.8
					Middle	3.2	27.7 28.3	28.0	8.1 8.1	8.1	20.7 18.0	19.3	72.8 73.0	72.9	5.1 5.2	5.1		4.5 4.3	4.4		1.8 1.5	1.7	
					Bottom	5.4	27.7 27.2	27.5	8.0 8.0	8.0	21.0 23.2	22.1	73.1 69.0	71.1	5.1 4.8	5.0	5.0	4.5 4.5	4.5		1.9 2.2	2.1	
27-Aug-14	Sunny	Moderate	14:03	6.1	Surface	1.0	27.7 27.8	27.7	8.1 8.1	8.1	20.9 20.4	20.7	73.6 79.4	76.5	5.5 5.9	5.7	5.7	4.5 4.5	4.5	4.6	4.4 3.9	4.2	4.8
					Middle	3.1	27.4 27.5	27.4	8.1 8.1	8.1	23.0 22.8	22.9	78.7 74.4	76.6	5.8 5.6	5.7		4.2 4.7	4.5		4.1 4.3	4.2	
					Bottom	5.1	27.3 27.4	27.4	8.1 8.1	8.1	23.4 23.3	23.3	74.1 77.2	75.7	5.5 5.9	5.7	5.7	4.5 4.8	4.7		6.1 6.0	6.1	
29-Aug-14	Sunny	Moderate	14:30	6.5	Surface	1.0	28.6 28.7	28.7	8.1 8.1	8.1	21.0 20.8	20.9	84.9 84.7	84.8	5.9 5.8	5.8	5.8	6.2 6.6	6.4	7.8	4.8 4.9	4.9	4.6
					Middle	3.3	28.3 28.2	28.2	8.1 8.1	8.1	21.7 22.2	21.9	82.4 83.1	82.8	5.7 5.7	5.7		8.3 7.9	8.1		3.7 3.9	3.8	
					Bottom	5.5	27.2 27.2	27.2	8.0 8.0	8.0	24.3 24.5	24.4	80.2 80.5	80.4	5.6 5.6	5.6	5.6	8.9 9.0	9.0		5.3 4.6	5.0	

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*
1-Aug-14	Sunny	Moderate	09:49	6.7	Surface	1.0	29.5 29.6	29.6	8.1 8.1	8.1	16.9 16.0	16.5	81.0 80.5	80.8	5.6 5.6	5.6	5.5	3.5 3.4	3.5	3.6	1.3 1.8	1.6	2.6
					Middle	3.4	29.2 29.1	29.1	8.1 8.1	8.1	20.7 19.4	20.0	77.8 77.1	77.5	5.3 5.3	5.3		3.5 3.6	3.6		3.0 3.0	3.0	
					Bottom	5.7	28.5 28.6	28.6	8.1 8.0	8.1	23.4 23.3	23.3	77.1 75.5	76.3	5.3 5.2	5.2	5.2	3.6 3.5	3.6		2.8 3.3	3.1	
4-Aug-14	Sunny	Moderate	13:10	6.6	Surface	1.0	29.7 29.8	29.8	8.3 8.3	8.3	14.8 14.0	14.4	77.5 77.8	77.7	5.8 5.8	5.8	5.8	6.5 6.5	6.5	6.4	2.2 2.3	2.3	2.5
					Middle	3.3	29.4 29.5	29.4	8.2 8.2	8.2	19.5 19.4	19.4	75.2 76.4	75.8	5.5 5.8	5.7		6.6 6.4	6.5		2.3 2.8	2.6	
					Bottom	5.6	27.9 27.7	27.8	8.2 8.2	8.2	25.3 25.4	25.4	74.6 71.5	73.1	5.5 5.3	5.4	5.4	6.3 6.2	6.3		2.7 2.7	2.7	
6-Aug-14	Sunny	Moderate	15:51	6.6	Surface	1.0	29.5 29.6	29.6	8.3 8.3	8.3	14.3 14.1	14.2	99.4 96.4	97.9	7.0 6.8	6.9	6.2	4.8 4.6	4.7	5.9	3.2 3.3	3.3	4.2
					Middle	3.3	28.5 29.2	28.9	8.2 8.2	8.2	24.5 21.7	23.1	76.5 81.6	79.1	5.2 5.6	5.4		4.7 5.4	5.1		4.9 4.7	4.8	
					Bottom	5.6	26.8 26.7	26.8	8.1 8.1	8.1	28.2 28.4	28.3	77.9 74.4	76.2	5.3 5.0	5.2	5.2	7.8 8.2	8.0		4.6 4.4	4.5	
8-Aug-14	Sunny	Moderate	17:41	6.3	Surface	1.0	30.0 30.1	30.1	8.1 8.1	8.1	15.8 15.8	15.8	85.8 87.4	86.6	5.9 6.1	6.0	5.7	5.6 5.7	5.7	6.9	3.3 2.9	3.1	3.4
					Middle	3.2	29.7 29.9	29.8	8.1 8.1	8.1	17.1 17.0	17.1	76.3 77.0	76.7	5.3 5.3	5.3		7.6 7.4	7.5		3.5 3.2	3.4	
					Bottom	5.3	27.8 27.9	27.9	8.1 8.1	8.1	22.9 22.7	22.8	74.7 76.1	75.4	5.2 5.3	5.2	5.2	7.6 7.6	7.6		3.8 3.4	3.6	
11-Aug-14	Sunny	Moderate	06:42	6.5	Surface	1.0	28.0 28.0	28.0	8.1 8.1	8.1	23.6 23.5	23.6	80.6 78.5	79.6	5.9 5.8	5.9	5.9	15.6 15.3	15.5	16.6	14.7 14.8	14.8	20.1
					Middle	3.3	27.9 27.9	27.9	8.1 8.1	8.1	23.7 23.8	23.8	78.7 82.4	80.6	5.8 6.1	5.9		16.4 16.6	16.5		22.4 22.3	22.4	
					Bottom	5.5	27.9 27.9	27.9	8.1 8.1	8.1	23.8 23.8	23.8	87.6 79.5	83.6	6.4 5.9	6.1	6.1	17.8 17.7	17.8		23.1 23.1	23.1	
13-Aug-14	Rainy	Moderate	08:32	7.2	Surface	1.0	28.0 27.9	27.9	8.0 8.0	8.0	22.2 22.7	22.5	99.4 89.7	94.6	6.8 6.2	6.5	6.4	7.7 7.9	7.8	8.1	7.7 7.5	7.6	7.1
					Middle	3.6	27.8 27.8	27.8	8.0 8.0	8.0	23.1 23.4	23.3	87.6 93.3	90.5	6.1 6.4	6.2		8.0 8.1	8.1		6.3 6.6	6.5	
					Bottom	6.2	27.9 27.9	27.9	8.0 8.0	8.0	23.5 24.1	23.8	91.7 86.1	88.9	6.3 6.0	6.1	6.1	8.5 8.0	8.3		7.2 7.1	7.2	
15-Aug-14	Sunny	Moderate	10:23	6.4	Surface	1.0	28.4 28.4	28.4	7.9 7.9	7.9	20.0 20.0	20.0	70.3 69.7	70.0	4.9 4.9	4.9	4.8	5.8 5.6	5.7	6.2	5.4 5.4	5.4	6.4
					Middle	3.2	27.8 27.8	27.8	7.9 7.9	7.9	22.3 22.3	22.3	67.9 67.6	67.8	4.7 4.7	4.7		6.2 6.2	6.2		6.1 6.3	6.2	
					Bottom	5.4	27.7 27.7	27.7	7.9 7.9	7.9	22.8 22.7	22.7	65.4 65.4	65.4	4.5 4.5	4.5	4.5	6.7 6.8	6.8		7.5 7.6	7.6	
18-Aug-14	Sunny	Moderate	13:16	6.4	Surface	1.0	29.4 29.4	29.4	8.0 8.0	8.0	14.3 14.1	14.2	85.1 86.6	85.9	6.0 6.1	6.1	5.7	4.3 4.5	4.4	4.5	3.0 2.6	2.8	2.7
					Middle	3.2	28.9 28.6	28.7	8.0 8.0	8.0	19.1 17.9	18.5	77.9 74.6	76.3	5.4 5.2	5.3		4.4 4.5	4.5		2.7 2.9	2.8	
					Bottom	5.4	27.5 27.8	27.6	7.9 7.9	7.9	23.6 23.7	23.7	75.2 74.0	74.6	5.2 5.1	5.2	5.2	4.6 4.6	4.6		2.6 2.6	2.6	
20-Aug-14	Rainy	Moderate	16:37	6.3	Surface	1.0	28.7 28.7	28.7	8.1 8.1	8.1	13.5 11.6	12.6	85.2 88.1	86.7	6.1 6.4	6.3	5.9	5.8 5.6	5.7	5.6	4.2 5.1	4.7	4.6
					Middle	3.2	28.1 28.1	28.1	8.0 8.0	8.0	17.8 18.6	18.2	77.3 76.6	77.0	5.5 5.4	5.4		7.0 6.8	6.9		3.8 5.1	4.5	
					Bottom	5.3	27.9 27.9	27.9	8.0 8.0	8.0	21.4 23.0	22.2	76.1 77.9	77.0	5.3 5.4	5.3	5.3	4.4 4.1	4.3		4.9 4.5	4.7	

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)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*
22-Aug-14	Sunny	Moderate	17:40	6.6	Surface	1.0	29.6 29.5	29.5	7.9 7.9	7.9	11.9 12.5	12.2	78.9 80.9	79.9	5.6 5.8	5.7	5.6	5.3 5.1	5.2	5.5	5.1 5.3	5.2	5.2
					Middle	3.3	29.4 29.2	29.3	7.9 7.9	7.9	12.9 13.1	13.0	79.7 74.2	77.0	5.7 5.2	5.4		5.0 5.3	5.2		4.9 5.1	5.0	
					Bottom	5.6	27.6 28.8	28.2	7.8 7.9	7.8	21.2 21.1	21.2	72.5 76.0	74.3	5.2 5.4	5.3	5.3	6.1 5.8	6.0		5.3 5.5	5.4	
25-Aug-14	Sunny	Moderate	19:06	6.4	Surface	1.0	29.8 29.8	29.8	8.2 8.2	8.2	15.1 15.1	15.1	88.3 85.4	86.9	6.2 6.0	6.1	5.8	4.2 4.1	4.2	5.7	1.8 1.7	1.8	2.7
					Middle	3.2	29.0 29.5	29.3	8.1 8.1	8.1	16.4 16.1	16.3	75.9 78.0	77.0	5.3 5.4	5.4		6.5 6.6	6.6		3.0 2.5	2.8	
					Bottom	5.4	27.5 27.6	27.6	8.1 8.1	8.1	21.4 21.5	21.4	71.5 76.3	73.9	5.0 5.3	5.2	5.2	6.6 6.2	6.4		3.2 3.5	3.4	
27-Aug-14	Sunny	Moderate	07:53	6.7	Surface	1.0	27.6 27.5	27.6	8.1 8.1	8.1	22.3 21.4	21.8	72.1 71.2	71.7	5.0 5.1	5.1	5.1	4.7 4.6	4.7	4.7	4.7 4.2	4.5	6.1
					Middle	3.4	27.2 27.4	27.3	8.1 8.1	8.1	24.3 24.2	24.2	71.9 70.7	71.3	5.2 5.0	5.1		4.8 4.5	4.7		4.5 4.9	4.7	
					Bottom	5.7	27.6 27.2	27.4	8.1 8.1	8.1	24.1 24.3	24.2	70.7 73.6	72.2	5.1 5.5	5.3	5.3	4.8 4.5	4.7		9.0 9.2	9.1	
29-Aug-14	Sunny	Moderate	09:05	6.7	Surface	1.0	27.8 27.6	27.7	8.1 8.1	8.1	20.6 20.8	20.7	81.5 81.1	81.3	5.7 5.6	5.7	5.6	13.4 12.8	13.1	14.1	2.9 4.0	3.5	3.4
					Middle	3.4	27.2 27.3	27.3	8.1 8.1	8.1	24.6 23.0	23.8	78.7 80.3	79.5	5.4 5.6	5.5		15.0 15.2	15.1		3.8 3.6	3.7	
					Bottom	5.7	27.1 27.0	27.1	8.1 8.1	8.1	25.1 25.2	25.2	79.3 79.6	79.5	5.5 5.6	5.5	5.5	14.1 13.8	14.0		2.6 3.5	3.1	

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-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*
1-Aug-14	Sunny	Moderate	15:11	16.8	Surface	1.0	29.7 29.5	29.6	8.2 8.2	8.2	15.8 15.9	15.9	85.9 84.8	85.4	6.0 5.9	6.0	5.8	2.5 2.4	2.5	2.6	1.8 1.7	1.8	2.6
					Middle	8.4	29.1 28.9	29.0	8.1 8.1	8.1	21.3 20.9	21.1	79.3 80.8	80.1	5.4 5.5	5.5		2.5 2.5	2.5		2.5 2.2	2.4	
					Bottom	15.8	28.5 28.5	28.5	8.1 8.1	8.1	23.2 23.3	23.2	80.0 76.8	78.4	5.5 5.3	5.4	5.4	2.7 2.8	2.8		3.6 3.4	3.5	
4-Aug-14	Sunny	Moderate	17:59	14.9	Surface	1.0	29.8 30.4	30.1	8.3 8.3	8.3	15.6 13.6	14.6	76.2 74.3	75.3	5.6 5.4	5.5	5.8	6.4 6.6	6.5	6.3	3.0 2.6	2.8	3.2
					Middle	7.5	27.5 27.3	27.4	8.1 8.1	8.1	26.2 26.6	26.4	78.9 80.2	79.6	6.0 6.0	6.0		6.5 6.2	6.4		3.1 3.4	3.3	
					Bottom	13.9	27.4 27.6	27.5	8.1 8.1	8.1	26.5 25.9	26.2	79.6 75.8	77.7	5.9 5.6	5.7	5.7	5.9 6.3	6.1		3.1 4.1	3.6	
6-Aug-14	Sunny	Moderate	09:50	16.3	Surface	1.0	29.3 29.4	29.3	8.4 8.4	8.4	16.3 16.4	16.4	98.2 95.3	96.8	6.9 6.7	6.8	6.2	3.2 3.5	3.4	5.0	5.5 5.3	5.4	5.8
					Middle	8.2	27.2 27.1	27.1	8.1 8.1	8.1	26.6 27.5	27.1	81.0 80.6	80.8	5.5 5.5	5.5		4.5 4.5	4.5		5.7 5.9	5.8	
					Bottom	15.3	26.7 26.6	26.6	8.2 8.2	8.2	29.4 29.5	29.5	78.2 77.0	77.6	5.3 5.2	5.3	5.3	6.9 7.3	7.1		6.0 6.1	6.1	
8-Aug-14	Sunny	Moderate	12:00	16.5	Surface	1.0	29.4 29.4	29.4	8.2 8.2	8.2	16.9 16.8	16.9	78.5 79.1	78.8	5.5 5.5	5.5	5.4	3.6 3.6	3.6	6.2	2.2 2.3	2.3	3.1
					Middle	8.3	27.1 27.1	27.1	8.1 8.1	8.1	26.3 26.4	26.3	74.7 75.0	74.9	5.2 5.3	5.2		7.4 7.2	7.3		2.7 3.3	3.0	
					Bottom	15.5	26.8 26.7	26.7	8.1 8.1	8.1	27.8 27.9	27.9	72.3 73.5	72.9	5.0 5.1	5.0	5.0	7.3 7.8	7.6		3.6 4.2	3.9	
11-Aug-14	Sunny	Moderate	12:22	17.0	Surface	1.0	29.0 29.2	29.1	8.1 8.1	8.1	22.0 21.8	21.9	83.2 83.9	83.6	6.1 6.1	6.1	6.0	6.5 6.3	6.4	6.6	5.4 5.6	5.5	6.0
					Middle	8.5	27.7 27.9	27.8	8.1 8.0	8.1	24.8 25.2	25.0	76.9 79.3	78.1	5.7 5.8	5.8		6.8 6.8	6.8		5.8 5.8	5.8	
					Bottom	16.0	27.1 27.6	27.3	8.0 8.0	8.0	27.0 25.6	26.3	82.6 80.9	81.8	6.1 5.9	6.0	6.0	6.6 6.8	6.7		6.9 6.7	6.8	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	-	- -	-	-
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	15:40	17.0	Surface	1.0	29.1 29.3	29.2	8.0 8.0	8.0	19.2 19.2	19.2	79.0 79.3	79.2	5.4 5.5	5.5	5.2	5.6 5.7	5.7	6.2	4.1 3.9	4.0	4.6
					Middle	8.5	28.0 27.9	27.9	7.9 7.9	7.9	22.2 22.2	22.2	69.1 69.1	69.1	4.8 4.8	4.8		6.3 6.1	6.2		4.3 4.5	4.4	
					Bottom	16.0	27.9 27.8	27.9	7.9 7.9	7.9	22.5 22.4	22.5	67.2 66.5	66.9	4.7 4.6	4.6	4.6	6.7 6.8	6.8		5.0 5.7	5.4	
18-Aug-14	Sunny	Moderate	08:01	16.1	Surface	1.0	29.1 29.2	29.2	8.0 8.0	8.0	13.8 13.8	13.8	81.4 82.9	82.2	5.8 5.9	5.8	5.5	4.3 4.2	4.3	5.6	3.0 2.9	3.0	3.6
					Middle	8.1	28.0 28.1	28.1	7.9 7.9	7.9	21.6 21.4	21.5	75.1 74.7	74.9	5.2 5.2	5.2		6.1 5.9	6.0		3.9 4.0	4.0	
					Bottom	15.1	26.1 25.9	26.0	7.9 7.9	7.9	25.9 28.8	27.3	73.8 74.4	74.1	5.1 5.1	5.1	5.1	6.3 6.4	6.4		3.6 3.9	3.8	
20-Aug-14	Rainy	Moderate	10:25	16.4	Surface	1.0	28.6 28.6	28.6	8.2 8.2	8.2	13.3 13.2	13.2	90.1 87.5	88.8	6.5 6.3	6.4	5.8	3.7 4.0	3.9	5.5	5.8 6.7	6.3	5.8
					Middle	8.2	27.0 27.0	27.0	8.0 8.0	8.0	25.4 25.5	25.4	72.7 75.3	74.0	5.0 5.2	5.1		6.1 6.2	6.2		5.1 6.4	5.8	
					Bottom	15.4	26.9 26.6	26.8	8.0 8.0	8.0	27.1 27.5	27.3	70.3 71.1	70.7	4.9 4.9	4.9	4.9	6.4 6.3	6.4		4.9 5.9	5.4	

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 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*
22-Aug-14	Sunny	Moderate	12:10	16.2	Surface	1.0	29.5 29.6	29.5	8.0 8.0	8.0	11.7 11.4	11.6	78.8 80.4	79.6	5.6 5.8	5.7	5.4	4.8 4.4	4.6	6.7	3.0 3.0	3.0	3.0
					Middle	8.1	27.1 26.9	27.0	7.9 7.9	7.9	24.0 24.4	24.2	73.8 73.5	73.7	5.2 5.1	5.1		6.7 6.6	6.7		3.1 2.9	3.0	
					Bottom	15.2	27.0 27.0	27.0	7.8 7.9	7.9	25.0 24.4	24.7	72.0 71.9	72.0	5.0 5.0	5.0	5.0	8.8 9.0	8.9		2.9 3.3	3.1	
25-Aug-14	Sunny	Moderate	13:59	16.1	Surface	1.0	29.6 29.6	29.6	8.1 8.1	8.1	16.5 16.4	16.5	75.1 76.1	75.6	5.2 5.3	5.3	5.2	5.4 5.3	5.4	5.5	2.2 2.3	2.3	2.7
					Middle	8.1	27.3 27.2	27.3	8.0 8.0	8.0	22.9 23.2	23.1	73.2 72.7	73.0	5.1 5.1	5.1		5.6 5.5	5.6		3.0 2.5	2.8	
					Bottom	15.1	27.3 27.0	27.1	8.0 8.0	8.0	23.2 24.2	23.7	72.0 72.5	72.3	5.0 5.1	5.0	5.0	5.4 5.4	5.4		3.1 2.6	2.9	
27-Aug-14	Sunny	Moderate	13:31	15.0	Surface	1.0	27.6 27.9	27.8	8.1 8.1	8.1	21.1 20.5	20.8	73.3 74.4	73.9	5.4 5.4	5.4	5.3	6.6 6.3	6.5	6.5	5.5 4.1	4.8	5.3
					Middle	7.5	27.4 27.4	27.4	8.1 8.1	8.1	22.7 21.6	22.2	71.8 71.3	71.6	5.1 5.4	5.2		6.6 6.5	6.6		5.9 5.2	5.6	
					Bottom	14.0	27.4 27.2	27.3	8.1 8.1	8.1	22.6 23.7	23.2	74.2 76.9	75.6	5.2 5.7	5.4	5.4	6.5 6.4	6.5		5.6 5.2	5.4	
29-Aug-14	Sunny	Moderate	14:14	16.7	Surface	1.0	28.9 28.4	28.6	8.1 8.1	8.1	20.8 21.3	21.0	84.7 80.2	82.5	5.8 5.5	5.7	5.5	6.8 7.2	7.0	10.5	4.6 5.9	5.3	5.1
					Middle	8.4	27.1 27.1	27.1	8.1 8.1	8.1	24.6 24.6	24.6	75.9 76.0	76.0	5.3 5.3	5.3		12.0 12.7	12.4		5.4 5.1	5.3	
					Bottom	15.7	27.1 27.1	27.1	8.1 8.1	8.1	24.6 24.7	24.7	78.7 79.5	79.1	5.5 5.5	5.5	5.5	11.8 12.4	12.1		4.2 5.1	4.7	

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 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*
1-Aug-14	Sunny	Moderate	10:20	17.1	Surface	1.0	29.8 29.8	29.8	8.1 8.1	8.1	15.3 15.2	15.2	80.4 79.7	80.1	5.6 5.6	5.6	5.4	4.0 4.0	4.0	4.2	2.7 2.9	2.8	3.3
					Middle	8.6	28.5 28.6	28.5	8.0 8.0	8.0	23.4 23.0	23.2	76.7 76.7	76.7	5.2 5.2	5.2		4.2 4.1	4.2		3.3 3.4	3.4	
					Bottom	16.1	28.5 28.5	28.5	8.0 8.0	8.0	23.4 23.4	23.4	70.7 69.2	70.0	4.8 4.7	4.8	4.8	4.5 4.3	4.4		3.8 3.7	3.8	
4-Aug-14	Sunny	Moderate	13:29	16.5	Surface	1.0	29.8 30.3	30.0	8.2 8.2	8.2	14.7 13.7	14.2	74.2 78.5	76.4	5.5 5.6	5.5	5.6	6.6 6.3	6.5	6.4	3.2 2.9	3.1	3.4
					Middle	8.3	27.4 27.5	27.4	8.1 8.1	8.1	27.2 26.5	26.9	77.5 75.2	76.4	5.6 5.5	5.6		6.1 6.4	6.3		3.2 3.2	3.2	
					Bottom	15.5	27.4 27.7	27.6	8.1 8.1	8.1	27.2 26.3	26.7	71.3 71.0	71.2	5.3 5.1	5.2	5.2	6.2 6.5	6.4		4.2 3.6	3.9	
6-Aug-14	Sunny	Moderate	15:27	16.1	Surface	1.0	29.5 29.5	29.5	8.3 8.3	8.3	13.9 14.5	14.2	84.0 86.3	85.2	5.9 6.1	6.0	5.9	5.4 5.2	5.3	6.2	3.2 3.8	3.5	4.5
					Middle	8.1	26.9 27.6	27.3	8.1 8.2	8.2	28.0 27.1	27.5	85.4 81.5	83.5	5.9 5.5	5.7		6.1 6.2	6.2		4.3 4.6	4.5	
					Bottom	15.1	26.8 26.7	26.7	8.1 8.1	8.1	28.3 28.6	28.4	73.0 72.3	72.7	5.0 4.9	5.0	5.0	6.9 7.3	7.1		5.5 5.5	5.5	
8-Aug-14	Sunny	Moderate	17:15	16.7	Surface	1.0	29.9 30.1	30.0	8.2 8.1	8.2	15.8 15.7	15.8	82.9 84.7	83.8	5.8 5.9	5.8	5.7	6.7 6.9	6.8	6.7	3.2 3.4	3.3	3.4
					Middle	8.4	29.0 28.9	28.9	8.1 8.1	8.1	21.8 20.3	21.0	79.3 78.4	78.9	5.5 5.4	5.5		6.7 6.7	6.7		3.3 3.6	3.5	
					Bottom	15.7	28.0 28.0	28.0	8.1 8.1	8.1	22.6 22.5	22.5	74.4 73.8	74.1	5.1 5.1	5.1	5.1	6.7 6.6	6.7		3.2 3.6	3.4	
11-Aug-14	Sunny	Moderate	07:06	17.2	Surface	1.0	28.0 28.0	28.0	8.1 8.1	8.1	23.5 23.6	23.6	76.8 76.7	76.8	5.7 5.7	5.7	5.7	15.8 15.3	15.6	15.6	19.5 19.9	19.7	19.7
					Middle	8.6	27.9 27.9	27.9	8.1 8.1	8.1	23.8 23.8	23.8	76.4 76.3	76.4	5.7 5.7	5.7		15.6 15.6	15.6		19.5 20.4	20.0	
					Bottom	16.2	27.9 27.9	27.9	8.1 8.1	8.1	23.8 23.8	23.8	76.6 76.6	76.6	5.7 5.7	5.7	5.7	15.6 15.4	15.5		19.6 19.1	19.4	
13-Aug-14	Rainy	Moderate	08:51	18.0	Surface	1.0	28.0 27.9	28.0	8.0 8.0	8.0	22.5 22.6	22.6	82.7 82.2	82.5	5.7 5.7	5.7	5.7	8.3 8.2	8.3	8.4	13.1 13.2	13.2	12.9
					Middle	9.0	27.7 27.8	27.7	8.0 8.0	8.0	23.3 23.3	23.3	82.2 82.7	82.5	5.7 5.7	5.7		8.2 8.5	8.4		14.0 14.3	14.2	
					Bottom	17.0	27.8 27.6	27.7	8.0 8.0	8.0	24.6 24.2	24.4	81.5 81.4	81.5	5.6 5.6	5.6	5.6	8.5 8.4	8.5		11.2 11.1	11.2	
15-Aug-14	Sunny	Moderate	10:44	16.6	Surface	1.0	28.5 28.4	28.4	8.0 8.0	8.0	20.0 20.0	20.0	72.2 72.5	72.4	5.0 5.0	5.0	4.8	6.1 5.8	6.0	6.7	4.3 4.7	4.5	5.5
					Middle	8.3	27.6 27.6	27.6	7.9 7.9	7.9	22.7 22.7	22.7	65.8 65.9	65.9	4.6 4.6	4.6		6.6 6.7	6.7		5.2 6.0	5.6	
					Bottom	15.6	27.4 27.5	27.5	7.9 7.9	7.9	23.1 23.2	23.1	63.7 63.6	63.7	4.4 4.4	4.4	4.4	7.2 7.5	7.4		6.2 6.6	6.4	
18-Aug-14	Sunny	Moderate	12:51	16.7	Surface	1.0	29.6 29.6	29.6	8.0 8.0	8.0	13.6 13.9	13.7	83.9 85.3	84.6	5.9 6.0	6.0	5.6	4.6 4.4	4.5	6.4	2.0 2.0	2.0	2.1
					Middle	8.4	27.9 28.1	28.0	7.9 7.9	7.9	22.6 23.3	23.0	73.5 73.5	73.5	5.1 5.1	5.1		7.3 7.1	7.2		1.9 1.8	1.9	
					Bottom	15.7	27.4 27.3	27.4	7.9 7.9	7.9	24.2 24.4	24.3	73.4 72.6	73.0	5.0 5.0	5.0	5.0	7.5 7.2	7.4		2.1 2.4	2.3	
20-Aug-14	Rainy	Moderate	16:16	16.2	Surface	1.0	28.6 28.6	28.6	8.1 8.0	8.1	13.2 15.0	14.1	85.5 85.7	85.6	6.2 6.1	6.1	5.7	4.9 5.2	5.1	5.3	5.0 4.9	5.0	4.8
					Middle	8.1	27.6 28.1	27.8	7.9 8.0	8.0	21.2 20.4	20.8	74.8 74.0	74.4	5.2 5.2	5.2		5.4 5.0	5.2		4.1 4.4	4.3	
					Bottom	15.2	27.2 27.2	27.2	7.9 7.9	7.9	24.9 24.9	24.9	71.6 71.1	71.4	4.9 4.9	4.9	4.9	5.5 5.8	5.7		5.6 4.3	5.0	

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*
22-Aug-14	Sunny	Moderate	17:21	16.3	Surface	1.0	29.5 29.4	29.5	7.9 7.9	7.9	12.5 12.6	12.6	87.7 86.6	87.2	6.3 6.2	6.2	5.9	6.4 6.1	6.3	7.8	4.1 4.2	4.2	5.5
					Middle	8.2	27.1 27.0	27.0	7.9 7.8	7.9	23.6 23.9	23.8	78.6 79.0	78.8	5.6 5.6	5.6		7.3 7.0	7.2		5.7 5.6	5.7	
					Bottom	15.3	27.1 27.2	27.1	7.8 7.9	7.8	23.9 23.5	23.7	70.5 70.9	70.7	4.9 4.9	4.9	4.9	10.2 9.6	9.9		6.8 6.3	6.6	
25-Aug-14	Sunny	Moderate	18:41	16.5	Surface	1.0	30.0 29.9	29.9	8.2 8.2	8.2	14.9 15.1	15.0	89.6 91.1	90.4	6.3 6.4	6.3	5.9	4.3 4.5	4.4	4.5	3.2 3.2	3.2	3.2
					Middle	8.3	27.5 29.3	28.4	8.1 8.2	8.1	22.0 19.3	20.7	94.6 77.8	86.2	5.6 5.4	5.5		4.6 4.5	4.6		2.9 3.1	3.0	
					Bottom	15.5	26.4 26.5	26.4	8.1 8.1	8.1	26.4 25.8	26.1	76.1 75.7	75.9	5.3 5.3	5.3	5.3	4.5 4.6	4.6		3.2 3.8	3.5	
27-Aug-14	Sunny	Moderate	08:15	16.7	Surface	1.0	27.2 27.3	27.2	8.1 8.1	8.1	24.1 23.5	23.8	79.5 73.6	76.6	5.8 5.1	5.5	5.5	6.8 6.5	6.7	6.5	4.1 4.9	4.5	5.3
					Middle	8.4	27.1 27.1	27.1	8.1 8.1	8.1	24.5 24.5	24.5	76.6 71.1	73.9	5.4 5.5	5.4		6.2 6.8	6.5		5.1 5.3	5.2	
					Bottom	15.7	27.3 27.2	27.2	8.1 8.1	8.1	24.1 24.4	24.2	72.3 77.8	75.1	5.0 5.7	5.4	5.4	6.3 6.5	6.4		5.8 6.4	6.1	
29-Aug-14	Sunny	Moderate	09:27	16.9	Surface	1.0	27.9 27.9	27.9	8.1 8.1	8.1	20.7 20.6	20.7	78.8 78.7	78.8	5.5 5.5	5.5	5.4	15.0 14.6	14.8	14.0	4.1 3.9	4.0	4.0
					Middle	8.5	27.0 27.0	27.0	8.1 8.1	8.1	25.3 25.4	25.3	75.1 75.4	75.3	5.2 5.2	5.2		12.8 13.0	12.9		3.4 3.5	3.5	
					Bottom	15.9	27.0 27.0	27.0	8.1 8.1	8.1	25.4 25.4	25.4	76.1 75.5	75.8	5.3 5.2	5.2	5.2	14.4 13.9	14.2		4.3 4.5	4.4	

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 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*
1-Aug-14	Sunny	Moderate	15:50	13.1	Surface	1.0	30.0 30.1	30.0	7.9 8.1	8.0	19.8 19.6	19.7	87.9 89.0	88.5	6.0 6.0	6.0	5.6	2.6 2.4	2.5	2.9	1.9 1.6	1.8	1.8
					Middle	6.6	28.7 27.1	27.9	7.9 7.9	7.9	24.0 28.9	26.4	75.0 74.4	74.7	5.1 5.1	5.1		3.3 3.1	3.2		1.7 1.7	1.7	
					Bottom	12.1	27.3 28.2	27.8	7.9 7.9	7.9	28.0 27.8	27.9	73.5 71.6	72.6	5.0 4.9	4.9	4.9	2.9 3.1	3.0		1.9 1.9	1.9	
4-Aug-14	Sunny	Moderate	18:39	12.4	Surface	1.0	30.6 30.7	30.7	8.4 8.3	8.3	18.6 18.1	18.3	134.8 141.6	138.2	9.1 9.6	9.3	7.3	2.5 2.5	2.5	2.6	2.9 2.6	2.8	4.1
					Middle	6.2	27.9 27.6	27.8	7.8 7.9	7.9	26.1 26.2	26.1	74.9 75.8	75.4	5.1 5.2	5.2		2.6 2.5	2.6		3.5 3.7	3.6	
					Bottom	11.4	25.6 25.7	25.6	7.8 7.9	7.8	31.4 31.3	31.4	73.5 75.9	74.7	5.0 5.2	5.1	5.1	2.7 2.6	2.7		5.8 5.7	5.8	
6-Aug-14	Sunny	Moderate	08:42	12.4	Surface	1.0	28.8 28.7	28.7	8.6 8.5	8.5	21.3 21.6	21.5	90.6 87.2	88.9	6.2 6.0	6.1	5.6	1.9 2.0	2.0	2.7	2.1 2.3	2.2	2.8
					Middle	6.2	27.1 26.6	26.8	8.5 8.5	8.5	28.3 28.0	28.2	73.5 72.8	73.2	5.1 5.1	5.1		3.0 2.9	3.0		3.1 3.4	3.3	
					Bottom	11.4	26.1 26.0	26.1	8.5 8.4	8.5	30.2 30.3	30.2	73.2 71.8	72.5	5.0 4.9	5.0	5.0	3.0 3.1	3.1		2.8 2.9	2.9	
8-Aug-14	Sunny	Moderate	10:34	13.4	Surface	1.0	28.9 28.8	28.9	8.3 8.1	8.2	18.7 18.7	18.7	81.6 82.4	82.0	5.7 5.7	5.7	5.4	5.1 5.0	5.1	5.0	2.2 2.0	2.1	3.0
					Middle	6.7	27.5 27.8	27.6	8.2 7.8	8.0	24.9 24.2	24.5	75.2 74.3	74.8	5.2 5.1	5.1		4.6 4.9	4.8		3.3 3.2	3.3	
					Bottom	12.4	27.4 27.4	27.4	8.2 8.0	8.1	25.4 25.1	25.3	71.1 72.2	71.7	4.9 5.0	4.9	4.9	4.8 5.2	5.0		3.6 3.8	3.7	
11-Aug-14	Sunny	Moderate	13:20	13.4	Surface	1.0	28.7 28.6	28.6	8.2 8.2	8.2	23.2 23.2	23.2	82.0 81.2	81.6	5.6 5.6	5.6	5.4	8.2 8.6	8.4	10.1	3.7 3.8	3.8	5.0
					Middle	6.7	27.7 27.7	27.7	8.2 8.3	8.2	25.3 25.1	25.2	74.6 76.9	75.8	5.1 5.2	5.2		10.8 10.4	10.6		5.1 5.1	5.1	
					Bottom	12.4	27.7 27.7	27.7	8.3 8.2	8.2	25.1 25.4	25.2	73.0 70.9	72.0	5.0 4.9	4.9	4.9	11.4 11.2	11.3		6.2 5.9	6.1	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	-	- -	-	-
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	16:16	12.1	Surface	1.0	28.5 28.4	28.4	7.8 7.8	7.8	22.1 22.2	22.2	72.7 73.4	73.1	5.1 5.1	5.1	5.1	8.1 8.3	8.2	8.4	11.8 11.8	11.8	13.4
					Middle	6.1	27.5 27.5	27.5	7.8 7.8	7.8	25.3 24.6	25.0	72.4 72.1	72.3	5.0 5.0	5.0		8.4 8.5	8.5		13.5 13.6	13.6	
					Bottom	11.1	26.7 26.8	26.7	7.8 7.8	7.8	28.0 27.2	27.6	68.4 69.2	68.8	4.8 4.9	4.9	4.9	8.5 8.4	8.5		14.7 14.6	14.7	
18-Aug-14	Sunny	Moderate	06:56	13.4	Surface	1.0	29.3 29.2	29.2	7.8 7.8	7.8	16.4 16.6	16.5	81.3 81.6	81.5	5.7 5.7	5.7	5.6	3.5 3.8	3.7	3.9	1.8 1.7	1.8	1.9
					Middle	6.7	28.3 28.2	28.2	7.7 7.7	7.7	21.8 22.2	22.0	80.7 78.2	79.5	5.6 5.4	5.5		3.8 4.2	4.0		1.8 1.7	1.8	
					Bottom	12.4	28.4 28.2	28.3	7.7 7.7	7.7	22.8 22.3	22.5	72.6 74.5	73.6	5.0 5.1	5.1	5.1	4.1 3.8	4.0		2.2 2.2	2.2	
20-Aug-14	Rainy	Moderate	09:26	12.6	Surface	1.0	28.8 28.8	28.8	8.0 8.0	8.0	15.0 15.3	15.1	90.0 84.7	87.4	6.4 6.0	6.2	5.7	3.2 3.3	3.3	3.5	2.8 4.0	3.4	3.4
					Middle	6.3	27.9 27.9	27.9	7.9 7.8	7.8	22.2 22.4	22.3	75.4 73.9	74.7	5.2 5.0	5.1		3.5 3.5	3.5		4.0 2.5	3.3	
					Bottom	11.6	25.7 26.1	25.9	7.6 7.8	7.7	30.3 28.7	29.5	68.3 75.0	71.7	4.7 5.2	4.9	4.9	3.6 3.8	3.7		3.5 3.3	3.4	

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 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*
22-Aug-14	Sunny	Moderate	10:57	12.4	Surface	1.0	28.6 28.6	28.6	7.9 7.9	7.9	15.2 15.1	15.1	72.3 72.7	72.5	5.2 5.2	5.2	5.2	3.7 3.7	3.7	3.9	3.8 3.3	3.6	3.9
					Middle	6.2	28.0 28.0	28.0	7.9 7.9	7.9	18.7 18.8	18.8	70.9 71.2	71.1	5.1 5.1	5.1		4.0 3.8	3.9		4.1 4.1	4.1	
					Bottom	11.4	26.1 26.0	26.0	7.9 7.9	7.9	28.6 28.9	28.7	69.9 70.4	70.2	4.9 5.0	4.9	4.9	4.1 4.2	4.2		4.0 4.2	4.1	
25-Aug-14	Sunny	Moderate	12:40	13.5	Surface	1.0	29.1 28.8	28.9	7.9 7.9	7.9	20.1 20.1	20.1	79.3 79.4	79.4	5.5 5.5	5.5	5.4	4.3 4.0	4.2	6.4	0.5 0.5	0.5	1.7
					Middle	6.8	27.4 27.3	27.4	7.9 7.8	7.9	23.3 23.6	23.5	75.0 74.4	74.7	5.2 5.2	5.2		8.2 8.9	8.6		1.9 1.8	1.9	
					Bottom	12.5	27.8 27.3	27.6	7.9 7.8	7.9	23.4 23.7	23.5	69.7 71.6	70.7	4.8 4.9	4.9	4.9	6.4 6.6	6.5		2.3 3.1	2.7	
27-Aug-14	Sunny	Moderate	14:12	12.3	Surface	1.0	27.7 27.7	27.7	8.1 8.0	8.1	23.8 23.9	23.9	75.3 75.1	75.2	5.2 5.2	5.2	5.2	4.9 5.0	5.0	5.5	6.5 6.9	6.7	8.9
					Middle	6.2	26.7 26.8	26.8	8.0 8.0	8.0	25.5 25.8	25.6	74.0 74.1	74.1	5.1 5.1	5.1		5.5 5.6	5.6		9.0 8.4	8.7	
					Bottom	11.3	26.3 26.0	26.2	8.0 8.0	8.0	29.0 29.7	29.3	70.6 73.4	72.0	4.8 5.0	4.9	4.9	5.9 5.8	5.9		11.1 11.3	11.2	
29-Aug-14	Sunny	Moderate	15:11	12.2	Surface	1.0	27.6 27.8	27.7	7.9 7.9	7.9	25.7 25.5	25.6	79.1 80.7	79.9	5.5 5.6	5.6	5.4	8.5 8.5	8.5	8.6	3.6 3.6	3.6	4.9
					Middle	6.1	26.9 26.7	26.8	7.9 7.9	7.9	26.7 26.9	26.8	76.3 73.0	74.7	5.4 5.1	5.2		8.6 8.6	8.6		5.4 5.0	5.2	
					Bottom	11.2	27.0 26.2	26.6	7.9 7.9	7.9	29.3 30.0	29.7	79.2 73.7	76.5	5.5 5.1	5.3	5.3	8.7 8.7	8.7		5.9 6.1	6.0	

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-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*
1-Aug-14	Sunny	Moderate	08:49	13.3	Surface	1.0	29.5 29.5	29.5	8.0 8.0	8.0	18.9 18.9	18.9	84.8 84.1	84.5	5.8 5.8	5.8	5.5	1.6 1.6	1.6	1.8	1.9 2.3	2.1	2.6
					Middle	6.7	28.3 28.3	28.3	8.0 8.0	8.0	23.8 23.9	23.9	73.3 76.1	74.7	5.0 5.2	5.1		1.9 1.8	1.9		2.0 2.3	2.2	
					Bottom	12.3	28.3 28.4	28.3	8.0 8.0	8.0	24.0 23.9	24.0	79.5 77.9	78.7	5.4 5.3	5.4	5.4	2.0 1.9	2.0		3.2 3.5	3.4	
4-Aug-14	Sunny	Moderate	12:20	12.6	Surface	1.0	30.4 30.3	30.3	7.8 7.9	7.9	18.4 18.5	18.5	89.9 92.7	91.3	6.1 6.3	6.2	5.7	4.7 4.9	4.8	6.1	2.7 2.5	2.6	3.2
					Middle	6.3	27.3 27.5	27.4	7.7 7.7	7.7	26.4 26.8	26.6	76.1 74.9	75.5	5.2 5.1	5.2		5.1 5.3	5.2		3.4 3.4	3.4	
					Bottom	11.6	25.1 25.1	25.1	7.6 7.6	7.6	32.4 32.3	32.3	74.5 73.3	73.9	5.1 5.0	5.1	5.1	8.1 8.2	8.2		3.5 3.6	3.6	
6-Aug-14	Sunny	Moderate	16:32	12.7	Surface	1.0	29.1 29.2	29.1	8.5 8.5	8.5	21.9 21.8	21.8	105.7 111.5	108.6	7.2 7.6	7.4	6.3	3.2 3.3	3.3	6.7	1.6 1.6	1.6	2.8
					Middle	6.4	25.7 26.4	26.1	8.5 8.5	8.5	30.5 29.6	30.0	73.8 74.8	74.3	5.1 5.3	5.2		8.3 8.6	8.5		3.4 3.4	3.4	
					Bottom	11.7	25.3 25.5	25.4	8.5 8.5	8.5	32.0 31.8	31.9	73.9 68.8	71.4	5.1 4.7	4.9	4.9	8.4 8.4	8.4		3.6 3.2	3.4	
8-Aug-14	Sunny	Moderate	18:07	13.8	Surface	1.0	29.4 29.5	29.5	8.2 8.2	8.2	20.2 20.0	20.1	95.6 96.4	96.0	6.5 6.6	6.6	6.2	3.3 3.0	3.2	4.5	1.9 1.6	1.8	2.7
					Middle	6.9	26.7 26.7	26.7	8.0 8.0	8.0	28.1 28.2	28.1	81.7 84.6	83.2	5.6 5.8	5.7		5.3 5.2	5.3		2.7 2.4	2.6	
					Bottom	12.8	26.8 26.4	26.6	8.1 8.0	8.1	28.4 28.6	28.5	70.5 71.0	70.8	4.8 4.9	4.8	4.8	5.2 5.0	5.1		3.8 3.5	3.7	
11-Aug-14	Sunny	Moderate	05:59	13.6	Surface	1.0	27.9 27.3	27.6	8.2 8.2	8.2	23.8 26.1	24.9	83.9 81.2	82.6	5.8 5.6	5.7	5.5	9.5 10.4	10.0	11.6	4.4 4.1	4.3	4.9
					Middle	6.8	25.9 26.0	26.0	8.2 8.2	8.2	29.7 29.7	29.7	73.8 76.6	75.2	5.1 5.3	5.2		11.2 10.8	11.0		5.3 5.2	5.3	
					Bottom	12.6	26.0 25.9	26.0	8.2 8.2	8.2	29.6 29.7	29.7	80.4 75.3	77.9	5.5 5.2	5.4	5.4	13.8 13.5	13.7		5.2 5.0	5.1	
13-Aug-14	Rainy	Moderate	07:50	13.4	Surface	1.0	27.1 26.9	27.0	7.9 7.8	7.8	26.5 26.5	26.5	79.2 78.6	78.9	5.4 5.4	5.4	5.3	12.2 12.4	12.3	13.6	1.9 1.6	1.8	2.7
					Middle	6.7	26.3 26.3	26.3	7.8 7.9	7.8	28.4 28.7	28.6	77.7 73.2	75.5	5.3 5.0	5.2		13.3 13.7	13.5		2.7 2.4	2.6	
					Bottom	12.4	26.3 26.3	26.3	7.7 7.8	7.8	28.3 28.7	28.5	74.5 75.4	75.0	5.1 5.2	5.1	5.1	14.5 15.2	14.9		3.8 3.5	3.7	
15-Aug-14	Sunny	Moderate	09:51	12.6	Surface	1.0	28.3 28.5	28.4	7.8 7.7	7.8	20.6 20.5	20.5	72.0 73.6	72.8	5.1 5.3	5.2	5.2	10.2 10.5	10.4	11.2	4.5 4.6	4.6	5.4
					Middle	6.3	27.6 27.6	27.6	7.7 7.8	7.7	23.9 23.7	23.8	72.2 70.0	71.1	5.1 5.0	5.1		11.7 11.5	11.6		5.2 5.6	5.4	
					Bottom	11.6	27.6 27.9	27.8	7.7 7.7	7.7	23.9 23.7	23.8	79.4 68.5	74.0	5.6 4.9	5.3	5.3	11.4 11.5	11.5		6.0 6.1	6.1	
18-Aug-14	Sunny	Moderate	13:43	13.6	Surface	1.0	29.9 29.9	29.9	8.1 8.0	8.0	17.4 17.4	17.4	90.2 97.5	93.9	6.2 6.7	6.5	5.9	3.1 2.9	3.0	4.6	1.2 1.1	1.2	1.5
					Middle	6.8	26.7 26.7	26.7	7.9 7.8	7.8	27.9 28.0	27.9	76.0 75.3	75.7	5.2 5.2	5.2		5.3 5.5	5.4		1.6 1.5	1.6	
					Bottom	12.6	26.5 26.5	26.5	7.7 7.8	7.8	29.3 29.3	29.3	70.1 71.5	70.8	4.8 4.9	4.8	4.8	5.3 5.4	5.4		1.6 1.8	1.7	
20-Aug-14	Rainy	Moderate	17:17	12.1	Surface	1.0	28.5 28.6	28.6	8.0 8.0	8.0	17.1 15.9	16.5	80.0 83.0	81.5	5.6 5.9	5.8	5.5	7.7 7.7	7.7	7.7	3.7 3.6	3.7	3.5
					Middle	6.1	26.7 26.7	26.7	7.9 7.9	7.9	26.4 27.1	26.8	76.4 75.9	76.2	5.2 5.1	5.2		7.6 7.7	7.7		3.1 3.6	3.4	
					Bottom	11.1	25.0 25.2	25.1	7.8 7.9	7.9	32.0 31.8	31.9	75.1 68.4	71.8	5.1 4.7	4.9	4.9	7.8 7.8	7.8		3.2 3.6	3.4	

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 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*
22-Aug-14	Sunny	Moderate	18:28	12.5	Surface	1.0	28.9 28.9	28.9	8.0 8.0	8.0	17.1 17.0	17.0	79.2 76.6	77.9	5.6 5.4	5.5	5.3	3.3 3.3	3.3	5.3	1.2 1.3	1.3	2.6
					Middle	6.3	26.5 26.4	26.5	8.0 8.0	8.0	26.9 27.2	27.0	72.0 70.6	71.3	5.1 5.1	5.1		6.1 5.8	6.0		3.1 3.0	3.1	
					Bottom	11.5	26.0 25.6	25.8	8.0 8.0	8.0	29.4 29.7	29.5	70.1 70.9	70.5	4.9 5.0	5.0	5.0	6.5 6.5	6.5		3.3 3.2	3.3	
25-Aug-14	Sunny	Moderate	19:48	13.6	Surface	1.0	29.0 29.1	29.0	8.0 8.0	8.0	19.0 18.8	18.9	80.8 80.9	80.9	5.6 5.6	5.6	5.4	3.6 3.3	3.5	5.8	2.9 3.2	3.1	3.8
					Middle	6.8	27.0 26.9	26.9	7.9 8.0	7.9	25.5 25.6	25.5	74.5 73.8	74.2	5.1 5.1	5.1		6.7 7.2	7.0		3.6 3.6	3.6	
					Bottom	12.6	26.9 26.9	26.9	8.0 7.8	7.9	25.7 25.7	25.7	71.0 70.1	70.6	4.9 4.8	4.9	4.9	6.7 7.1	6.9		4.3 5.2	4.8	
27-Aug-14	Sunny	Moderate	06:32	12.8	Surface	1.0	27.5 27.5	27.5	8.0 7.9	8.0	23.6 23.7	23.7	73.3 74.1	73.7	5.1 5.1	5.1	5.1	5.3 5.0	5.2	6.0	3.1 3.1	3.1	4.5
					Middle	6.4	26.1 26.0	26.1	8.0 8.0	8.0	28.3 28.6	28.5	73.4 72.9	73.2	5.1 5.1	5.1		6.2 6.3	6.3		5.0 5.7	5.4	
					Bottom	11.8	25.9 26.3	26.1	7.9 8.0	7.9	29.0 28.9	29.0	72.1 72.5	72.3	5.0 5.0	5.0	5.0	6.4 6.7	6.6		5.1 5.1	5.1	
29-Aug-14	Sunny	Moderate	08:19	12.6	Surface	1.0	27.7 27.6	27.7	7.8 7.8	7.8	23.4 23.1	23.2	81.5 80.1	80.8	5.7 5.7	5.7	5.6	9.8 10.1	10.0	10.2	3.8 2.6	3.2	4.5
					Middle	6.3	26.6 26.8	26.7	7.8 7.8	7.8	25.8 25.8	25.8	77.8 74.6	76.2	5.5 5.3	5.4		10.2 10.1	10.2		4.8 4.6	4.7	
					Bottom	11.6	26.2 26.5	26.4	7.8 7.8	7.8	28.5 28.3	28.4	74.4 75.5	75.0	5.2 5.3	5.3	5.3	10.2 10.3	10.3		5.8 5.2	5.5	

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 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*
1-Aug-14	Sunny	Moderate	16:47	10.0	Surface	1.0	30.3 30.7	30.5	8.2 8.2	8.2	16.2 15.3	15.8	92.4 91.5	92.0	6.4 6.3	6.3	5.8	2.2 2.1	2.2	2.2	2.0 2.4	2.2	2.5
					Middle	5.0	28.6 28.7	28.7	8.1 8.1	8.1	23.3 23.1	23.2	78.5 78.4	78.5	5.3 5.3	5.3		2.1 2.2	2.2		2.2 2.5	2.4	
					Bottom	9.0	27.7 27.6	27.6	8.1 8.1	8.1	26.1 25.1	25.6	75.8 75.6	75.7	5.2 5.2	5.2	5.2	2.1 2.2	2.2		2.8 2.7	2.8	
4-Aug-14	Sunny	Moderate	19:30	8.6	Surface	1.0	30.2 30.3	30.2	8.4 8.4	8.4	16.6 16.6	16.6	77.6 79.8	78.7	5.7 5.9	5.8	5.9	4.7 4.1	4.4	4.5	3.3 3.3	3.3	3.2
					Middle	4.3	29.3 29.3	29.3	8.3 8.2	8.2	20.3 20.4	20.3	78.4 79.8	79.1	5.9 6.0	5.9		4.4 4.8	4.6		2.8 3.1	3.0	
					Bottom	7.6	27.8 27.2	27.5	8.1 8.2	8.1	25.6 27.2	26.4	72.1 72.1	72.1	5.3 5.3	5.3	5.3	4.4 4.6	4.5		3.2 3.3	3.3	
6-Aug-14	Sunny	Moderate	08:05	10.1	Surface	1.0	28.5 28.8	28.7	8.3 8.3	8.3	21.5 20.5	21.0	90.5 89.2	89.9	6.2 6.2	6.2	5.8	1.5 1.5	1.5	1.3	4.1 4.2	4.2	4.5
					Middle	5.1	27.1 27.3	27.2	8.2 8.2	8.2	27.1 26.8	27.0	78.0 79.8	78.9	5.3 5.5	5.4		1.2 1.1	1.2		3.9 3.7	3.8	
					Bottom	9.1	27.0 27.1	27.1	8.2 8.2	8.2	27.5 27.2	27.3	79.0 80.9	80.0	5.4 5.5	5.5	5.5	1.2 1.2	1.2		5.1 5.6	5.4	
8-Aug-14	Sunny	Moderate	10:21	10.1	Surface	1.0	28.5 28.7	28.6	8.2 8.2	8.2	17.0 18.7	17.8	78.4 76.3	77.4	5.5 5.3	5.4	5.3	2.3 2.5	2.4	2.7	2.4 2.2	2.3	3.3
					Middle	5.1	27.2 27.4	27.3	8.2 8.2	8.2	25.3 24.7	25.0	78.0 73.4	75.7	5.4 5.1	5.2		2.9 2.8	2.9		3.5 3.4	3.5	
					Bottom	9.1	27.2 27.0	27.1	8.2 8.1	8.2	25.4 25.7	25.6	76.3 74.2	75.3	5.3 5.1	5.2	5.2	2.8 2.8	2.8		3.9 4.0	4.0	
11-Aug-14	Sunny	Moderate	14:02	10.0	Surface	1.0	28.1 27.9	28.0	8.1 8.1	8.1	23.7 24.3	24.0	80.7 78.5	79.6	5.9 5.8	5.9	5.7	6.4 6.6	6.5	7.2	8.5 8.4	8.5	8.4
					Middle	5.0	27.5 27.7	27.6	8.1 8.1	8.1	25.3 25.1	25.2	73.7 75.7	74.7	5.5 5.6	5.5		6.8 6.9	6.9		8.2 8.2	8.2	
					Bottom	9.0	27.0 27.2	27.1	8.1 8.1	8.1	26.8 26.2	26.5	74.8 73.8	74.3	5.5 5.5	5.5	5.5	8.3 8.2	8.3		8.4 8.4	8.4	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	-	- -	-	-
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	17:04	10.0	Surface	1.0	28.7 28.6	28.7	8.0 8.0	8.0	20.4 20.5	20.5	73.2 72.9	73.1	5.1 5.0	5.0	4.8	5.5 5.7	5.6	6.0	3.6 3.6	3.6	5.6
					Middle	5.0	27.5 27.5	27.5	8.0 7.9	8.0	23.9 23.9	23.9	64.9 64.0	64.5	4.5 4.4	4.5		5.8 5.9	5.9		5.7 5.8	5.8	
					Bottom	9.0	26.4 26.4	26.4	8.0 7.8	7.9	27.4 27.4	27.4	61.2 62.0	61.6	4.2 4.3	4.3	4.3	6.6 6.3	6.5		7.3 7.3	7.3	
18-Aug-14	Sunny	Moderate	06:16	10.0	Surface	1.0	29.0 29.1	29.0	8.1 8.1	8.1	16.4 14.6	15.5	83.3 86.1	84.7	5.9 6.1	6.0	5.7	1.9 1.8	1.9	1.8	3.3 3.2	3.3	3.9
					Middle	5.0	28.7 28.4	28.6	8.0 8.0	8.0	17.6 18.9	18.2	78.0 77.1	77.6	5.5 5.4	5.4		1.7 1.7	1.7		3.9 4.1	4.0	
					Bottom	9.0	28.1 28.0	28.1	8.0 8.0	8.0	21.7 22.0	21.9	78.0 79.2	78.6	5.4 5.5	5.4	5.4	1.8 1.8	1.8		4.0 4.5	4.3	
20-Aug-14	Rainy	Moderate	08:40	9.7	Surface	1.0	28.2 28.3	28.3	8.2 8.2	8.2	15.9 16.0	16.0	79.8 80.7	80.3	5.7 5.8	5.7	5.6	1.4 1.5	1.5	1.4	3.8 3.8	3.8	3.8
					Middle	4.9	27.3 27.2	27.2	8.1 8.1	8.1	23.1 23.3	23.2	79.0 78.2	78.6	5.5 5.5	5.5		1.3 1.4	1.4		3.4 3.3	3.4	
					Bottom	8.7	27.1 27.0	27.1	8.1 8.1	8.1	23.8 24.2	24.0	76.2 74.6	75.4	5.3 5.2	5.3	5.3	1.4 1.4	1.4		4.5 4.1	4.3	

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 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*
22-Aug-14	Sunny	Moderate	10:24	9.7	Surface	1.0	27.9 28.1	28.0	8.0 8.0	8.0	18.0 17.4	17.7	79.7 82.0	80.9	5.7 5.8	5.7	5.5	1.4 1.3	1.4	1.5	2.2 2.5	2.4	2.7
					Middle	4.9	26.8 26.6	26.7	8.0 8.0	8.0	24.8 24.6	24.7	74.2 74.9	74.6	5.2 5.2	5.2		1.4 1.4	1.4		2.1 2.6	2.4	
					Bottom	8.7	26.4 26.4	26.4	8.0 8.0	8.0	25.7 25.8	25.8	76.4 73.5	75.0	5.3 5.1	5.2	5.2	1.5 1.6	1.6		3.2 3.5	3.4	
25-Aug-14	Sunny	Moderate	12:10	10.4	Surface	1.0	28.6 28.1	28.3	8.1 8.1	8.1	19.4 20.1	19.8	76.7 75.2	76.0	5.3 5.3	5.3	5.3	2.3 2.2	2.3	3.2	2.4 2.6	2.5	2.8
					Middle	5.2	26.2 26.3	26.3	8.1 8.1	8.1	25.2 25.4	25.3	74.1 73.9	74.0	5.2 5.2	5.2		3.5 3.4	3.5		3.2 2.5	2.9	
					Bottom	9.4	25.5 25.5	25.5	8.1 8.1	8.1	29.0 29.0	29.0	73.0 72.8	72.9	5.1 5.1	5.1	5.1	3.7 3.9	3.8		2.8 2.9	2.9	
27-Aug-14	Sunny	Moderate	15:11	9.4	Surface	1.0	27.8 27.1	27.5	8.2 8.2	8.2	21.9 22.3	22.1	73.3 75.7	74.5	5.5 5.5	5.5	5.5	2.5 2.3	2.4	2.4	3.8 3.0	3.4	3.6
					Middle	4.7	27.2 27.3	27.3	8.2 8.2	8.2	26.4 24.0	25.2	75.5 74.3	74.9	5.7 5.4	5.5		2.4 2.4	2.4		3.8 3.8	3.8	
					Bottom	8.4	27.4 27.6	27.5	8.2 8.2	8.2	23.9 24.0	23.9	73.2 74.5	73.9	5.5 5.4	5.4	5.4	2.3 2.2	2.3		3.6 3.3	3.5	
29-Aug-14	Sunny	Moderate	15:38	10.3	Surface	1.0	28.4 28.4	28.4	8.2 8.1	8.2	23.6 23.6	23.6	83.7 83.7	83.7	5.7 5.7	5.7	5.6	2.1 2.2	2.2	2.3	4.4 4.1	4.3	4.8
					Middle	5.2	27.0 26.7	26.8	8.1 8.2	8.1	26.3 27.4	26.9	81.2 80.2	80.7	5.6 5.5	5.5		2.3 2.2	2.3		4.9 4.0	4.5	
					Bottom	9.3	26.7 26.5	26.6	8.1 8.2	8.1	27.5 27.9	27.7	83.1 82.3	82.7	5.7 5.7	5.7	5.7	2.5 2.3	2.4		5.7 5.7	5.7	

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*
1-Aug-14	Sunny	Moderate	08:46	10.3	Surface	1.0	29.3 29.4	29.3	8.1 8.1	8.1	18.8 18.9	18.9	74.0 75.9	75.0	5.1 5.2	5.2	5.2	2.3 2.2	2.3	2.3	1.6 1.7	1.7	2.8
					Middle	5.2	28.7 28.6	28.6	8.1 8.1	8.1	21.8 21.8	21.8	74.5 73.5	74.0	5.1 5.1	5.1		2.3 2.3	2.3		3.1 3.0	3.1	
					Bottom	9.3	27.9 27.2	27.5	8.0 8.0	8.0	26.4 27.1	26.8	72.1 72.0	72.1	5.0 4.9	5.0	5.0	2.3 2.2	2.3		3.7 3.5	3.6	
4-Aug-14	Sunny	Moderate	12:08	10.0	Surface	1.0	28.7 28.8	28.8	8.2 8.2	8.2	21.8 21.6	21.7	70.2 73.2	71.7	5.0 5.3	5.2	5.4	4.5 4.9	4.7	4.7	2.6 2.8	2.7	3.0
					Middle	5.0	27.4 27.6	27.5	8.1 8.1	8.1	26.2 26.1	26.2	76.3 77.5	76.9	5.5 5.7	5.6		4.5 4.8	4.7		3.1 3.0	3.1	
					Bottom	9.0	25.9 26.1	26.0	8.1 8.1	8.1	30.0 29.7	29.9	78.6 74.5	76.6	5.8 5.6	5.7	5.7	4.4 4.7	4.6		3.2 3.1	3.2	
6-Aug-14	Sunny	Moderate	17:10	10.3	Surface	1.0	28.8 28.9	28.9	8.4 8.4	8.4	21.5 21.4	21.5	109.2 111.9	110.6	7.4 7.7	7.6	6.9	1.5 1.4	1.5	1.8	3.0 3.1	3.1	3.8
					Middle	5.2	26.7 26.5	26.6	8.1 8.2	8.2	28.2 28.4	28.3	90.3 91.0	90.7	6.2 6.2	6.2		1.8 1.9	1.9		3.4 3.6	3.5	
					Bottom	9.3	26.6 26.3	26.5	8.1 8.2	8.2	28.5 29.5	29.0	72.6 71.9	72.3	5.0 4.9	4.9	4.9	1.9 2.1	2.0		4.7 4.9	4.8	
8-Aug-14	Sunny	Moderate	19:06	10.2	Surface	1.0	29.0 29.0	29.0	8.2 8.2	8.2	19.4 19.5	19.5	82.5 81.8	82.2	5.7 5.7	5.7	5.4	1.8 1.7	1.8	3.0	2.0 2.1	2.1	2.8
					Middle	5.1	26.3 26.8	26.6	8.1 8.1	8.1	27.3 26.1	26.7	75.2 75.9	75.6	5.1 5.2	5.1		3.6 3.5	3.6		3.0 3.0	3.0	
					Bottom	9.2	26.1 25.9	26.0	8.1 8.1	8.1	29.1 29.6	29.4	74.3 75.1	74.7	5.0 5.1	5.1	5.1	3.6 3.5	3.6		3.1 3.3	3.2	
11-Aug-14	Sunny	Moderate	05:40	10.4	Surface	1.0	26.9 26.9	26.9	8.1 8.1	8.1	26.7 26.5	26.6	69.6 69.8	69.7	5.2 5.2	5.2	5.2	7.9 7.4	7.7	7.8	4.7 4.7	4.7	5.4
					Middle	5.2	26.4 26.5	26.5	8.1 8.1	8.1	27.7 27.5	27.6	67.1 68.4	67.8	5.0 5.1	5.1		7.9 7.6	7.8		5.4 5.1	5.3	
					Bottom	9.4	26.3 26.0	26.1	8.1 8.1	8.1	28.7 29.4	29.1	68.0 68.0	68.0	5.1 5.1	5.1	5.1	7.8 7.9	7.9		6.0 6.5	6.3	
13-Aug-14	Rainy	Moderate	07:35	10.5	Surface	1.0	26.5 26.6	26.6	8.0 8.0	8.0	27.7 27.6	27.6	73.2 73.5	73.4	5.0 5.1	5.0	5.0	6.9 6.8	6.9	7.0	5.9 5.9	5.9	7.3
					Middle	5.3	26.6 26.5	26.6	8.0 8.0	8.0	27.6 27.7	27.6	73.4 73.2	73.3	5.1 5.0	5.0		7.0 7.1	7.1		7.5 7.6	7.6	
					Bottom	9.5	26.6 26.5	26.6	8.0 8.0	8.0	27.6 27.6	27.6	73.4 73.1	73.3	5.1 5.0	5.0	5.0	7.0 7.1	7.1		8.3 8.4	8.4	
15-Aug-14	Sunny	Moderate	09:20	9.8	Surface	1.0	28.0 28.1	28.1	8.0 8.0	8.0	20.6 20.6	20.6	68.5 68.1	68.3	4.8 4.8	4.8	4.7	4.3 4.5	4.4	5.1	2.2 2.4	2.3	4.2
					Middle	4.9	27.7 27.6	27.6	8.0 8.0	8.0	22.4 22.5	22.4	65.0 64.7	64.9	4.5 4.5	4.5		5.2 5.3	5.3		5.3 5.0	5.2	
					Bottom	8.8	27.2 27.2	27.2	7.9 7.9	7.9	24.7 24.6	24.6	64.6 64.5	64.6	4.5 4.5	4.5	4.5	5.7 5.6	5.7		5.1 5.1	5.1	
18-Aug-14	Sunny	Moderate	14:33	10.2	Surface	1.0	28.9 28.9	28.9	8.1 8.0	8.1	18.2 18.1	18.2	81.9 84.3	83.1	5.7 5.9	5.8	5.5	1.6 1.6	1.6	1.9	1.6 1.6	1.6	2.0
					Middle	5.1	28.2 28.3	28.3	8.0 8.0	8.0	21.6 21.5	21.5	72.4 71.1	71.8	5.1 5.0	5.1		1.7 1.7	1.7		1.8 1.8	1.8	
					Bottom	9.2	26.3 25.9	26.1	8.0 8.0	8.0	29.5 30.4	30.0	68.3 69.9	69.1	4.7 4.9	4.8	4.8	2.4 2.4	2.4		2.2 2.7	2.5	
20-Aug-14	Rainy	Moderate	17:57	9.8	Surface	1.0	28.1 28.1	28.1	8.0 8.0	8.0	16.0 16.5	16.3	86.3 88.2	87.3	6.2 6.3	6.2	5.7	1.8 2.0	1.9	2.6	4.4 4.4	4.4	3.8
					Middle	4.9	26.8 26.6	26.7	8.0 8.0	8.0	25.1 26.4	25.8	74.4 73.6	74.0	5.1 5.1	5.1		2.7 2.9	2.8		2.6 2.9	2.8	
					Bottom	8.8	26.3 26.4	26.4	7.9 7.9	7.9	27.5 27.1	27.3	69.6 68.6	69.1	4.8 4.8	4.8	4.8	3.1 3.0	3.1		4.1 4.1	4.1	

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 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*
22-Aug-14	Sunny	Moderate	18:56	10.3	Surface	1.0	29.1 29.1	29.1	7.9 7.9	7.9	16.1 15.8	15.9	82.3 84.4	83.4	5.8 5.9	5.9	5.7	2.1 2.0	2.1	3.3	3.2 3.1	3.2	3.3
					Middle	5.2	25.8 25.7	25.7	7.9 7.9	7.9	28.5 28.9	28.7	77.0 78.3	77.7	5.4 5.6	5.5		3.8 3.8	3.8		3.3 3.4	3.4	
					Bottom	9.3	25.5 25.4	25.5	7.9 7.9	7.9	29.5 29.5	29.5	72.5 71.5	72.0	5.0 5.1	5.0	5.0	4.0 4.2	4.1		3.3 3.1	3.2	
25-Aug-14	Sunny	Moderate	20:34	10.6	Surface	1.0	28.3 28.4	28.4	8.2 8.2	8.2	19.9 19.9	19.9	74.9 76.7	75.8	5.3 5.3	5.3	5.2	3.3 3.2	3.3	4.9	1.5 2.3	1.9	2.4
					Middle	5.3	26.1 26.0	26.1	8.1 8.1	8.1	26.9 27.5	27.2	72.2 71.5	71.9	5.1 5.1	5.1		5.5 5.8	5.7		2.5 2.1	2.3	
					Bottom	9.6	25.7 25.7	25.7	8.1 8.1	8.1	28.5 28.6	28.6	71.9 71.7	71.8	5.1 5.0	5.0	5.0	5.5 5.6	5.6		3.1 2.7	2.9	
27-Aug-14	Sunny	Moderate	06:31	10.0	Surface	1.0	27.6 27.6	27.6	8.1 8.1	8.1	22.1 22.2	22.2	70.1 71.5	70.8	5.0 5.2	5.1	5.2	2.5 2.1	2.3	2.2	4.5 4.6	4.6	5.0
					Middle	5.0	27.2 27.2	27.2	8.1 8.1	8.1	24.2 23.3	23.7	70.8 73.2	72.0	5.1 5.2	5.2		2.1 2.3	2.2		4.7 4.9	4.8	
					Bottom	9.0	27.4 27.2	27.3	8.1 8.1	8.1	24.1 24.1	24.1	70.1 76.0	73.1	5.1 5.5	5.3	5.3	2.1 2.3	2.2		5.4 5.7	5.6	
29-Aug-14	Sunny	Moderate	07:49	10.4	Surface	1.0	27.4 27.4	27.4	8.1 8.1	8.1	23.9 24.0	23.9	79.9 79.9	79.9	5.5 5.5	5.5	5.5	4.2 4.5	4.4	4.9	5.8 5.9	5.9	6.1
					Middle	5.2	27.2 27.2	27.2	8.1 8.1	8.1	24.3 24.3	24.3	78.0 77.7	77.9	5.4 5.4	5.4		5.2 5.0	5.1		6.2 6.6	6.4	
					Bottom	9.4	27.2 27.2	27.2	8.1 8.1	8.1	24.4 24.3	24.4	78.3 78.4	78.4	5.4 5.4	5.4	5.4	5.3 5.1	5.2		5.8 6.1	6.0	

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*
1-Aug-14	Sunny	Moderate	16:56	34.3	Surface	1.0	30.0 30.5	30.2	8.2 8.2	8.2	17.2 16.3	16.8	90.5 90.2	90.4	6.2 6.2	6.2	5.7	2.2 2.2	2.2	2.2	1.8 1.8	1.8	2.6
					Middle	17.2	28.5 28.0	28.2	8.1 8.1	8.1	23.8 24.5	24.1	74.3 74.9	74.6	5.1 5.1	5.1		2.2 2.2	2.2		1.8 2.1	2.0	
					Bottom	33.3	26.6 26.0	26.3	8.1 8.1	8.1	27.4 29.7	28.5	70.5 70.4	70.5	4.9 4.8	4.8	4.8	2.3 2.3	2.3		3.6 4.2	3.9	
4-Aug-14	Sunny	Moderate	19:42	33.8	Surface	1.0	30.0 30.0	30.0	8.4 8.4	8.4	18.9 18.8	18.9	76.9 75.4	76.2	5.7 5.5	5.6	5.6	4.8 4.5	4.7	4.6	4.4 4.4	4.4	4.8
					Middle	16.9	29.7 30.0	29.9	8.4 8.4	8.4	19.1 18.8	19.0	75.5 76.3	75.9	5.6 5.6	5.6		4.3 4.6	4.5		5.3 5.4	5.4	
					Bottom	32.8	30.0 30.3	30.1	8.4 8.4	8.4	18.8 19.6	19.2	74.5 79.9	77.2	5.6 5.9	5.7	5.7	4.7 4.4	4.6		4.7 4.6	4.7	
6-Aug-14	Sunny	Moderate	07:50	34.8	Surface	1.0	28.7 28.5	28.6	8.3 8.3	8.3	20.4 20.8	20.6	93.7 97.9	95.8	6.5 6.8	6.6	5.9	1.4 1.5	1.5	1.4	4.8 5.1	5.0	5.3
					Middle	17.4	27.0 26.9	26.9	8.2 8.1	8.2	27.5 27.9	27.7	76.2 74.3	75.3	5.2 5.1	5.1		1.4 1.4	1.4		5.2 5.2	5.2	
					Bottom	33.8	26.9 26.8	26.8	8.2 8.1	8.2	27.9 28.2	28.1	78.6 76.0	77.3	5.4 5.2	5.3	5.3	1.3 1.3	1.3		5.2 5.9	5.6	
8-Aug-14	Sunny	Moderate	10:12	34.8	Surface	1.0	28.9 29.0	28.9	8.2 8.2	8.2	16.5 16.8	16.6	76.9 80.9	78.9	5.4 5.7	5.5	5.3	2.4 2.5	2.5	2.8	2.4 2.2	2.3	2.7
					Middle	17.4	26.6 26.8	26.7	8.1 8.2	8.2	27.1 26.5	26.8	74.3 73.8	74.1	5.1 5.1	5.1		3.1 2.9	3.0		2.4 2.5	2.5	
					Bottom	33.8	26.5 26.5	26.5	8.1 8.1	8.1	28.5 27.4	28.0	70.8 72.8	71.8	4.9 5.0	4.9	4.9	2.8 2.9	2.9		3.0 3.4	3.2	
11-Aug-14	Sunny	Moderate	14:12	34.1	Surface	1.0	28.1 28.2	28.2	8.1 8.1	8.1	23.7 23.6	23.7	77.7 78.0	77.9	5.7 5.8	5.7	5.5	7.3 7.4	7.4	7.7	7.2 7.1	7.2	7.7
					Middle	17.1	26.9 26.8	26.8	8.1 8.1	8.1	26.9 26.9	26.9	69.0 69.9	69.5	5.2 5.2	5.2		7.5 7.6	7.6		7.2 7.5	7.4	
					Bottom	33.1	27.0 26.7	26.8	8.0 8.0	8.0	28.3 28.7	28.5	75.2 73.4	74.3	5.5 5.4	5.5	5.5	8.1 7.9	8.0		8.2 8.5	8.4	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	-	- -	-	-
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	17:18	35.0	Surface	1.0	28.8 28.8	28.8	8.0 8.0	8.0	20.1 20.2	20.2	73.3 73.0	73.2	5.1 5.0	5.1	4.8	5.5 5.9	5.7	6.6	6.4 6.9	6.7	6.7
					Middle	17.5	27.6 27.6	27.6	8.0 8.0	8.0	27.5 27.6	27.6	64.1 64.2	64.2	4.4 4.4	4.4		6.6 6.2	6.4		6.8 6.8	6.8	
					Bottom	34.0	26.4 26.5	26.4	8.0 8.0	8.0	28.8 28.9	28.8	60.1 60.5	60.3	4.1 4.2	4.2	4.2	7.6 7.8	7.7		6.7 6.7	6.7	
18-Aug-14	Sunny	Moderate	06:06	34.7	Surface	1.0	28.9 29.0	29.0	8.0 8.1	8.1	17.4 15.5	16.4	80.2 83.9	82.1	5.6 5.9	5.8	5.5	1.7 1.9	1.8	2.1	2.8 2.8	2.8	3.1
					Middle	17.4	27.1 27.8	27.5	8.0 8.0	8.0	24.9 22.5	23.7	73.8 73.2	73.5	5.1 5.1	5.1		2.2 2.2	2.2		3.0 3.5	3.3	
					Bottom	33.7	26.4 26.7	26.5	8.0 8.0	8.0	27.4 28.1	27.7	71.6 71.9	71.8	5.0 5.0	5.0	5.0	2.4 2.2	2.3		3.0 3.3	3.2	
20-Aug-14	Rainy	Moderate	08:27	34.7	Surface	1.0	28.5 28.5	28.5	8.1 8.1	8.1	15.2 15.5	15.3	85.5 82.8	84.2	6.1 5.9	6.0	5.6	1.6 1.7	1.7	2.2	3.6 4.0	3.8	3.6
					Middle	17.4	26.2 26.0	26.1	8.0 8.0	8.0	26.7 27.9	27.3	72.9 73.3	73.1	5.1 5.1	5.1		2.3 2.4	2.4		3.5 3.9	3.7	
					Bottom	33.7	26.1 25.9	26.0	8.0 7.9	8.0	27.9 28.9	28.4	71.0 70.6	70.8	4.9 4.9	4.9	4.9	2.5 2.6	2.6		2.8 3.7	3.3	

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 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*
22-Aug-14	Sunny	Moderate	10:11	34.6	Surface	1.0	28.0 28.1	28.0	8.0 8.0	8.0	17.6 17.5	17.6	84.0 83.3	83.7	6.0 5.9	5.9	5.6	1.5 1.4	1.5	1.8	4.0 3.8	3.9	4.3
					Middle	17.3	26.2 26.2	26.2	8.0 8.0	8.0	26.7 26.5	26.6	73.0 72.4	72.7	5.2 5.1	5.2		1.5 1.5	1.5		3.6 4.0	3.8	
					Bottom	33.6	26.0 26.0	26.0	8.0 8.0	8.0	27.8 27.6	27.7	69.9 70.0	70.0	4.9 4.9	4.9	4.9	2.3 2.4	2.4		5.1 5.1	5.1	
25-Aug-14	Sunny	Moderate	12:03	34.6	Surface	1.0	28.3 28.3	28.3	8.1 8.1	8.1	19.8 19.8	19.8	75.6 75.4	75.5	5.3 5.3	5.3	5.2	2.1 2.1	2.1	2.6	1.1 1.9	1.5	2.6
					Middle	17.3	25.6 25.7	25.7	8.1 8.1	8.1	29.0 29.0	29.0	73.1 73.6	73.4	5.1 5.1	5.1		2.6 2.5	2.6		3.0 3.4	3.2	
					Bottom	33.6	25.2 25.2	25.2	8.0 8.1	8.1	30.1 30.4	30.2	72.6 72.8	72.7	5.0 5.0	5.0	5.0	3.1 3.0	3.1		3.0 3.3	3.2	
27-Aug-14	Sunny	Moderate	15:21	33.5	Surface	1.0	27.1 26.5	26.8	8.1 8.1	8.1	27.6 23.9	25.7	72.5 77.5	75.0	5.2 5.7	5.5	5.6	2.4 2.3	2.4	2.5	4.9 5.1	5.0	8.2
					Middle	16.8	25.8 27.4	26.6	8.1 8.1	8.1	28.4 23.6	26.0	78.6 74.7	76.7	5.8 5.5	5.6		2.4 2.5	2.5		9.7 9.7	9.7	
					Bottom	32.5	25.6 27.3	26.5	8.1 8.1	8.1	28.9 23.5	26.2	75.0 78.2	76.6	5.6 5.8	5.7	5.7	2.5 2.6	2.6		10.0 9.5	9.8	
29-Aug-14	Sunny	Moderate	15:54	35.5	Surface	1.0	28.4 28.4	28.4	8.1 8.1	8.1	23.6 23.6	23.6	84.9 85.1	85.0	5.8 5.8	5.8	5.5	2.4 2.2	2.3	2.4	4.6 4.7	4.7	4.4
					Middle	17.8	26.4 26.4	26.4	8.1 8.1	8.1	28.1 28.1	28.1	76.1 75.6	75.9	5.2 5.2	5.2		2.3 2.4	2.4		3.7 3.7	3.7	
					Bottom	34.5	26.4 26.4	26.4	8.1 8.1	8.1	28.2 28.2	28.2	78.1 77.9	78.0	5.4 5.4	5.4	5.4	2.5 2.4	2.5		4.7 4.9	4.8	

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
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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*
1-Aug-14	Sunny	Moderate	08:38	34.7	Surface	1.0	29.4 29.4	29.4	8.1 8.1	8.1	18.7 18.7	18.7	76.2 75.7	76.0	5.3 5.2	5.2	5.2	2.5 2.4	2.5	2.6	2.2 2.0	2.1	3.4
					Middle	17.4	27.0 27.0	27.0	8.1 8.1	8.1	27.0 27.0	27.0	74.8 74.9	74.9	5.1 5.1	5.1		2.5 2.5	2.5		3.6 3.4	3.5	
					Bottom	33.7	26.4 26.6	26.5	8.1 8.0	8.1	29.0 28.6	28.8	72.3 71.8	72.1	5.0 5.0	5.0	5.0	2.8 2.7	2.8		4.6 4.7	4.7	
4-Aug-14	Sunny	Moderate	11:41	35.0	Surface	1.0	28.8 29.0	28.9	8.2 8.2	8.2	20.6 20.4	20.5	74.5 79.5	77.0	5.6 6.0	5.8	5.6	4.5 4.5	4.5	4.4	3.0 3.1	3.1	3.2
					Middle	17.5	27.8 27.6	27.7	8.1 8.1	8.1	25.0 24.8	24.9	75.3 70.2	72.8	5.5 5.2	5.4		4.4 4.6	4.5		3.3 2.8	3.1	
					Bottom	34.0	27.6 28.4	28.0	8.1 8.0	8.1	25.8 22.8	24.3	75.2 72.5	73.9	5.6 5.5	5.5	5.5	4.1 4.2	4.2		3.3 3.2	3.3	
6-Aug-14	Sunny	Moderate	17:24	34.8	Surface	1.0	28.9 29.0	28.9	8.5 8.5	8.5	21.4 22.1	21.7	104.1 102.2	103.2	7.2 7.0	7.1	6.2	2.0 1.9	2.0	3.2	3.3 3.0	3.2	3.8
					Middle	17.4	26.0 25.9	25.9	8.1 8.1	8.1	30.3 30.3	30.3	77.2 76.3	76.8	5.3 5.2	5.3		3.4 3.4	3.4		3.8 3.8	3.8	
					Bottom	33.8	25.7 25.7	25.7	8.1 8.2	8.2	30.7 30.7	30.7	69.4 72.8	71.1	4.8 5.0	4.9	4.9	4.0 4.2	4.1		4.3 4.2	4.3	
8-Aug-14	Sunny	Moderate	19:17	35.5	Surface	1.0	29.0 29.1	29.0	8.2 8.2	8.2	19.5 19.4	19.5	84.0 84.6	84.3	5.8 5.8	5.8	5.6	2.6 2.6	2.6	4.0	1.5 1.2	1.4	2.2
					Middle	17.8	25.8 25.6	25.7	8.1 8.1	8.1	29.7 30.1	29.9	76.2 76.4	76.3	5.3 5.4	5.3		4.6 4.8	4.7		1.7 1.5	1.6	
					Bottom	34.5	25.6 25.6	25.6	8.1 8.1	8.1	30.3 30.5	30.4	75.3 74.6	75.0	5.2 5.2	5.2	5.2	4.8 4.8	4.8		3.2 3.9	3.6	
11-Aug-14	Sunny	Moderate	05:33	34.8	Surface	1.0	26.9 26.9	26.9	8.1 8.1	8.1	26.5 26.6	26.6	69.8 73.8	71.8	5.2 5.5	5.4	5.3	6.9 6.8	6.9	7.0	4.6 4.5	4.6	5.2
					Middle	17.4	26.6 25.6	26.1	8.1 8.1	8.1	27.6 30.2	28.9	71.4 68.3	69.9	5.3 5.1	5.2		6.9 6.8	6.9		5.1 5.0	5.1	
					Bottom	33.8	26.5 25.9	26.2	8.1 8.1	8.1	27.7 29.9	28.8	70.8 63.8	67.3	5.3 4.8	5.0	5.0	7.1 7.2	7.2		5.9 5.7	5.8	
13-Aug-14	Rainy	Moderate	07:14	36.2	Surface	1.0	26.5 26.5	26.5	8.0 7.9	7.9	27.7 27.6	27.7	75.2 80.7	78.0	5.2 5.6	5.4	5.3	7.0 7.0	7.0	7.1	4.8 4.7	4.8	5.7
					Middle	18.1	26.5 26.5	26.5	7.9 7.9	7.9	27.6 27.7	27.7	76.9 74.6	75.8	5.3 5.1	5.2		7.1 7.1	7.1		6.4 6.2	6.3	
					Bottom	35.2	26.5 26.5	26.5	7.8 7.9	7.9	27.6 27.8	27.7	76.1 74.3	75.2	5.2 5.1	5.2	5.2	7.1 7.2	7.2		6.0 6.2	6.1	
15-Aug-14	Sunny	Moderate	09:09	34.8	Surface	1.0	28.1 28.1	28.1	8.0 8.0	8.0	20.5 20.5	20.5	67.9 67.9	67.9	4.7 4.7	4.7	4.6	3.5 3.1	3.3	5.1	6.0 5.7	5.9	7.3
					Middle	17.4	27.4 27.4	27.4	7.9 8.0	8.0	23.6 23.5	23.6	62.8 63.0	62.9	4.4 4.4	4.4		5.3 5.2	5.3		7.2 7.4	7.3	
					Bottom	33.8	26.8 26.8	26.8	7.9 7.9	7.9	26.2 26.2	26.2	59.6 60.1	59.9	4.1 4.2	4.1	4.1	6.6 6.8	6.7		8.4 8.8	8.6	
18-Aug-14	Sunny	Moderate	14:41	35.2	Surface	1.0	28.9 29.0	28.9	8.1 8.1	8.1	18.2 18.1	18.1	81.6 81.9	81.8	5.7 5.7	5.7	5.4	1.9 1.8	1.9	2.3	2.0 1.7	1.9	1.9
					Middle	17.6	26.1 26.1	26.1	8.0 8.0	8.0	27.8 29.3	28.5	71.7 72.4	72.1	5.1 5.1	5.1		2.6 2.5	2.6		1.6 1.7	1.7	
					Bottom	34.2	25.2 25.2	25.2	8.0 8.0	8.0	30.9 31.1	31.0	71.3 71.0	71.2	5.0 5.0	5.0	5.0	2.4 2.6	2.5		1.9 2.1	2.0	
20-Aug-14	Rainy	Moderate	18:12	35.3	Surface	1.0	28.1 28.2	28.2	8.1 8.1	8.1	17.0 16.3	16.7	84.0 87.6	85.8	6.0 6.2	6.1	5.6	2.0 2.0	2.0	2.7	4.5 4.0	4.3	3.8
					Middle	17.7	26.1 26.2	26.1	8.0 7.9	8.0	28.2 28.1	28.2	75.0 74.2	74.6	5.2 5.1	5.1		3.1 3.0	3.1		3.6 3.7	3.7	
					Bottom	34.3	26.1 26.1	26.1	8.0 7.9	7.9	28.3 28.3	28.3	68.0 67.8	67.9	4.8 4.8	4.8	4.8	3.0 3.2	3.1		3.1 3.7	3.4	

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 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*
22-Aug-14	Sunny	Moderate	19:10	35.1	Surface	1.0	29.2 29.1	29.1	8.1 8.1	8.1	15.5 16.0	15.7	82.5 83.2	82.9	5.8 5.9	5.8	5.7	2.5 2.2	2.4	4.5	2.4 3.9	3.2	3.6
					Middle	17.6	25.1 25.1	25.1	7.9 8.0	8.0	30.8 30.7	30.7	78.6 78.2	78.4	5.5 5.5	5.5		5.6 5.2	5.4		3.7 3.7	3.7	
					Bottom	34.1	24.9 25.0	25.0	7.9 7.9	7.9	31.3 31.2	31.2	76.7 76.9	76.8	5.4 5.4	5.4	5.4	5.5 5.7	5.6		4.1 3.8	4.0	
25-Aug-14	Sunny	Moderate	20:43	34.9	Surface	1.0	28.5 28.4	28.4	8.2 8.2	8.2	19.8 20.1	19.9	72.7 74.0	73.4	5.2 5.2	5.2	5.2	4.9 5.0	5.0	5.2	1.6 2.4	2.0	2.4
					Middle	17.5	25.7 25.7	25.7	8.1 8.1	8.1	28.4 28.4	28.4	72.1 71.5	71.8	5.1 5.0	5.1		5.2 5.3	5.3		2.1 2.2	2.2	
					Bottom	33.9	25.8 25.7	25.7	8.1 8.1	8.1	28.4 28.6	28.5	68.9 70.7	69.8	4.8 4.9	4.9	4.9	5.2 5.3	5.3		3.1 2.9	3.0	
27-Aug-14	Sunny	Moderate	06:22	35.3	Surface	1.0	27.5 27.5	27.5	8.1 8.1	8.1	22.7 22.6	22.7	72.7 70.9	71.8	5.1 5.2	5.1	5.2	2.4 2.4	2.4	2.5	3.0 3.4	3.2	5.3
					Middle	17.7	27.4 27.1	27.2	8.1 8.0	8.0	23.4 26.9	25.1	71.5 71.1	71.3	5.1 5.2	5.2		2.6 2.8	2.7		4.8 5.5	5.2	
					Bottom	34.3	27.5 27.3	27.4	8.1 8.1	8.1	22.7 23.6	23.1	72.9 75.9	74.4	5.1 5.3	5.2	5.2	2.4 2.6	2.5		7.7 7.5	7.6	
29-Aug-14	Sunny	Moderate	07:34	36.1	Surface	1.0	27.3 27.3	27.3	8.1 8.1	8.1	24.0 24.0	24.0	79.5 79.8	79.7	5.5 5.5	5.5	5.4	4.6 4.6	4.6	5.1	5.3 5.3	5.3	5.0
					Middle	18.1	27.1 26.6	26.8	8.1 8.1	8.1	24.6 26.6	25.6	77.1 77.0	77.1	5.3 5.3	5.3		5.5 5.1	5.3		4.4 4.3	4.4	
					Bottom	35.1	26.1 26.9	26.5	8.1 8.1	8.1	28.5 25.6	27.0	73.4 74.8	74.1	5.1 5.2	5.1	5.1	5.4 5.2	5.3		4.8 5.7	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 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*
1-Aug-14	Sunny	Moderate	14:46	3.2	Surface	1.0	30.4 30.4	30.4	8.2 8.1	8.2	20.9 21.3	21.1	120.3 125.6	123.0	8.1 8.4	8.2	8.2	6.0 6.5	6.3	7.4	4.3 4.4	4.4	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	30.4 30.4	30.4	8.1 8.2	8.2	21.3 21.1	21.2	114.7 107.6	111.2	7.7 7.2	7.4	7.4	8.8 8.0	8.4		5.2 6.0	5.6	
4-Aug-14	Sunny	Moderate	17:38	3.1	Surface	1.0	31.4 31.5	31.5	8.5 8.5	8.5	19.4 19.5	19.4	168.9 158.4	163.7	10.5 9.8	10.2	10.2	3.7 3.6	3.7	4.0	3.9 3.6	3.8	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	31.1 31.1	31.1	8.5 8.5	8.5	19.9 19.9	19.9	149.1 148.7	148.9	9.3 9.2	9.3	9.3	4.3 4.3	4.3		4.9 4.2	4.6	
6-Aug-14	Sunny	Moderate	09:51	3.2	Surface	1.0	30.2 30.0	30.1	8.4 8.5	8.4	20.7 21.2	21.0	94.8 95.0	94.9	6.4 6.4	6.4	6.4	6.6 6.3	6.5	6.5	2.9 2.7	2.8	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.8 29.0	29.4	9.4 8.4	8.9	22.1 22.9	22.5	95.4 90.1	92.8	6.4 6.1	6.3	6.3	6.5 6.4	6.5		2.8 3.0	2.9	
8-Aug-14	Sunny	Moderate	11:50	3.0	Surface	1.0	29.1 29.5	29.3	7.9 8.0	7.9	22.1 20.7	21.4	80.8 88.4	84.6	5.5 6.0	5.8	5.8	11.0 10.5	10.8	11.0	3.3 3.4	3.4	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.0	29.2 29.0	29.1	7.9 7.8	7.9	22.5 22.6	22.5	86.0 91.3	88.7	5.8 6.2	6.0	6.0	10.9 11.2	11.1		5.2 4.9	5.1	
11-Aug-14	Sunny	Moderate	12:11	3.4	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	23.0 23.0	23.0	73.7 75.6	74.7	5.0 5.1	5.1	5.1	21.9 22.4	22.2	23.0	21.3 21.8	21.6	23.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.9 28.9	28.9	8.2 8.2	8.2	23.0 23.0	23.0	78.5 74.4	76.5	5.3 5.1	5.2	5.2	23.5 23.8	23.7		24.5 24.2	24.4	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	14:53	3.2	Surface	1.0	29.7 29.7	29.7	7.8 7.8	7.8	21.4 21.5	21.5	86.4 85.8	86.1	6.0 6.0	6.0	6.0	7.7 7.6	7.7	7.7	4.3 3.8	4.1	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.7 29.2	28.9	7.7 7.8	7.8	22.7 22.2	22.5	83.0 84.5	83.8	5.8 5.9	5.9	5.9	7.8 7.4	7.6		4.8 4.9	4.9	
18-Aug-14	Sunny	Moderate	08:14	3.1	Surface	1.0	29.7 29.7	29.7	7.9 7.9	7.9	18.7 18.5	18.6	91.1 91.9	91.5	6.3 6.3	6.3	6.3	8.1 8.2	8.2	8.8	2.0 2.5	2.3	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	29.5 29.7	29.6	7.9 7.9	7.9	19.9 19.7	19.8	92.0 92.0	92.0	6.3 6.3	6.3	6.3	9.2 9.3	9.3		2.9 3.3	3.1	
20-Aug-14	Rainy	Moderate	10:34	3.2	Surface	1.0	29.0 29.2	29.1	8.1 8.1	8.1	15.2 15.2	15.2	94.5 95.7	95.1	6.7 6.8	6.7	6.7	5.2 5.1	5.2	5.3	4.2 3.8	4.0	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.1 29.0	29.0	8.0 8.0	8.0	17.8 17.8	17.8	95.4 94.4	94.9	6.6 6.6	6.6	6.6	5.4 5.2	5.3		4.2 3.8	4.0	

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*
22-Aug-14	Sunny	Moderate	12:07	3.0	Surface	1.0	29.7 29.5	29.6	8.0 8.0	8.0	17.7 17.9	17.8	85.4 81.4	83.4	5.9 5.6	5.8	5.8	6.5 6.8	6.7	6.7	2.7 3.2	3.0	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.0	28.4 28.7	28.5	7.9 8.0	8.0	20.8 21.2	21.0	91.0 83.1	87.1	6.3 5.7	6.0	6.0	6.5 6.8	6.7		3.6 3.8	3.7	
25-Aug-14	Sunny	Moderate	14:00	3.1	Surface	1.0	28.6 28.6	28.6	8.1 8.0	8.0	20.3 20.1	20.2	96.7 102.7	99.7	6.7 7.1	6.9	6.9	10.2 10.5	10.4	10.6	5.7 5.5	5.6	6.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	28.5 28.7	28.6	8.0 8.1	8.1	21.4 21.2	21.3	91.0 87.7	89.4	6.3 6.1	6.2	6.2	11.1 10.3	10.7		6.4 6.9	6.7	
27-Aug-14	Sunny	Moderate	13:04	3.3	Surface	1.0	28.5 28.5	28.5	8.1 8.1	8.1	21.8 21.8	21.8	96.9 96.5	96.7	6.7 6.6	6.7	6.7	5.9 6.0	6.0	6.0	7.0 7.3	7.2	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.5 28.5	28.5	8.1 8.1	8.1	21.8 21.8	21.8	97.8 96.6	97.2	6.7 6.7	6.7	6.7	5.8 5.9	5.9		7.4 7.1	7.3	
29-Aug-14	Sunny	Moderate	14:07	3.1	Surface	1.0	29.4 29.4	29.4	7.9 7.9	7.9	24.4 24.4	24.4	83.2 85.6	84.4	5.6 5.7	5.6	5.6	7.4 7.2	7.3	8.2	3.0 4.2	3.6	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	28.5 28.6	28.6	7.9 7.8	7.8	24.9 24.8	24.8	83.0 86.2	84.6	5.6 5.8	5.7	5.7	8.9 9.0	9.0		3.8 3.9	3.9	

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)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*
1-Aug-14	Sunny	Moderate	09:54	3.3	Surface	1.0	29.9 29.9	29.9	8.3 8.4	8.4	20.3 20.3	20.3	114.2 117.0	115.6	7.8 7.9	7.8	7.8	5.1 5.2	5.2	6.6	4.1 4.6	4.4	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.8 29.8	29.8	8.3 8.3	8.3	20.6 20.5	20.6	109.2 116.0	112.6	7.4 7.9	7.6	7.6	7.7 8.0	7.9		5.7 6.7	6.2	
4-Aug-14	Sunny	Moderate	13:36	3.2	Surface	1.0	31.5 31.3	31.4	8.4 8.3	8.4	19.2 19.2	19.2	165.9 172.1	169.0	11.0 11.3	11.2	11.2	3.5 3.6	3.6	3.6	2.4 2.4	2.4	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	30.8 31.4	31.1	8.2 8.4	8.3	19.8 19.2	19.5	153.9 176.2	165.1	10.3 11.7	11.0	11.0	3.5 3.5	3.5		4.0 3.6	3.8	
6-Aug-14	Sunny	Moderate	15:16	3.0	Surface	1.0	30.0 29.9	30.0	8.6 8.6	8.6	19.7 19.7	19.7	108.9 111.1	110.0	7.4 7.6	7.5	7.5	6.6 6.7	6.7	6.7	2.8 2.8	2.8	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.0	29.9 30.0	29.9	8.6 8.6	8.6	22.6 19.6	21.1	101.1 102.6	101.9	6.8 6.9	6.8	6.8	6.7 6.5	6.6		5.0 4.6	4.8	
8-Aug-14	Sunny	Moderate	17:01	3.2	Surface	1.0	30.4 30.4	30.4	8.2 8.1	8.2	20.6 20.6	20.6	134.8 127.0	130.9	9.0 8.5	8.8	8.8	9.7 9.3	9.5	10.0	4.1 4.3	4.2	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	30.5 30.3	30.4	8.2 8.0	8.1	20.6 20.7	20.6	131.8 121.5	126.7	8.8 8.2	8.5	8.5	9.9 10.8	10.4		4.4 4.6	4.5	
11-Aug-14	Sunny	Moderate	07:00	3.3	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	22.1 22.1	22.1	85.2 83.8	84.5	5.8 5.7	5.8	5.8	5.8 5.4	5.6	5.8	7.9 7.5	7.7	8.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.9 28.9	28.9	8.2 8.2	8.2	22.1 22.2	22.1	84.3 86.5	85.4	5.8 5.9	5.8	5.8	5.7 6.0	5.9		9.9 9.4	9.7	
13-Aug-14	Rainy	Moderate	09:22	3.2	Surface	1.0	28.5 28.5	28.5	7.8 7.8	7.8	21.8 21.7	21.8	75.5 76.7	76.1	5.2 5.3	5.2	5.2	9.4 9.1	9.3	9.3	4.1 4.3	4.2	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.5 28.5	28.5	7.8 7.7	7.8	21.8 21.6	21.7	76.1 80.1	78.1	5.2 5.5	5.4	5.4	9.3 9.0	9.2		4.4 4.6	4.5	
15-Aug-14	Sunny	Moderate	10:57	3.2	Surface	1.0	28.9 28.9	28.9	7.8 7.8	7.8	20.9 21.0	21.0	78.8 79.9	79.4	5.6 5.6	5.6	5.6	6.6 6.9	6.8	6.8	5.1 5.3	5.2	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.7 28.7	28.7	7.8 7.8	7.8	21.4 21.4	21.4	81.4 78.9	80.2	5.8 5.6	5.7	5.7	6.9 6.6	6.8		5.6 6.0	5.8	
18-Aug-14	Sunny	Moderate	12:35	3.2	Surface	1.0	30.3 30.4	30.4	8.0 8.0	8.0	19.6 19.5	19.6	104.1 106.3	105.2	7.0 7.2	7.1	7.1	5.0 5.3	5.2	5.9	2.7 2.7	2.7	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.9 30.2	30.1	7.9 8.0	7.9	20.7 20.5	20.6	99.9 105.4	102.7	6.8 7.1	6.9	6.9	6.3 6.6	6.5		3.2 3.9	3.6	
20-Aug-14	Rainy	Moderate	16:06	3.0	Surface	1.0	29.1 29.1	29.1	8.0 8.1	8.0	15.9 16.0	16.0	99.7 101.6	100.7	7.0 7.1	7.1	7.1	8.9 9.5	9.2	9.1	4.7 4.4	4.6	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.0	29.3 29.1	29.2	8.0 8.1	8.0	16.4 15.9	16.2	99.9 100.5	100.2	7.0 7.1	7.0	7.0	8.9 8.9	8.9		5.3 4.3	4.8	

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)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*
22-Aug-14	Sunny	Moderate	17:18	3.2	Surface	1.0	29.4 29.6	29.5	8.1 8.1	8.1	18.1 18.2	18.2	92.7 95.7	94.2	6.4 6.6	6.5	6.5	16.7 16.4	16.6	16.7	2.4 2.2	2.3	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.8 28.6	28.7	8.0 7.9	8.0	21.1 21.0	21.0	93.2 93.8	93.5	6.4 6.5	6.4	6.4	16.6 16.7	16.7		3.3 4.1	3.7	
25-Aug-14	Sunny	Moderate	18:37	3.2	Surface	1.0	29.9 30.0	29.9	8.4 8.4	8.4	20.0 19.9	20.0	126.9 136.7	131.8	8.6 9.3	8.9	8.9	6.7 6.9	6.8	6.8	3.4 3.4	3.4	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.9 29.7	29.8	8.4 8.3	8.3	20.0 20.3	20.2	132.4 119.9	126.2	9.0 8.2	8.6	8.6	6.7 6.6	6.7		6.9 6.9	6.9	
27-Aug-14	Sunny	Moderate	07:32	3.3	Surface	1.0	28.4 28.4	28.4	8.1 8.1	8.1	21.7 21.7	21.7	90.8 91.1	91.0	6.3 6.3	6.3	6.3	10.1 10.1	10.1	10.3	8.2 8.0	8.1	10.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.4 28.4	28.4	8.1 8.1	8.1	21.7 21.7	21.7	90.7 91.7	91.2	6.3 6.3	6.3	6.3	10.3 10.4	10.4		12.0 11.9	12.0	
29-Aug-14	Sunny	Moderate	09:20	3.3	Surface	1.0	28.2 28.2	28.2	8.0 8.0	8.0	23.3 23.3	23.3	80.9 81.2	81.1	5.5 5.6	5.6	5.6	11.0 11.5	11.3	11.4	5.5 5.4	5.5	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.1 28.2	28.2	8.0 8.0	8.0	23.3 23.3	23.3	81.9 80.8	81.4	5.6 5.5	5.6	5.6	11.5 11.4	11.5		6.1 5.9	6.0	

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 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*
1-Aug-14	Sunny	Moderate	15:00	3.7	Surface	1.0	30.9 31.0	30.9	8.2 8.2	8.2	21.4 21.3	21.3	136.7 131.6	134.2	9.1 8.7	8.9	8.9	5.8 5.1	5.5	6.0	3.4 3.2	3.3	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	30.8 30.9	30.8	8.2 8.2	8.2	21.6 21.6	21.6	124.2 134.1	129.2	8.2 8.9	8.6	8.6	6.3 6.6	6.5		3.2 3.3	3.3	
4-Aug-14	Sunny	Moderate	17:50	3.6	Surface	1.0	30.7 30.6	30.7	8.5 8.5	8.5	19.5 19.6	19.6	141.5 148.7	145.1	8.8 9.3	9.1	9.1	4.6 4.8	4.7	4.7	3.1 3.4	3.3	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	30.4 30.2	30.3	8.5 8.4	8.5	21.0 21.8	21.4	150.9 131.0	141.0	9.4 8.1	8.8	8.8	4.7 4.6	4.7		5.3 5.4	5.4	
6-Aug-14	Sunny	Moderate	09:37	3.7	Surface	1.0	29.1 29.5	29.3	8.5 8.4	8.5	22.1 21.5	21.8	86.2 90.8	88.5	5.9 6.2	6.0	6.0	4.5 4.6	4.6	4.6	2.8 3.2	3.0	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.8 28.2	28.5	8.5 8.5	8.5	23.0 24.6	23.8	83.4 86.7	85.1	5.7 5.9	5.8	5.8	4.6 4.6	4.6		3.6 3.4	3.5	
8-Aug-14	Sunny	Moderate	11:34	3.3	Surface	1.0	29.6 29.6	29.6	8.4 8.2	8.3	19.8 19.8	19.8	92.5 97.6	95.1	6.3 6.7	6.5	6.5	8.2 8.1	8.2	8.7	2.9 2.4	2.7	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.6 29.3	29.5	8.3 8.4	8.4	20.8 21.4	21.1	95.4 93.4	94.4	6.5 6.4	6.4	6.4	9.1 9.2	9.2		3.3 4.1	3.7	
11-Aug-14	Sunny	Moderate	12:26	3.5	Surface	1.0	29.2 29.2	29.2	8.2 8.2	8.2	22.1 22.1	22.1	86.9 85.3	86.1	5.9 5.8	5.8	5.8	7.3 7.6	7.5	8.4	4.8 4.6	4.7	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.0 29.2	29.1	8.2 8.2	8.2	22.2 22.1	22.1	84.6 86.3	85.5	5.8 5.9	5.8	5.8	9.4 9.0	9.2		6.1 6.2	6.2	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	15:24	3.7	Surface	1.0	30.0 29.9	29.9	7.8 7.9	7.9	20.8 20.9	20.9	88.5 88.3	88.4	6.1 6.1	6.1	6.1	6.4 6.5	6.5	6.5	5.4 5.9	5.7	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.6 29.1	29.3	7.9 7.8	7.8	21.5 21.9	21.7	88.0 86.8	87.4	6.1 6.1	6.1	6.1	6.2 6.5	6.4		6.3 6.7	6.5	
18-Aug-14	Sunny	Moderate	07:58	3.2	Surface	1.0	29.6 29.7	29.7	7.9 7.9	7.9	18.4 18.5	18.4	96.4 97.6	97.0	6.6 6.7	6.7	6.7	7.0 6.7	6.9	8.8	2.1 2.8	2.5	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.7 29.7	29.7	7.9 7.8	7.9	18.6 18.6	18.6	97.2 98.4	97.8	6.7 6.8	6.7	6.7	10.2 10.9	10.6		3.4 3.4	3.4	
20-Aug-14	Rainy	Moderate	10:16	3.5	Surface	1.0	29.3 29.3	29.3	8.1 8.1	8.1	16.1 15.8	16.0	89.1 90.1	89.6	6.2 6.3	6.3	6.3	5.9 5.8	5.9	5.9	3.8 3.7	3.8	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.3 29.4	29.4	8.0 8.0	8.0	19.5 18.9	19.2	88.9 87.4	88.2	6.1 6.0	6.1	6.1	5.8 5.9	5.9		5.7 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 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*
22-Aug-14	Sunny	Moderate	11:54	3.6	Surface	1.0	29.0 29.0	29.0	8.0 8.1	8.0	17.8 17.8	17.8	80.5 83.6	82.1	5.6 5.8	5.7	5.7	9.5 9.7	9.6	9.7	2.2 2.0	2.1	2.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.3 28.7	28.5	7.9 8.0	7.9	21.9 22.2	22.1	77.8 83.9	80.9	5.4 5.7	5.6	5.6	9.9 9.6	9.8		2.2 2.0	2.1	
25-Aug-14	Sunny	Moderate	13:46	3.4	Surface	1.0	29.0 29.3	29.1	8.1 8.1	8.1	19.6 19.3	19.5	94.8 97.1	96.0	6.6 6.7	6.6	6.6	7.3 6.9	7.1	7.7	3.2 3.6	3.4	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.7 28.7	28.7	8.1 8.0	8.0	20.7 20.9	20.8	95.9 92.3	94.1	6.6 6.4	6.5	6.5	8.0 8.3	8.2		5.8 5.6	5.7	
27-Aug-14	Sunny	Moderate	13:17	3.7	Surface	1.0	28.4 28.4	28.4	8.1 8.1	8.1	21.6 21.6	21.6	91.4 91.9	91.7	6.3 6.3	6.3	6.3	6.0 6.4	6.2	6.2	7.5 7.3	7.4	8.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.4 28.4	28.4	8.1 8.1	8.1	21.6 21.6	21.6	91.7 93.1	92.4	6.3 6.4	6.4	6.4	6.0 6.3	6.2		9.1 9.3	9.2	
29-Aug-14	Sunny	Moderate	14:20	3.7	Surface	1.0	29.0 29.1	29.0	8.0 8.0	8.0	24.1 24.1	24.1	90.8 90.2	90.5	6.1 6.1	6.1	6.1	5.4 5.2	5.3	5.4	4.4 4.7	4.6	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.5 28.7	28.6	8.0 8.0	8.0	24.4 24.3	24.3	91.5 89.6	90.6	6.2 6.1	6.1	6.1	5.4 5.4	5.4		3.6 3.7	3.7	

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 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*
1-Aug-14	Sunny	Moderate	09:41	3.5	Surface	1.0	29.8 29.9	29.8	8.0 8.0	8.0	20.5 20.4	20.5	109.6 109.7	109.7	7.4 7.4	7.4	7.4	2.9 3.1	3.0	3.3	3.2 3.1	3.2	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.8 29.7	29.8	8.0 7.9	7.9	20.7 20.7	20.7	109.6 108.6	109.1	7.4 7.4	7.4	7.4	3.4 3.7	3.6		3.8 4.5	4.2	
4-Aug-14	Sunny	Moderate	13:22	3.7	Surface	1.0	30.3 30.4	30.4	8.2 8.2	8.2	19.4 19.3	19.4	140.1 144.2	142.2	9.4 9.7	9.6	9.6	4.7 4.6	4.7	4.7	2.9 2.8	2.9	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	30.2 30.4	30.3	8.1 8.2	8.2	20.6 20.4	20.5	128.5 132.7	130.6	8.6 9.0	8.8	8.8	4.6 4.8	4.7		3.6 3.7	3.7	
6-Aug-14	Sunny	Moderate	15:29	3.5	Surface	1.0	29.5 29.5	29.5	8.5 8.5	8.5	20.6 20.6	20.6	93.9 95.1	94.5	6.4 6.5	6.4	6.4	6.5 6.6	6.6	6.6	3.4 4.0	3.7	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.2 29.1	29.2	8.5 8.5	8.5	23.0 22.5	22.8	94.7 91.5	93.1	6.4 6.2	6.3	6.3	6.4 6.5	6.5		4.4 4.9	4.7	
8-Aug-14	Sunny	Moderate	17:15	3.4	Surface	1.0	30.4 30.3	30.3	8.1 8.1	8.1	20.8 20.9	20.9	130.8 126.6	128.7	8.8 8.5	8.6	8.6	6.9 7.4	7.2	7.7	5.5 4.9	5.2	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	30.2 30.2	30.2	8.1 8.0	8.0	21.2 21.1	21.1	128.2 121.7	125.0	8.6 8.2	8.4	8.4	8.4 7.7	8.1		5.7 6.3	6.0	
11-Aug-14	Sunny	Moderate	06:47	3.6	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	22.1 22.1	22.1	82.1 85.2	83.7	5.6 5.8	5.7	5.7	6.9 7.0	7.0	7.0	9.9 9.9	9.9	10.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.9 28.9	28.9	8.2 8.2	8.2	22.1 22.2	22.2	87.2 82.8	85.0	6.0 5.6	5.8	5.8	7.1 6.8	7.0		10.4 10.0	10.2	
13-Aug-14	Rainy	Moderate	09:02	3.4	Surface	1.0	28.4 28.4	28.4	7.8 7.9	7.8	21.6 21.7	21.7	81.6 78.8	80.2	5.6 5.4	5.5	5.5	8.3 9.0	8.7	8.6	5.5 4.9	5.2	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	28.4 28.5	28.4	7.7 7.8	7.8	21.8 22.0	21.9	83.1 79.9	81.5	5.7 5.5	5.6	5.6	8.1 8.7	8.4		5.7 6.3	6.0	
15-Aug-14	Sunny	Moderate	10:44	3.6	Surface	1.0	28.5 28.4	28.4	7.8 7.8	7.8	21.6 21.8	21.7	76.5 78.4	77.5	5.4 5.6	5.5	5.5	12.4 12.2	12.3	12.3	10.2 10.2	10.2	10.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.2 28.3	28.3	7.7 7.8	7.8	22.2 22.1	22.2	81.4 77.1	79.3	5.8 5.5	5.6	5.6	12.3 12.3	12.3		11.7 11.3	11.5	
18-Aug-14	Sunny	Moderate	12:50	3.4	Surface	1.0	30.4 30.4	30.4	8.1 8.1	8.1	18.9 19.0	18.9	111.4 110.9	111.2	7.5 7.5	7.5	7.5	6.0 5.8	5.9	6.5	2.3 2.1	2.2	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	30.3 30.3	30.3	8.0 8.0	8.0	19.1 19.1	19.1	108.4 110.8	109.6	7.3 7.5	7.4	7.4	7.0 7.2	7.1		3.1 3.5	3.3	
20-Aug-14	Rainy	Moderate	16:21	3.5	Surface	1.0	29.1 29.0	29.1	8.0 8.1	8.0	16.3 16.2	16.3	97.8 96.0	96.9	6.9 6.8	6.8	6.8	12.6 12.5	12.6	12.6	6.7 6.1	6.4	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.1 29.1	29.1	7.9 8.0	8.0	16.4 16.6	16.5	101.4 94.8	98.1	7.1 6.6	6.9	6.9	12.8 12.4	12.6		8.0 7.1	7.6	

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)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*
22-Aug-14	Sunny	Moderate	17:32	3.6	Surface	1.0	29.1 29.0	29.1	8.0 8.0	8.0	16.9 17.1	17.0	88.6 89.2	88.9	6.2 6.2	6.2	6.2	12.7 13.2	13.0	13.3	9.1 9.5	9.3	9.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.0 28.7	28.9	8.0 7.9	7.9	19.7 18.4	19.0	89.3 88.4	88.9	6.2 6.2	6.2	6.2	13.7 13.4	13.6		8.9 8.9	8.9	
25-Aug-14	Sunny	Moderate	18:53	3.3	Surface	1.0	29.9 29.8	29.9	8.4 8.4	8.4	19.8 19.9	19.9	134.1 132.4	133.3	9.1 9.0	9.1	9.1	6.0 6.5	6.3	7.6	4.0 4.5	4.3	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.7 29.8	29.8	8.3 8.3	8.3	20.4 20.7	20.5	131.7 133.5	132.6	8.9 9.1	9.0	9.0	8.6 9.0	8.8		6.4 6.8	6.6	
27-Aug-14	Sunny	Moderate	07:18	3.5	Surface	1.0	28.3 28.4	28.3	8.1 8.1	8.1	21.7 21.7	21.7	85.0 88.2	86.6	5.9 6.1	6.0	6.0	5.5 5.5	5.5	5.5	5.6 5.9	5.8	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	28.3 28.4	28.3	8.1 8.1	8.1	21.7 21.7	21.7	83.3 86.7	85.0	5.8 6.0	5.9	5.9	5.3 5.6	5.5		8.0 7.9	8.0	
29-Aug-14	Sunny	Moderate	09:06	3.7	Surface	1.0	27.9 27.9	27.9	7.9 7.9	7.9	23.3 23.2	23.3	76.9 77.6	77.3	5.3 5.4	5.3	5.3	6.4 6.4	6.4	6.4	5.5 5.9	5.7	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	27.8 27.8	27.8	7.9 7.9	7.9	23.3 23.3	23.3	77.2 78.5	77.9	5.3 5.4	5.4	5.4	6.5 6.3	6.4		4.9 5.4	5.2	

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 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*
1-Aug-14	Sunny	Moderate	15:49	10.8	Surface	1.0	30.0 29.7	29.8	8.2 8.2	8.2	15.8 16.5	16.1	84.1 86.8	85.5	5.8 6.0	5.9	5.6	2.5 2.4	2.5	3.2	2.6 2.9	2.8	3.0
					Middle	5.4	28.5 28.9	28.7	8.1 8.1	8.1	21.6 21.3	21.4	76.8 76.0	76.4	5.3 5.2	5.2		3.4 3.5	3.5		2.8 3.0	2.9	
					Bottom	9.8	27.9 27.7	27.8	8.1 8.1	8.1	24.5 24.8	24.7	73.9 71.0	72.5	5.0 4.9	4.9	4.9	3.5 3.5	3.5		3.2 3.1	3.2	
4-Aug-14	Sunny	Moderate	18:37	9.0	Surface	1.0	29.9 29.8	29.9	8.3 8.3	8.3	14.6 13.9	14.2	73.1 73.2	73.2	5.5 5.4	5.4	5.4	2.2 2.5	2.4	2.3	2.7 3.3	3.0	3.1
					Middle	4.5	29.4 29.4	29.4	8.2 8.3	8.2	20.0 19.7	19.8	71.2 75.3	73.3	5.3 5.6	5.4		2.3 2.1	2.2		2.9 3.2	3.1	
					Bottom	8.0	26.7 26.5	26.6	8.1 8.1	8.1	27.8 28.2	28.0	77.9 74.5	76.2	5.8 5.5	5.7	5.7	2.4 2.2	2.3		2.9 3.3	3.1	
6-Aug-14	Sunny	Moderate	09:04	10.0	Surface	1.0	29.0 29.1	29.1	8.2 8.2	8.2	19.6 19.5	19.6	85.0 85.6	85.3	5.9 5.9	5.9	5.5	2.0 1.8	1.9	2.2	4.1 4.1	4.1	4.7
					Middle	5.0	27.3 27.6	27.4	8.1 8.1	8.1	26.8 25.5	26.2	75.0 74.8	74.9	5.1 5.1	5.1		2.1 2.3	2.2		4.6 4.8	4.7	
					Bottom	9.0	27.2 27.5	27.3	8.1 8.1	8.1	27.7 26.4	27.0	71.9 72.8	72.4	4.9 5.0	4.9	4.9	2.5 2.4	2.5		5.1 5.2	5.2	
8-Aug-14	Sunny	Moderate	11:21	10.6	Surface	1.0	29.2 29.4	29.3	8.2 8.2	8.2	14.7 14.7	14.7	81.1 83.0	82.1	5.7 5.9	5.8	5.5	3.1 3.1	3.1	3.8	0.9 1.2	1.1	1.4
					Middle	5.3	28.2 28.1	28.1	8.2 8.1	8.2	21.0 21.5	21.2	75.0 75.6	75.3	5.2 5.2	5.2		4.1 4.2	4.2		1.4 1.3	1.4	
					Bottom	9.6	26.9 26.9	26.9	8.1 8.1	8.1	26.7 26.4	26.5	72.4 73.0	72.7	5.0 5.1	5.0	5.0	4.2 4.2	4.2		1.7 1.9	1.8	
11-Aug-14	Sunny	Moderate	13:07	10.3	Surface	1.0	28.6 28.4	28.5	8.0 8.0	8.0	22.4 22.6	22.5	79.4 77.6	78.5	5.8 5.7	5.8	5.7	10.2 10.4	10.3	10.2	4.5 4.7	4.6	5.5
					Middle	5.2	27.9 27.8	27.9	8.0 8.0	8.0	24.2 24.3	24.2	74.9 76.1	75.5	5.6 5.6	5.6		10.1 10.2	10.2		5.2 5.4	5.3	
					Bottom	9.3	27.9 27.7	27.8	8.0 8.0	8.0	24.5 24.6	24.6	77.7 75.0	76.4	5.7 5.6	5.6	5.6	10.2 10.2	10.2		6.6 6.5	6.6	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	-	- -	-	-
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	16:26	10.4	Surface	1.0	28.7 28.6	28.7	8.0 8.0	8.0	20.4 20.5	20.4	73.5 72.4	73.0	5.1 5.0	5.0	**4.7**	8.7 8.8	8.8	9.8	8.4 8.5	8.5	8.5
					Middle	5.2	27.7 27.7	27.7	7.9 7.9	7.9	22.4 22.4	22.4	63.4 63.8	63.6	4.4 4.4	4.4		10.2 9.9	10.1		8.9 8.6	8.8	
					Bottom	9.4	27.2 27.3	27.2	7.9 7.9	7.9	24.2 24.1	24.1	61.6 62.0	61.8	4.3 4.3	4.3	**4.3**	10.5 10.7	10.6		7.7 8.7	8.2	
18-Aug-14	Sunny	Moderate	07:16	10.8	Surface	1.0	29.1 29.1	29.1	8.0 8.0	8.0	14.8 14.6	14.7	86.5 87.8	87.2	6.1 6.2	6.2	5.7	4.9 4.8	4.9	5.2	1.5 1.6	1.6	1.6
					Middle	5.4	28.8 28.9	28.9	8.0 7.9	7.9	17.8 17.6	17.7	75.1 74.0	74.6	5.3 5.2	5.2		5.2 5.1	5.2		1.4 1.7	1.6	
					Bottom	9.8	26.6 26.8	26.7	7.9 7.7	7.8	25.9 27.0	26.4	70.7 69.4	70.1	4.9 4.8	4.8	4.8	5.4 5.5	5.5		1.6 1.7	1.7	
20-Aug-14	Rainy	Moderate	09:39	9.8	Surface	1.0	28.6 28.6	28.6	7.9 8.0	7.9	15.0 15.7	15.4	87.0 85.3	86.2	6.2 6.1	6.1	5.8	2.7 2.7	2.7	3.1	3.1 3.0	3.1	3.3
					Middle	4.9	27.6 27.6	27.6	7.8 7.8	7.8	20.6 21.8	21.2	76.1 80.6	78.4	5.3 5.6	5.4		3.3 3.2	3.3		3.1 4.1	3.6	
					Bottom	8.8	27.5 27.1	27.3	7.8 7.8	7.8	24.0 24.3	24.2	73.4 70.8	72.1	5.1 5.0	5.1	5.1	3.2 3.5	3.4		3.3 3.2	3.3	

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*
22-Aug-14	Sunny	Moderate	11:25	9.7	Surface	1.0	28.5 28.5	28.5	7.9 7.9	7.9	15.0 14.9	14.9	80.6 79.6	80.1	5.8 5.7	5.7	5.5	3.0 3.3	3.2	4.2	3.1 3.1	3.1	3.3
					Middle	4.9	27.6 27.3	27.4	7.8 7.8	7.8	19.8 22.2	21.0	73.3 75.3	74.3	5.2 5.3	5.2		4.4 4.8	4.6		3.4 3.4	3.4	
					Bottom	8.7	27.5 27.2	27.3	7.8 7.7	7.8	21.8 23.6	22.7	70.6 70.2	70.4	4.9 4.9	4.9	4.9	5.0 4.8	4.9		3.4 3.1	3.3	
25-Aug-14	Sunny	Moderate	13:12	10.6	Surface	1.0	29.2 29.4	29.3	8.1 8.1	8.1	16.2 15.8	16.0	75.4 76.9	76.2	5.3 5.4	5.3	5.2	5.2 5.3	5.3	5.4	2.0 1.7	1.9	2.2
					Middle	5.3	27.9 28.2	28.1	8.1 8.1	8.1	19.2 18.4	18.8	72.7 72.4	72.6	5.1 5.0	5.0		5.2 5.2	5.2		2.1 2.4	2.3	
					Bottom	9.6	27.5 27.4	27.4	8.0 8.1	8.0	22.5 22.5	22.5	68.2 70.3	69.3	4.8 4.9	4.8	4.8	5.6 5.5	5.6		2.0 2.9	2.5	
27-Aug-14	Sunny	Moderate	14:25	10.0	Surface	1.0	27.7 27.9	27.8	8.1 8.1	8.1	20.9 20.8	20.8	71.5 74.1	72.8	5.1 5.2	5.2	5.3	6.5 6.4	6.5	6.5	3.6 3.1	3.4	4.9
					Middle	5.0	27.3 27.9	27.6	8.1 8.1	8.1	24.0 20.8	22.4	78.9 71.6	75.3	5.8 5.0	5.4		6.3 6.5	6.4		4.8 3.7	4.3	
					Bottom	9.0	27.6 27.5	27.5	8.1 8.1	8.1	23.8 23.9	23.8	72.1 77.7	74.9	5.2 5.9	5.5	5.5	6.6 6.5	6.6		6.4 7.5	7.0	
29-Aug-14	Sunny	Moderate	14:52	10.1	Surface	1.0	27.5 27.6	27.5	8.1 8.1	8.1	23.4 23.2	23.3	78.8 79.0	78.9	5.5 5.5	5.5	5.4	8.8 9.2	9.0	10.4	6.1 5.6	5.9	6.2
					Middle	5.1	27.3 27.2	27.3	8.1 8.1	8.1	24.1 24.2	24.2	76.9 77.3	77.1	5.3 5.4	5.3		11.5 11.2	11.4		5.3 6.0	5.7	
					Bottom	9.1	27.3 27.2	27.2	8.1 8.1	8.1	24.2 24.5	24.3	78.3 77.6	78.0	5.4 5.4	5.4	5.4	10.5 11.2	10.9		6.7 7.0	6.9	

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 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*
1-Aug-14	Sunny	Moderate	09:27	10.6	Surface	1.0	29.5 29.5	29.5	8.1 8.1	8.1	17.2 17.3	17.2	78.1 78.9	78.5	5.4 5.5	5.4	5.3	4.3 4.4	4.4	5.3	1.4 1.3	1.4	1.5
					Middle	5.3	28.2 28.4	28.3	8.1 8.1	8.1	23.4 22.4	22.9	74.2 75.9	75.1	5.1 5.2	5.1		5.7 5.6	5.7		1.4 1.4	1.4	
					Bottom	9.6	28.0 28.0	28.0	8.0 8.1	8.0	24.8 24.9	24.9	70.8 68.6	69.7	4.8 4.7	4.8	4.8	5.6 5.8	5.7		1.6 1.5	1.6	
4-Aug-14	Sunny	Moderate	12:48	10.6	Surface	1.0	29.6 29.9	29.8	8.2 8.3	8.2	16.0 15.0	15.5	77.5 76.9	77.2	5.5 5.6	5.6	5.7	2.6 2.3	2.5	2.4	2.3 2.7	2.5	2.7
					Middle	5.3	27.0 27.4	27.2	8.1 8.1	8.1	26.3 25.2	25.7	74.8 78.4	76.6	5.7 5.9	5.8		2.5 2.1	2.3		2.8 3.2	3.0	
					Bottom	9.6	26.6 26.2	26.4	8.1 8.1	8.1	28.8 29.3	29.0	75.6 77.1	76.4	5.5 5.8	5.6	5.6	2.4 2.2	2.3		2.8 2.6	2.7	
6-Aug-14	Sunny	Moderate	16:15	9.6	Surface	1.0	29.5 29.4	29.4	8.4 8.4	8.4	15.5 16.0	15.7	103.1 98.0	100.6	7.2 6.9	7.0	6.1	4.8 5.0	4.9	7.2	6.0 5.8	5.9	6.1
					Middle	4.8	27.5 27.6	27.6	8.2 8.2	8.2	25.7 26.0	25.9	76.4 73.4	74.9	5.2 5.0	5.1		6.6 7.1	6.9		6.0 5.6	5.8	
					Bottom	8.6	27.0 27.2	27.1	8.1 8.2	8.2	27.4 26.8	27.1	71.4 72.7	72.1	4.9 5.0	4.9	4.9	9.8 9.7	9.8		6.4 6.5	6.5	
8-Aug-14	Sunny	Moderate	18:02	10.5	Surface	1.0	29.2 29.4	29.3	8.2 8.2	8.2	18.0 18.3	18.2	84.7 88.2	86.5	5.9 6.1	6.0	5.6	7.7 7.5	7.6	7.6	2.4 2.0	2.2	3.0
					Middle	5.3	28.3 28.5	28.4	8.2 8.2	8.2	22.3 22.0	22.2	76.6 75.2	75.9	5.3 5.2	5.2		7.7 7.5	7.6		3.4 3.0	3.2	
					Bottom	9.5	26.9 26.7	26.8	8.1 8.1	8.1	27.0 27.3	27.1	73.5 72.2	72.9	5.1 5.0	5.0	5.0	7.5 7.8	7.7		3.2 3.7	3.5	
11-Aug-14	Sunny	Moderate	06:21	10.6	Surface	1.0	27.9 28.1	28.0	8.1 8.1	8.1	23.7 23.1	23.4	76.1 79.1	77.6	5.6 5.8	5.7	5.7	11.5 11.4	11.5	12.1	15.1 15.3	15.2	17.1
					Middle	5.3	27.7 27.8	27.8	8.1 8.1	8.1	24.5 24.2	24.4	75.4 78.2	76.8	5.6 5.8	5.7		12.6 12.3	12.5		16.6 16.7	16.7	
					Bottom	9.6	27.7 27.7	27.7	8.1 8.1	8.1	24.5 24.5	24.5	76.5 81.8	79.2	5.7 6.0	5.8	5.8	12.5 12.2	12.4		19.8 19.2	19.5	
13-Aug-14	Rainy	Moderate	08:14	11.1	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	23.7 23.6	23.7	79.6 91.9	85.8	5.5 6.3	5.9	5.8	19.1 18.9	19.0	19.4	7.3 7.4	7.4	7.9
					Middle	5.6	27.8 27.7	27.8	8.0 8.0	8.0	23.9 24.4	24.2	86.8 79.1	83.0	6.0 5.4	5.7		19.2 19.3	19.3		8.2 8.2	8.2	
					Bottom	10.1	27.9 27.7	27.8	8.0 8.0	8.0	23.8 24.5	24.1	82.8 78.6	80.7	5.7 5.4	5.6	5.6	19.9 19.6	19.8		8.2 7.9	8.1	
15-Aug-14	Sunny	Moderate	09:58	10.4	Surface	1.0	28.3 28.2	28.2	7.9 8.0	7.9	20.7 19.7	20.2	70.8 71.1	71.0	4.9 5.0	4.9	**4.6**	10.2 10.5	10.4	13.9	6.9 6.7	6.8	7.1
					Middle	5.2	27.4 27.4	27.4	7.9 7.9	7.9	23.6 23.6	23.6	62.6 62.3	62.5	4.3 4.3	4.3		13.4 13.5	13.5		7.3 7.2	7.3	
					Bottom	9.4	27.4 27.4	27.4	7.8 7.9	7.9	23.8 23.9	23.9	61.8 62.0	61.9	4.3 4.3	4.3	**4.3**	17.5 17.8	17.7		7.3 7.3	7.3	
18-Aug-14	Sunny	Moderate	13:38	10.4	Surface	1.0	29.9 29.8	29.8	8.1 8.1	8.1	13.7 13.9	13.8	88.0 91.1	89.6	6.2 6.4	6.3	5.7	5.2 4.9	5.1	5.3	0.7 1.0	0.9	1.6
					Middle	5.2	28.8 28.0	28.4	8.0 8.0	8.0	20.9 23.3	22.1	74.1 74.3	74.2	5.1 5.1	5.1		5.3 5.5	5.4		1.6 1.8	1.7	
					Bottom	9.4	26.3 26.2	26.3	7.9 7.9	7.9	27.7 27.9	27.8	72.0 72.3	72.2	5.0 5.0	5.0	5.0	5.4 5.4	5.4		2.1 2.2	2.2	
20-Aug-14	Rainy	Moderate	16:59	10.1	Surface	1.0	28.6 28.6	28.6	8.2 8.1	8.1	12.2 13.1	12.7	90.9 89.8	90.4	6.6 6.5	6.5	6.0	4.4 4.4	4.4	5.9	6.1 5.6	5.9	5.1
					Middle	5.1	28.3 28.1	28.2	8.1 8.1	8.1	17.9 17.6	17.7	78.6 78.6	78.6	5.5 5.4	5.5		6.0 6.3	6.2		4.3 4.4	4.4	
					Bottom	9.1	27.5 27.8	27.7	8.0 8.0	8.0	24.8 23.7	24.3	76.7 76.0	76.4	5.4 5.2	5.3	5.3	7.5 6.8	7.2		5.2 4.6	4.9	

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 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*
22-Aug-14	Sunny	Moderate	18:03	9.9	Surface	1.0	29.5 29.4	29.5	8.0 8.0	8.0	12.1 12.3	12.2	95.1 94.6	94.9	6.8 6.8	6.8	6.1	7.0 7.0	7.0	8.0	5.5 5.6	5.6	5.7
					Middle	5.0	27.4 27.4	27.4	7.9 7.9	7.9	21.8 22.3	22.0	75.1 75.4	75.3	5.4 5.4	5.4		7.5 7.1	7.3		5.6 5.9	5.8	
					Bottom	8.9	27.1 27.3	27.2	7.8 7.9	7.9	23.7 23.4	23.5	69.4 71.7	70.6	4.8 5.1	5.0	5.0	9.4 10.2	9.8		5.6 5.7	5.7	
25-Aug-14	Sunny	Moderate	19:28	10.8	Surface	1.0	29.6 29.4	29.5	8.1 8.1	8.1	15.9 16.3	16.1	80.4 78.9	79.7	5.6 5.5	5.5	5.3	3.7 3.7	3.7	5.0	3.3 2.7	3.0	3.5
					Middle	5.4	27.6 27.7	27.6	8.1 8.1	8.1	21.1 20.9	21.0	73.2 72.9	73.1	5.1 5.0	5.1		5.5 5.5	5.5		3.1 2.7	2.9	
					Bottom	9.8	27.3 26.9	27.1	8.0 8.0	8.0	25.1 25.3	25.2	71.7 72.5	72.1	4.9 5.0	5.0	5.0	5.6 5.8	5.7		4.7 4.3	4.5	
27-Aug-14	Sunny	Moderate	07:21	10.6	Surface	1.0	27.2 27.5	27.4	8.1 8.1	8.1	22.1 22.1	22.1	76.0 73.5	74.8	5.6 5.4	5.5	5.4	6.8 6.3	6.6	6.5	5.9 6.9	6.4	7.9
					Middle	5.3	26.7 26.7	26.7	8.1 8.1	8.1	25.9 26.0	25.9	72.9 75.1	74.0	5.1 5.5	5.3		6.4 6.6	6.5		7.9 7.6	7.8	
					Bottom	9.6	26.7 27.1	26.9	8.1 8.1	8.1	26.0 25.8	25.9	75.3 73.5	74.4	5.5 5.4	5.5	5.5	6.5 6.5	6.5		9.6 9.6	9.6	
29-Aug-14	Sunny	Moderate	08:41	10.3	Surface	1.0	27.3 27.2	27.3	8.1 8.1	8.1	23.7 24.3	24.0	89.1 82.8	86.0	6.2 5.7	6.0	5.8	13.6 13.9	13.8	14.3	5.6 4.9	5.3	5.5
					Middle	5.2	27.0 27.0	27.0	8.1 8.1	8.1	24.9 24.9	24.9	80.6 78.4	79.5	5.6 5.4	5.5		13.9 14.0	14.0		5.3 5.6	5.5	
					Bottom	9.3	27.0 27.1	27.0	8.1 8.1	8.1	25.1 24.8	25.0	77.4 77.4	77.4	5.4 5.4	5.4	5.4	14.7 15.4	15.1		5.4 6.1	5.8	

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 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*
1-Aug-14	Sunny	Moderate	15:58	10.5	Surface	1.0	30.0 29.9	30.0	8.2 8.2	8.2	16.5 16.3	16.4	91.4 92.3	91.9	6.3 6.4	6.4	6.0	2.2 2.2	2.2	2.3	2.7 2.5	2.6	2.9
					Middle	5.3	29.4 29.4	29.4	8.1 8.1	8.1	19.7 19.7	19.7	81.0 83.8	82.4	5.6 5.7	5.6		2.2 2.3	2.3		2.8 2.6	2.7	
					Bottom	9.5	27.8 27.7	27.8	8.1 8.1	8.1	24.9 25.1	25.0	79.6 77.5	78.6	5.5 5.3	5.4	5.4	2.5 2.5	2.5		3.3 3.4	3.4	
4-Aug-14	Sunny	Moderate	18:51	8.0	Surface	1.0	30.5 30.6	30.6	8.4 8.4	8.4	14.5 14.5	14.5	74.5 74.8	74.7	5.4 5.5	5.4	5.4	3.5 3.1	3.3	3.4	3.1 3.2	3.2	4.3
					Middle	4.0	29.4 28.9	29.2	8.2 8.2	8.2	18.6 20.5	19.6	72.9 72.5	72.7	5.3 5.5	5.4		3.4 3.3	3.4		4.2 4.1	4.2	
					Bottom	7.0	27.0 27.0	27.0	8.2 8.2	8.2	27.1 27.1	27.1	75.6 77.3	76.5	5.5 5.7	5.6	5.6	3.6 3.2	3.4		5.3 5.9	5.6	
6-Aug-14	Sunny	Moderate	08:54	9.8	Surface	1.0	29.1 29.1	29.1	8.3 8.3	8.3	19.0 18.7	18.8	85.2 85.6	85.4	5.9 5.9	5.9	5.6	2.3 2.1	2.2	3.1	3.4 3.6	3.5	5.5
					Middle	4.9	27.3 27.5	27.4	8.1 8.1	8.1	26.9 25.5	26.2	77.2 79.8	78.5	5.2 5.4	5.3		3.8 3.5	3.7		5.6 5.7	5.7	
					Bottom	8.8	27.2 27.0	27.1	8.1 8.1	8.1	27.1 27.7	27.4	77.9 77.3	77.6	5.3 5.3	5.3	5.3	3.3 3.4	3.4		7.4 7.2	7.3	
8-Aug-14	Sunny	Moderate	11:10	10.4	Surface	1.0	28.9 29.4	29.2	8.2 8.2	8.2	15.4 15.2	15.3	79.1 81.7	80.4	5.6 5.7	5.7	5.4	3.4 3.4	3.4	4.3	1.6 1.6	1.6	1.9
					Middle	5.2	27.5 28.2	27.8	8.1 8.2	8.2	24.0 22.5	23.3	74.3 73.1	73.7	5.1 5.0	5.1		4.6 4.8	4.7		1.8 1.7	1.8	
					Bottom	9.4	27.0 27.0	27.0	8.1 8.1	8.1	26.4 26.4	26.4	68.8 72.7	70.8	4.8 5.0	4.9	4.9	4.5 4.8	4.7		2.4 2.4	2.4	
11-Aug-14	Sunny	Moderate	13:17	10.0	Surface	1.0	28.6 28.5	28.6	8.1 8.1	8.1	22.5 22.7	22.6	78.2 80.2	79.2	5.8 5.9	5.8	5.7	6.7 6.5	6.6	7.0	6.2 6.6	6.4	7.6
					Middle	5.0	27.5 27.4	27.5	8.0 8.1	8.1	24.9 25.0	25.0	73.2 76.1	74.7	5.4 5.6	5.5		6.5 6.7	6.6		7.8 7.4	7.6	
					Bottom	9.0	27.1 27.0	27.1	8.0 8.1	8.0	26.3 26.5	26.4	74.9 80.7	77.8	5.6 6.0	5.8	5.8	7.8 7.8	7.8		8.6 8.8	8.7	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-	-	- -	-	-
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	16:36	10.6	Surface	1.0	28.5 28.5	28.5	8.0 7.9	7.9	20.8 20.9	20.9	72.6 72.7	72.7	5.0 5.0	5.0	**4.8**	7.4 7.1	7.3	8.4	6.1 6.0	6.1	7.8
					Middle	5.3	27.9 27.9	27.9	7.9 7.9	7.9	22.1 22.1	22.1	66.4 66.9	66.7	4.6 4.6	4.6		8.6 8.5	8.6		6.3 6.5	6.4	
					Bottom	9.6	27.1 27.1	27.1	7.9 7.9	7.9	24.8 24.7	24.8	64.5 64.2	64.4	4.5 4.5	4.5	**4.5**	9.2 9.3	9.3		10.8 11.1	11.0	
18-Aug-14	Sunny	Moderate	07:06	10.3	Surface	1.0	29.0 29.1	29.1	8.0 8.1	8.1	14.8 14.8	14.8	84.5 88.8	86.7	6.0 6.3	6.1	5.7	2.2 2.1	2.2	2.7	1.2 1.1	1.2	1.5
					Middle	5.2	28.5 28.6	28.5	8.0 8.0	8.0	19.6 19.7	19.6	73.4 74.8	74.1	5.1 5.2	5.2		2.3 2.5	2.4		1.6 1.8	1.7	
					Bottom	9.3	27.2 27.4	27.3	7.9 7.9	7.9	24.8 24.5	24.6	76.8 77.0	76.9	5.3 5.3	5.3	5.3	3.2 3.5	3.4		1.6 1.6	1.6	
20-Aug-14	Rainy	Moderate	09:28	10.1	Surface	1.0	28.6 28.6	28.6	8.0 8.0	8.0	13.8 14.1	14.0	83.5 84.3	83.9	6.0 6.0	6.0	5.8	3.4 3.2	3.3	5.6	3.4 3.6	3.5	4.5
					Middle	5.1	27.1 27.0	27.0	7.8 7.8	7.8	25.2 24.5	24.9	78.4 78.3	78.4	5.5 5.4	5.5		6.3 5.6	6.0		5.0 4.9	5.0	
					Bottom	9.1	26.8 26.9	26.8	7.8 7.8	7.8	26.5 26.2	26.3	74.1 73.8	74.0	5.2 5.2	5.2	5.2	7.7 7.0	7.4		4.6 5.2	4.9	

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 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*
22-Aug-14	Sunny	Moderate	11:16	9.7	Surface	1.0	28.5 28.4	28.4	8.0 8.0	8.0	15.1 15.3	15.2	81.5 81.1	81.3	5.8 5.8	5.8	5.6	2.9 3.0	3.0	4.4	2.6 3.0	2.8	3.0
					Middle	4.9	27.2 27.1	27.2	8.0 8.0	8.0	22.2 22.8	22.5	76.8 76.1	76.5	5.3 5.3	5.3		5.2 4.9	5.1		2.6 2.9	2.8	
					Bottom	8.7	27.2 27.3	27.3	8.0 8.0	8.0	24.0 24.3	24.2	70.9 70.5	70.7	5.1 5.0	5.0	5.0	5.3 5.0	5.2		3.8 3.2	3.5	
25-Aug-14	Sunny	Moderate	13:00	10.3	Surface	1.0	29.1 28.9	29.0	8.1 8.1	8.1	16.5 17.0	16.8	74.9 74.3	74.6	5.3 5.2	5.2	5.2	4.5 4.6	4.6	4.9	2.1 2.1	2.1	2.7
					Middle	5.2	27.1 27.4	27.3	8.0 8.1	8.1	22.1 19.2	20.6	73.2 74.1	73.7	5.1 5.1	5.1		5.1 5.1	5.1		2.7 2.9	2.8	
					Bottom	9.3	26.9 27.0	26.9	8.0 8.0	8.0	24.8 24.7	24.8	71.3 67.6	69.5	5.0 4.8	4.9	4.9	5.2 5.0	5.1		3.7 2.7	3.2	
27-Aug-14	Sunny	Moderate	14:35	8.8	Surface	1.0	27.5 27.6	27.6	8.1 8.1	8.1	20.8 20.6	20.7	72.7 74.8	73.8	5.1 5.7	5.4	5.4	5.7 5.4	5.6	5.6	2.2 2.7	2.5	4.2
					Middle	4.4	27.0 26.9	26.9	8.1 8.1	8.1	25.0 24.1	24.6	73.6 73.1	73.4	5.5 5.1	5.3		5.6 5.8	5.7		4.1 4.8	4.5	
					Bottom	7.8	26.8 27.6	27.2	8.1 8.1	8.1	25.4 24.9	25.1	78.8 72.4	75.6	5.5 5.1	5.3	5.3	5.5 5.2	5.4		5.6 5.3	5.5	
29-Aug-14	Sunny	Moderate	15:01	10.3	Surface	1.0	28.2 27.9	28.0	8.1 8.1	8.1	22.2 22.4	22.3	80.1 79.0	79.6	5.5 5.5	5.5	5.4	7.6 7.9	7.8	9.8	3.9 3.9	3.9	4.6
					Middle	5.2	26.9 26.9	26.9	8.1 8.1	8.1	25.2 25.3	25.3	76.2 74.0	75.1	5.3 5.1	5.2		11.5 10.9	11.2		4.7 4.9	4.8	
					Bottom	9.3	26.9 26.9	26.9	8.1 8.1	8.1	25.5 25.6	25.5	78.9 76.1	77.5	5.5 5.3	5.4	5.4	10.7 10.0	10.4		5.5 4.6	5.1	

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 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*
1-Aug-14	Sunny	Moderate	09:19	10.5	Surface	1.0	29.0 28.9	29.0	8.1 8.1	8.1	19.9 20.2	20.1	75.7 75.2	75.5	5.2 5.2	5.2	5.2	3.5 3.6	3.6		1.2 2.0	1.6	
					Middle	5.3	28.4 28.4	28.4	8.1 8.1	8.1	22.0 22.2	22.1	74.2 74.3	74.3	5.1 5.1	5.1		4.3 4.3	4.3	4.1	2.5 2.4	2.5	2.2
					Bottom	9.5	28.1 28.5	28.3	8.0 8.0	8.0	23.6 23.3	23.5	69.7 70.9	70.3	4.8 4.9	4.8	4.8	4.4 4.2	4.3		2.7 2.4	2.6	
4-Aug-14	Sunny	Moderate	12:38	10.6	Surface	1.0	29.6 29.6	29.6	8.3 8.3	8.3	18.0 18.1	18.0	72.5 76.5	74.5	5.3 5.5	5.4	5.5	3.5 3.4	3.5		2.0 2.2	2.1	
					Middle	5.3	27.6 27.5	27.5	8.1 8.1	8.1	26.0 25.2	25.6	74.5 75.9	75.2	5.5 5.7	5.6		3.7 3.6	3.7	3.6	2.6 2.8	2.7	2.5
					Bottom	9.6	26.8 26.7	26.8	8.2 8.1	8.1	28.2 28.2	28.2	74.9 75.5	75.2	5.6 5.5	5.5	5.5	3.8 3.5	3.7		3.0 2.6	2.8	
6-Aug-14	Sunny	Moderate	16:24	9.7	Surface	1.0	29.3 29.5	29.4	8.4 8.4	8.4	17.5 17.3	17.4	107.2 113.1	110.2	7.5 7.8	7.6	6.9	3.2 3.3	3.3		5.2 5.0	5.1	
					Middle	4.9	28.2 28.0	28.1	8.3 8.3	8.3	23.3 23.6	23.5	89.8 89.1	89.5	6.2 6.1	6.1		2.6 2.8	2.7	3.5	5.4 5.4	5.4	5.3
					Bottom	8.7	27.8 27.8	27.8	8.2 8.3	8.2	24.0 24.0	24.0	82.8 88.7	85.8	5.7 6.1	5.9	5.9	4.5 4.3	4.4		5.1 5.6	5.4	
8-Aug-14	Sunny	Moderate	18:12	10.7	Surface	1.0	29.3 29.3	29.3	8.2 8.2	8.2	19.1 19.2	19.2	83.8 82.7	83.3	5.8 5.7	5.7	5.6	4.7 4.8	4.8		3.1 2.6	2.9	
					Middle	5.4	28.7 28.9	28.8	8.2 8.2	8.2	20.2 20.1	20.2	80.5 78.5	79.5	5.5 5.4	5.5		5.2 5.2	5.2	5.2	4.0 4.3	4.2	3.6
					Bottom	9.7	26.9 26.9	26.9	8.1 8.1	8.1	26.5 26.3	26.4	73.1 74.1	73.6	5.1 5.1	5.1	5.1	5.5 5.6	5.6		3.7 3.6	3.7	
11-Aug-14	Sunny	Moderate	06:12	10.8	Surface	1.0	28.1 28.2	28.1	8.1 8.1	8.1	22.4 22.2	22.3	76.4 78.5	77.5	5.7 5.8	5.8	5.7	11.4 11.4	11.4		4.7 4.2	4.5	
					Middle	5.4	27.6 27.7	27.7	8.0 8.0	8.0	24.6 24.3	24.4	74.8 75.6	75.2	5.6 5.6	5.6		11.2 11.2	11.2	11.3	5.8 5.2	5.5	5.6
					Bottom	9.8	27.6 27.8	27.7	8.0 8.0	8.0	24.5 24.2	24.4	76.9 77.5	77.2	5.7 5.7	5.7	5.7	11.3 11.1	11.2		7.0 6.7	6.9	
13-Aug-14	Rainy	Moderate	08:07	11.1	Surface	1.0	28.0 27.9	28.0	8.0 8.0	8.0	22.7 22.9	22.8	83.6 82.4	83.0	5.8 5.7	5.7	5.6	10.8 10.9	10.9		8.8 8.6	8.7	
					Middle	5.6	27.9 27.7	27.8	8.0 8.0	8.0	23.7 24.1	23.9	79.6 80.8	80.2	5.5 5.6	5.5		10.9 10.9	10.9	11.0	4.0 4.3	4.2	5.5
					Bottom	10.1	27.7 27.8	27.7	8.0 8.0	8.0	24.4 24.8	24.6	79.4 80.6	80.0	5.5 5.6	5.5	5.5	11.1 11.0	11.1		3.7 3.6	3.7	
15-Aug-14	Sunny	Moderate	09:48	10.4	Surface	1.0	28.1 28.1	28.1	7.9 7.9	7.9	20.9 21.0	21.0	68.1 67.7	67.9	4.7 4.7	4.7	**4.7**	13.5 13.4	13.5		9.5 9.2	9.4	
					Middle	5.2	27.8 27.8	27.8	7.9 7.9	7.9	22.3 22.2	22.2	65.6 65.8	65.7	4.6 4.6	4.6		15.5 15.2	15.4	14.9	11.0 11.8	11.4	11.3
					Bottom	9.4	27.7 27.7	27.7	7.9 7.9	7.9	22.5 22.5	22.5	65.7 65.1	65.4	4.6 4.5	4.5	**4.5**	16.0 15.7	15.9		13.0 13.1	13.1	
18-Aug-14	Sunny	Moderate	13:47	10.5	Surface	1.0	29.0 29.1	29.0	8.0 8.0	8.0	18.3 18.3	18.3	83.4 85.2	84.3	5.8 5.9	5.9	5.6	5.6 5.5	5.6		1.5 1.7	1.6	
					Middle	5.3	27.9 27.8	27.9	7.9 8.0	7.9	22.0 22.3	22.2	75.4 73.5	74.5	5.2 5.1	5.2		5.5 5.5	5.5	5.6	1.9 1.9	1.9	1.9
					Bottom	9.5	27.8 27.8	27.8	8.0 7.8	7.9	22.7 22.7	22.7	77.8 79.5	78.7	5.4 5.5	5.4	5.4	5.5 5.6	5.6		2.3 2.1	2.2	
20-Aug-14	Rainy	Moderate	17:09	9.7	Surface	1.0	28.3 28.4	28.4	8.1 8.1	8.1	15.0 14.2	14.6	83.4 84.5	84.0	6.0 6.1	6.0	5.6	3.5 3.2	3.4		4.8 4.4	4.6	
					Middle	4.9	27.6 27.7	27.6	7.9 8.0	8.0	22.1 22.1	22.1	75.7 74.4	75.1	5.3 5.2	5.2		4.7 4.5	4.6	4.5	3.5 5.4	4.5	4.6
					Bottom	8.7	27.3 27.3	27.3	7.9 7.9	7.9	23.7 24.6	24.2	70.8 70.3	70.6	4.9 4.9	4.9	4.9	5.6 5.1	5.4		5.1 4.5	4.8	

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*
22-Aug-14	Sunny	Moderate	18:14	10.1	Surface	1.0	29.3 29.3	29.3	8.0 7.9	8.0	13.0 13.2	13.1	85.0 88.3	86.7	6.0 6.2	6.1	6.0	4.2 4.0	4.1	3.9	3.9 3.2	3.6	4.0
					Middle	5.1	28.5 28.4	28.4	7.9 8.0	7.9	17.9 18.3	18.1	82.4 82.5	82.5	5.9 5.9	5.9		3.6 4.2	3.9		3.9 3.9	3.9	
					Bottom	9.1	28.1 28.4	28.3	7.9 7.8	7.9	19.6 19.3	19.5	82.2 80.7	81.5	5.8 5.7	5.8	5.8	4.0 3.6	3.8		4.2 4.5	4.4	
25-Aug-14	Sunny	Moderate	19:37	10.6	Surface	1.0	29.1 29.1	29.1	8.1 8.1	8.1	16.6 16.6	16.6	74.6 75.6	75.1	5.2 5.3	5.3	5.3	4.1 3.9	4.0	4.2	2.4 2.4	2.4	3.2
					Middle	5.3	28.1 28.1	28.1	8.1 8.1	8.1	20.0 19.7	19.8	75.4 73.9	74.7	5.3 5.2	5.2		4.4 4.2	4.3		3.7 3.4	3.6	
					Bottom	9.6	27.9 28.1	28.0	8.1 8.1	8.1	20.7 20.7	20.7	72.2 71.2	71.7	5.1 5.0	5.0	5.0	4.3 4.5	4.4		3.9 3.5	3.7	
27-Aug-14	Sunny	Moderate	07:11	10.6	Surface	1.0	27.4 27.4	27.4	8.1 8.1	8.1	22.0 21.5	21.8	76.0 78.0	77.0	5.6 5.8	5.7	5.7	5.8 5.5	5.7	5.6	6.8 6.7	6.8	7.7
					Middle	5.3	26.9 26.9	26.9	8.1 8.1	8.1	24.8 25.0	24.9	76.9 74.1	75.5	5.7 5.5	5.6		5.4 5.6	5.5		6.9 7.6	7.3	
					Bottom	9.6	27.0 26.6	26.8	8.1 8.1	8.1	26.0 26.2	26.1	78.4 72.2	75.3	5.7 5.2	5.4	5.4	5.4 5.6	5.5		8.9 8.9	8.9	
29-Aug-14	Sunny	Moderate	08:34	10.2	Surface	1.0	27.3 27.2	27.3	8.1 8.1	8.1	23.9 24.0	23.9	76.5 76.9	76.7	5.3 5.3	5.3	5.3	13.1 13.3	13.2	14.1	4.8 4.1	4.5	5.6
					Middle	5.1	27.2 27.2	27.2	8.1 8.1	8.1	24.2 24.2	24.2	76.6 76.1	76.4	5.3 5.3	5.3		13.9 14.2	14.1		4.9 5.8	5.4	
					Bottom	9.2	27.1 27.1	27.1	8.1 8.1	8.1	24.4 24.4	24.4	76.6 76.3	76.5	5.3 5.3	5.3	5.3	15.3 14.9	15.1		7.1 6.9	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 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*
1-Aug-14	Sunny	Moderate	15:29	6.6	Surface	1.0	29.8 30.4	30.1	8.2 8.2	8.2	21.3 21.0	21.2	84.5 91.8	88.2	5.7 6.1	5.9	5.5	6.1 6.2	6.2	9.3	2.7 2.4	2.6	3.1
					Middle	3.3	28.4 29.0	28.7	7.9 8.0	8.0	23.3 23.0	23.2	74.0 74.7	74.4	5.1 5.1	5.1		8.7 8.2	8.5		3.0 3.2	3.1	
					Bottom	5.6	27.8 27.7	27.7	7.9 8.0	7.9	26.7 26.7	26.7	76.6 73.9	75.3	5.2 5.0	5.1	5.1	12.9 13.5	13.2		3.9 3.5	3.7	
4-Aug-14	Sunny	Moderate	18:16	6.4	Surface	1.0	30.7 30.5	30.6	8.5 8.5	8.5	18.6 18.8	18.7	136.0 134.7	135.4	9.2 9.1	9.1	7.5	3.8 3.9	3.9	5.7	3.7 3.6	3.7	4.4
					Middle	3.2	29.2 30.0	29.6	8.5 8.5	8.5	21.4 19.8	20.6	83.9 87.4	85.7	5.7 5.9	5.8		6.3 6.5	6.4		3.7 4.0	3.9	
					Bottom	5.4	28.0 28.0	28.0	8.5 8.5	8.5	26.4 26.2	26.3	82.8 82.8	82.8	5.6 5.6	5.6	5.6	6.8 6.5	6.7		5.8 5.3	5.6	
6-Aug-14	Sunny	Moderate	09:12	6.4	Surface	1.0	29.3 29.3	29.3	8.4 8.6	8.5	21.1 21.3	21.2	93.3 93.2	93.3	6.4 6.3	6.3	5.8	3.2 3.3	3.3	3.5	2.7 2.2	2.5	3.8
					Middle	3.2	28.7 28.7	28.7	8.5 8.2	8.4	23.1 23.1	23.1	76.0 77.5	76.8	5.2 5.3	5.2		3.5 3.6	3.6		3.8 3.8	3.8	
					Bottom	5.4	26.9 26.8	26.9	8.0 8.3	8.1	27.7 28.2	27.9	73.8 77.0	75.4	5.0 5.3	5.2	5.2	3.5 3.5	3.5		5.1 5.2	5.2	
8-Aug-14	Sunny	Moderate	11:08	6.2	Surface	1.0	29.8 29.6	29.7	8.3 8.3	8.3	19.9 20.2	20.0	100.1 105.4	102.8	6.8 7.2	7.0	6.4	4.7 4.8	4.8	5.9	3.3 3.2	3.3	3.4
					Middle	3.1	29.4 29.3	29.4	8.2 8.2	8.2	21.0 21.4	21.2	82.8 88.4	85.6	5.6 6.0	5.8		5.9 6.2	6.1		3.3 3.2	3.3	
					Bottom	5.2	27.2 27.4	27.3	8.1 8.1	8.1	26.5 26.4	26.4	81.8 80.1	81.0	5.6 5.5	5.5	5.5	6.8 7.0	6.9		3.9 3.3	3.6	
11-Aug-14	Sunny	Moderate	12:58	7.0	Surface	1.0	28.8 28.6	28.7	8.2 8.2	8.2	23.0 23.3	23.1	89.5 86.8	88.2	6.1 5.9	6.0	5.7	10.3 10.8	10.6	11.1	7.3 7.4	7.4	8.2
					Middle	3.5	27.6 28.3	28.0	8.2 8.2	8.2	25.0 24.0	24.5	76.7 77.8	77.3	5.2 5.3	5.3		10.6 10.1	10.4		8.4 8.2	8.3	
					Bottom	6.0	27.1 26.9	27.0	8.2 8.2	8.2	26.8 27.7	27.2	71.5 70.9	71.2	4.9 4.9	4.9	4.9	12.0 12.5	12.3		8.9 8.9	8.9	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	15:46	6.3	Surface	1.0	29.2 28.8	29.0	7.8 7.8	7.8	21.7 22.1	21.9	79.6 75.7	77.7	5.6 5.3	5.5	5.4	9.5 9.2	9.4	9.4	6.9 7.1	7.0	6.9
					Middle	3.2	27.9 28.8	28.3	7.8 7.8	7.8	23.5 22.8	23.1	73.6 74.9	74.3	5.2 5.3	5.2		9.5 9.1	9.3		6.8 6.9	6.9	
					Bottom	5.3	27.6 27.7	27.7	7.8 7.8	7.8	24.2 24.2	24.2	78.3 69.0	73.7	5.6 4.9	5.2	5.2	9.7 9.3	9.5		6.8 6.7	6.8	
18-Aug-14	Sunny	Moderate	07:26	6.3	Surface	1.0	29.5 29.5	29.5	7.9 7.9	7.9	18.5 18.6	18.5	89.8 91.1	90.5	6.2 6.3	6.2	5.9	4.7 4.5	4.6	5.9	2.4 2.3	2.4	2.2
					Middle	3.2	29.4 29.1	29.3	7.9 7.9	7.9	18.7 18.8	18.8	82.4 78.3	80.4	5.7 5.4	5.5		5.9 5.8	5.9		2.3 2.0	2.2	
					Bottom	5.3	28.5 28.9	28.7	7.8 7.8	7.8	21.3 20.7	21.0	78.1 79.8	79.0	5.4 5.5	5.4	5.4	6.9 7.3	7.1		2.0 2.2	2.1	
20-Aug-14	Rainy	Moderate	09:56	6.5	Surface	1.0	29.0 29.2	29.1	8.1 8.1	8.1	15.3 16.2	15.8	91.3 87.4	89.4	6.5 6.1	6.3	5.9	5.7 5.4	5.6	6.3	4.4 3.8	4.1	4.5
					Middle	3.3	29.2 29.2	29.2	8.0 8.0	8.0	18.1 17.0	17.6	75.5 78.8	77.2	5.2 5.5	5.4		6.6 6.6	6.6		4.8 4.1	4.5	
					Bottom	5.5	27.6 27.5	27.5	7.8 7.9	7.9	25.0 25.2	25.1	79.2 76.4	77.8	5.4 5.2	5.3	5.3	6.7 6.8	6.8		4.7 5.0	4.9	

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 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*
22-Aug-14	Sunny	Moderate	11:30	6.3	Surface	1.0	28.6 28.6	28.6	8.0 8.0	8.0	18.2 18.2	18.2	79.2 79.3	79.3	5.6 5.6	5.6	5.4	3.8 3.9	3.9	4.0	2.9 3.2	3.1	3.4
					Middle	3.2	28.2 28.2	28.2	8.0 7.9	7.9	19.9 19.6	19.7	74.8 73.4	74.1	5.2 5.1	5.2		3.9 4.1	4.0		3.5 3.4	3.5	
					Bottom	5.3	27.7 28.1	27.9	7.8 7.9	7.9	22.5 23.2	22.9	76.6 79.0	77.8	5.3 5.4	5.4	5.4	4.2 4.0	4.1		3.3 3.7	3.5	
25-Aug-14	Sunny	Moderate	13:12	6.4	Surface	1.0	28.8 29.0	28.9	8.1 8.1	8.1	20.8 20.7	20.8	82.3 87.6	85.0	5.7 6.0	5.8	5.5	5.8 6.1	6.0	7.0	2.4 2.3	2.4	2.8
					Middle	3.2	27.0 27.7	27.4	8.0 8.0	8.0	23.8 21.9	22.9	73.4 73.0	73.2	5.1 5.1	5.1		7.6 8.3	8.0		2.6 3.1	2.9	
					Bottom	5.4	26.7 26.7	26.7	8.0 8.0	8.0	26.1 26.4	26.3	71.3 75.8	73.6	4.9 5.2	5.1	5.1	7.1 6.9	7.0		3.4 3.0	3.2	
27-Aug-14	Sunny	Moderate	13:41	6.2	Surface	1.0	28.2 28.3	28.2	8.0 8.1	8.1	22.0 21.9	22.0	80.9 82.7	81.8	5.6 5.7	5.6	5.5	4.5 4.1	4.3	4.4	10.0 9.7	9.9	10.0
					Middle	3.1	28.1 27.8	27.9	8.1 8.0	8.0	22.1 22.6	22.3	79.7 77.5	78.6	5.5 5.4	5.4		4.3 4.5	4.4		9.6 9.6	9.6	
					Bottom	5.2	28.0 27.4	27.7	8.0 7.9	8.0	23.8 24.6	24.2	81.2 79.8	80.5	5.6 5.5	5.5	5.5	4.5 4.5	4.5		9.8 10.9	10.4	
29-Aug-14	Sunny	Moderate	14:43	6.3	Surface	1.0	28.9 28.9	28.9	8.0 8.0	8.0	24.3 24.3	24.3	83.0 79.4	81.2	5.6 5.3	5.5	5.5	7.4 7.6	7.5	7.5	4.9 5.4	5.2	4.7
					Middle	3.2	27.7 27.6	27.6	7.9 7.9	7.9	25.8 25.8	25.8	78.9 80.6	79.8	5.4 5.4	5.4		7.6 7.7	7.7		4.3 4.6	4.5	
					Bottom	5.3	27.6 27.2	27.4	7.8 7.9	7.9	26.9 27.3	27.1	75.3 73.8	74.6	5.1 5.0	5.1	5.1	7.6 7.2	7.4		4.8 4.1	4.5	

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)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*
1-Aug-14	Sunny	Moderate	09:16	6.6	Surface	1.0	29.4 29.5	29.5	7.9 7.9	7.9	20.0 19.9	19.9	84.5 84.7	84.6	5.8 5.8	5.8	5.7	12.6 11.9	12.3	12.9	2.8 2.5	2.7	3.1
					Middle	3.3	29.3 29.3	29.3	7.9 7.9	7.9	20.5 20.3	20.4	79.5 81.8	80.7	5.4 5.6	5.5		12.5 13.4	13.0		3.2 3.0	3.1	
					Bottom	5.6	29.0 29.0	29.0	7.8 7.8	7.8	21.9 21.8	21.9	81.9 77.9	79.9	5.6 5.3	5.5	5.5	13.7 13.2	13.5		3.7 3.0	3.4	
4-Aug-14	Sunny	Moderate	12:58	6.5	Surface	1.0	30.2 30.2	30.2	7.9 7.9	7.9	19.1 19.1	19.1	91.3 93.9	92.6	6.2 6.4	6.3	5.8	4.6 4.5	4.6	6.5	6.0 6.3	6.2	7.7
					Middle	3.3	28.9 28.8	28.9	7.7 7.7	7.7	21.8 22.1	22.0	76.0 79.0	77.5	5.2 5.4	5.3		6.2 6.0	6.1		7.8 7.6	7.7	
					Bottom	5.5	28.2 28.2	28.2	7.6 7.6	7.6	25.9 25.8	25.9	77.5 75.7	76.6	5.2 5.1	5.2	5.2	8.9 8.6	8.8		9.0 9.2	9.1	
6-Aug-14	Sunny	Moderate	15:53	6.3	Surface	1.0	29.5 29.3	29.4	8.5 8.6	8.5	20.6 20.7	20.7	107.3 105.5	106.4	7.3 7.2	7.3	6.6	4.8 4.7	4.8	5.3	3.4 3.2	3.3	4.5
					Middle	3.2	29.0 29.0	29.0	8.5 8.5	8.5	21.5 21.5	21.5	82.4 86.9	84.7	5.6 5.9	5.8		5.6 5.5	5.6		4.8 4.4	4.6	
					Bottom	5.3	28.2 27.6	27.9	8.5 8.6	8.5	26.6 27.5	27.1	80.8 82.8	81.8	5.4 5.6	5.5	5.5	5.4 5.5	5.5		5.7 5.7	5.7	
8-Aug-14	Sunny	Moderate	17:43	6.1	Surface	1.0	29.9 30.0	30.0	8.3 8.3	8.3	19.2 19.2	19.2	105.1 112.1	108.6	7.2 7.6	7.4	6.8	7.0 6.8	6.9	9.7	2.9 3.4	3.2	4.4
					Middle	3.1	29.9 29.7	29.8	8.3 8.3	8.3	19.3 19.7	19.5	91.0 90.6	90.8	6.2 6.2	6.2		9.7 10.0	9.9		4.4 4.5	4.5	
					Bottom	5.1	28.2 28.3	28.3	8.1 8.0	8.0	24.4 24.5	24.5	87.0 82.2	84.6	5.9 5.6	5.8	5.8	12.5 12.0	12.3		5.2 5.9	5.6	
11-Aug-14	Sunny	Moderate	06:24	6.9	Surface	1.0	28.6 28.6	28.6	8.2 8.2	8.2	21.4 21.5	21.5	83.4 83.6	83.5	5.7 5.8	5.7	5.7	5.7 6.1	5.9	7.0	3.4 3.3	3.4	4.0
					Middle	3.5	28.4 28.5	28.4	8.2 8.2	8.2	22.5 21.9	22.2	80.8 81.6	81.2	5.5 5.6	5.6		6.6 6.8	6.7		4.2 3.9	4.1	
					Bottom	5.9	28.4 28.3	28.3	8.2 8.2	8.2	23.1 23.1	23.1	82.4 82.0	82.2	5.6 5.6	5.6	5.6	8.5 8.2	8.4		4.2 4.7	4.5	
13-Aug-14	Rainy	Moderate	08:32	6.7	Surface	1.0	28.3 28.3	28.3	7.8 7.8	7.8	20.9 20.9	20.9	81.2 81.0	81.1	5.6 5.6	5.6	5.5	9.6 9.1	9.4	11.3	2.9 3.4	3.2	4.4
					Middle	3.4	28.2 28.2	28.2	7.8 7.8	7.8	22.7 22.6	22.7	76.6 78.2	77.4	5.3 5.4	5.3		12.2 12.7	12.5		4.4 4.5	4.5	
					Bottom	5.7	28.1 28.1	28.1	7.8 7.5	7.6	23.7 22.9	23.3	79.8 78.8	79.3	5.5 5.4	5.4	5.4	11.6 12.3	12.0		5.2 5.9	5.6	
15-Aug-14	Sunny	Moderate	10:13	6.3	Surface	1.0	28.3 28.6	28.4	7.8 7.8	7.8	20.9 20.6	20.8	73.6 75.3	74.5	5.3 5.4	5.3	5.3	11.2 11.5	11.4	11.5	4.4 5.0	4.7	4.9
					Middle	3.2	28.3 28.3	28.3	7.8 7.8	7.8	21.0 21.0	21.0	73.5 75.4	74.5	5.3 5.4	5.3		11.2 11.7	11.5		5.0 5.4	5.2	
					Bottom	5.3	28.3 28.3	28.3	7.8 7.8	7.8	21.1 21.0	21.0	78.0 74.0	76.0	5.6 5.3	5.4	5.4	11.4 11.6	11.5		5.1 4.5	4.8	
18-Aug-14	Sunny	Moderate	13:17	6.5	Surface	1.0	30.0 30.0	30.0	8.0 8.0	8.0	17.7 17.7	17.7	96.8 98.9	97.9	6.6 6.8	6.7	6.5	6.9 7.3	7.1	9.7	- -	-	1.5
					Middle	3.3	29.6 29.6	29.6	8.0 7.9	7.9	17.9 17.9	17.9	93.0 87.6	90.3	6.3 6.1	6.2		10.2 9.7	10.0		1.1 0.9	1.0	
					Bottom	5.5	29.2 28.8	29.0	7.9 7.7	7.8	22.8 22.7	22.7	91.8 81.9	86.9	6.3 5.6	5.9	5.9	11.6 12.5	12.1		1.8 2.1	2.0	
20-Aug-14	Rainy	Moderate	16:46	6.3	Surface	1.0	29.0 29.0	29.0	8.1 8.1	8.1	15.9 15.9	15.9	85.1 86.8	86.0	6.0 6.1	6.1	5.6	6.2 6.4	6.3	6.4	4.2 3.7	4.0	4.2
					Middle	3.2	28.7 28.7	28.7	7.9 7.9	7.9	19.5 19.6	19.6	72.9 72.7	72.8	5.1 5.0	5.1		6.3 6.3	6.3		4.0 5.1	4.6	
					Bottom	5.3	28.1 28.1	28.1	7.7 7.9	7.8	24.2 23.9	24.1	76.7 77.9	77.3	5.2 5.3	5.3	5.3	6.6 6.4	6.5		3.5 4.3	3.9	

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 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*
22-Aug-14	Sunny	Moderate	17:57	6.2	Surface	1.0	29.1 29.0	29.1	8.1 8.1	8.1	16.4 16.7	16.6	84.7 88.4	86.6	5.9 6.2	6.1	5.7	11.4 11.3	11.4	12.0	2.9 2.5	2.7	3.4
					Middle	3.1	29.0 29.0	29.0	8.1 8.1	8.1	17.2 17.2	17.2	75.1 76.9	76.0	5.3 5.4	5.3		12.1 12.2	12.2		4.0 3.1	3.6	
					Bottom	5.2	27.3 27.4	27.4	7.9 7.9	7.9	25.1 25.0	25.1	74.2 75.7	75.0	5.1 5.2	5.2	5.2	12.4 12.3	12.4		4.0 4.0	4.0	
25-Aug-14	Sunny	Moderate	19:23	6.3	Surface	1.0	29.3 29.3	29.3	8.2 8.2	8.2	19.9 19.8	19.9	106.3 106.3	106.3	7.3 7.3	7.3	7.1	7.0 6.9	7.0	8.3	3.4 4.4	3.9	4.1
					Middle	3.2	29.3 29.2	29.2	8.1 8.1	8.1	20.0 20.1	20.0	101.8 99.4	100.6	7.0 6.8	6.9		8.4 8.6	8.5		3.7 3.9	3.8	
					Bottom	5.3	27.9 29.1	28.5	8.1 8.0	8.1	24.1 23.1	23.6	105.6 99.0	102.3	7.2 6.7	7.0	7.0	9.7 9.0	9.4		3.9 5.2	4.6	
27-Aug-14	Sunny	Moderate	06:53	6.4	Surface	1.0	28.0 28.0	28.0	8.0 8.0	8.0	21.5 21.5	21.5	76.4 75.9	76.2	5.3 5.3	5.3	5.2	11.3 11.5	11.4	11.7	12.4 12.5	12.5	13.2
					Middle	3.2	27.5 27.7	27.6	8.0 8.0	8.0	23.3 22.8	23.1	73.9 73.7	73.8	5.1 5.1	5.1		11.9 11.7	11.8		12.1 12.6	12.4	
					Bottom	5.4	27.6 27.4	27.5	8.0 8.0	8.0	24.7 24.7	24.7	70.6 71.6	71.1	4.9 4.9	4.9	4.9	11.6 11.9	11.8		14.4 14.9	14.7	
29-Aug-14	Sunny	Moderate	08:44	6.4	Surface	1.0	27.8 27.8	27.8	7.8 7.8	7.8	23.1 23.1	23.1	73.4 74.0	73.7	5.1 5.1	5.1	5.1	8.1 8.8	8.5	8.6	4.3 4.7	4.5	5.1
					Middle	3.2	27.7 27.7	27.7	7.8 7.8	7.8	23.4 23.4	23.4	73.9 73.2	73.6	5.1 5.1	5.1		8.7 8.5	8.6		4.6 5.7	5.2	
					Bottom	5.4	27.7 27.7	27.7	7.8 7.8	7.8	23.5 23.4	23.4	76.0 73.7	74.9	5.3 5.1	5.2	5.2	8.7 8.9	8.8		5.4 6.0	5.7	

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 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*
1-Aug-14	Sunny	Moderate	14:37	8.5	Surface	1.0	30.3 30.5	30.4	8.0 7.9	8.0	19.1 18.8	18.9	102.9 105.6	104.3	7.0 7.2	7.1	7.0	5.1 5.0	5.1	5.2	3.5 3.2	3.4	4.2
					Middle	4.3	30.1 30.1	30.1	7.9 7.9	7.9	21.9 22.0	22.0	103.1 101.6	102.4	6.9 6.8	6.9		5.3 5.1	5.2		3.9 4.4	4.2	
					Bottom	7.5	30.1 30.1	30.1	7.9 7.9	7.9	22.3 22.2	22.2	104.6 106.6	105.6	7.0 7.1	7.1	7.1	5.1 5.3	5.2		5.0 4.9	5.0	
4-Aug-14	Sunny	Moderate	17:29	8.5	Surface	1.0	31.0 31.0	31.0	8.5 8.5	8.5	18.6 18.6	18.6	140.3 136.9	138.6	9.4 9.2	9.3	7.3	3.7 3.8	3.8	5.8	6.3 6.2	6.3	6.2
					Middle	4.3	30.1 30.2	30.1	8.2 8.1	8.2	21.1 21.1	21.1	78.5 74.7	76.6	5.3 5.0	5.2		6.6 6.8	6.7		6.5 6.0	6.3	
					Bottom	7.5	27.0 27.0	27.0	7.8 8.0	7.9	30.4 30.5	30.4	74.2 76.9	75.6	5.0 5.2	5.1	5.1	6.8 6.7	6.8		5.7 6.1	5.9	
6-Aug-14	Sunny	Moderate	09:59	8.8	Surface	1.0	29.5 29.6	29.5	8.6 8.5	8.5	19.2 18.5	18.8	82.4 87.2	84.8	5.7 6.0	5.8	5.5	4.6 4.5	4.6	4.5	3.6 3.6	3.6	4.5
					Middle	4.4	27.8 26.9	27.4	8.5 8.5	8.5	27.6 28.8	28.2	74.8 75.5	75.2	5.2 5.2	5.2		4.4 4.4	4.4		4.3 4.6	4.5	
					Bottom	7.8	27.0 27.0	27.0	8.4 8.4	8.4	28.9 28.9	28.9	73.7 74.3	74.0	5.0 5.1	5.1	5.1	4.6 4.4	4.5		5.6 5.3	5.5	
8-Aug-14	Sunny	Moderate	12:02	8.3	Surface	1.0	29.6 29.4	29.5	8.0 8.0	8.0	19.5 19.9	19.7	85.3 88.7	87.0	5.8 6.0	5.9	5.7	7.8 8.5	8.2	10.4	2.1 2.9	2.5	3.5
					Middle	4.2	27.2 26.5	26.9	7.9 7.8	7.9	26.9 29.1	28.0	81.0 80.3	80.7	5.6 5.5	5.5		9.3 9.6	9.5		3.6 3.5	3.6	
					Bottom	7.3	26.5 26.4	26.4	7.9 7.8	7.8	29.2 29.7	29.5	73.1 72.4	72.8	5.0 4.9	5.0	5.0	14.0 13.2	13.6		4.6 4.4	4.5	
11-Aug-14	Sunny	Moderate	11:58	8.8	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	23.2 23.3	23.3	74.4 74.8	74.6	5.1 5.1	5.1	5.1	17.5 16.9	17.2	17.2	14.1 14.0	14.1	16.4
					Middle	4.4	28.9 28.9	28.9	8.2 8.2	8.2	23.3 23.3	23.3	74.7 74.3	74.5	5.1 5.0	5.1		17.7 16.7	17.2		17.0 17.4	17.2	
					Bottom	7.8	28.9 28.8	28.9	8.2 8.2	8.2	23.3 23.3	23.3	74.9 74.4	74.7	5.1 5.0	5.1	5.1	17.8 16.5	17.2		18.1 17.8	18.0	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	14:37	8.5	Surface	1.0	28.7 28.8	28.7	7.7 7.7	7.7	22.7 22.7	22.7	77.6 78.4	78.0	5.5 5.5	5.5	5.5	16.6 16.3	16.5	16.6	16.3 16.3	16.3	18.7
					Middle	4.3	28.6 28.7	28.7	7.7 7.7	7.7	22.8 22.8	22.8	77.2 78.0	77.6	5.4 5.5	5.5		16.7 16.4	16.6		17.7 17.2	17.5	
					Bottom	7.5	28.6 28.7	28.7	7.7 7.7	7.7	22.9 22.8	22.8	78.8 77.9	78.4	5.5 5.5	5.5	5.5	16.5 16.9	16.7		22.3 22.2	22.3	
18-Aug-14	Sunny	Moderate	08:30	8.3	Surface	1.0	29.5 29.5	29.5	8.0 8.0	8.0	18.1 18.4	18.3	79.7 82.9	81.3	5.5 5.7	5.6	5.4	8.3 8.1	8.2	11.0	3.1 3.2	3.2	3.6
					Middle	4.2	28.6 27.0	27.8	7.9 7.9	7.9	24.5 24.7	24.6	74.1 76.5	75.3	5.1 5.2	5.1		12.6 12.9	12.8		3.0 3.3	3.2	
					Bottom	7.3	26.9 26.9	26.9	7.9 7.9	7.9	28.2 28.0	28.1	73.0 72.9	73.0	4.9 4.9	4.9	4.9	11.7 12.2	12.0		4.5 4.4	4.5	
20-Aug-14	Rainy	Moderate	10:42	8.7	Surface	1.0	28.9 28.9	28.9	8.1 8.0	8.1	16.0 16.1	16.0	81.6 81.7	81.7	5.8 5.8	5.8	5.5	7.8 8.1	8.0	8.0	7.5 6.9	7.2	6.9
					Middle	4.4	27.6 26.8	27.2	7.9 7.9	7.9	24.8 27.6	26.2	74.5 75.2	74.9	5.1 5.1	5.1		8.2 8.1	8.2		6.7 6.6	6.7	
					Bottom	7.7	26.2 26.2	26.2	8.0 7.9	7.9	30.3 30.2	30.3	71.3 70.7	71.0	4.9 4.8	4.8	4.8	7.9 7.9	7.9		6.2 7.1	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 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*
22-Aug-14	Sunny	Moderate	12:15	8.6	Surface	1.0	28.8 28.9	28.8	8.0 8.0	8.0	15.7 15.2	15.4	74.8 76.5	75.7	5.3 5.4	5.4	5.3	8.5 8.4	8.5	8.6	4.9 4.6	4.8	4.8
					Middle	4.3	26.8 26.7	26.8	7.9 8.0	7.9	26.2 25.8	26.0	70.8 70.6	70.7	5.1 5.1	5.1		8.4 8.5	8.5		4.4 4.9	4.7	
					Bottom	7.6	26.6 26.7	26.7	7.9 7.9	7.9	27.1 27.0	27.1	70.2 69.8	70.0	5.0 4.8	4.9	4.9	8.8 8.6	8.7		5.1 4.8	5.0	
25-Aug-14	Sunny	Moderate	14:14	8.4	Surface	1.0	28.8 28.8	28.8	8.1 8.1	8.1	20.8 20.9	20.8	85.8 84.0	84.9	5.9 5.8	5.8	5.6	8.9 9.3	9.1	10.3	3.9 4.4	4.2	4.6
					Middle	4.2	27.2 26.6	26.9	8.0 8.0	8.0	26.7 27.3	27.0	74.8 78.5	76.7	5.1 5.4	5.3		10.1 9.8	10.0		4.6 4.0	4.3	
					Bottom	7.4	26.3 26.5	26.4	7.9 8.0	8.0	28.7 28.3	28.5	69.3 70.4	69.9	4.8 4.8	4.8	4.8	11.6 12.1	11.9		4.9 5.6	5.3	
27-Aug-14	Sunny	Moderate	12:56	8.6	Surface	1.0	28.1 28.1	28.1	8.1 8.1	8.1	23.1 23.1	23.1	77.9 77.3	77.6	5.4 5.3	5.3	5.3	11.4 11.2	11.3	11.4	11.4 11.6	11.5	12.0
					Middle	4.3	28.1 28.1	28.1	8.1 8.1	8.1	23.2 23.3	23.2	77.2 76.7	77.0	5.3 5.3	5.3		11.3 11.3	11.3		12.0 12.0	12.0	
					Bottom	7.6	28.1 28.1	28.1	8.1 8.1	8.1	23.4 23.4	23.4	77.7 77.8	77.8	5.3 5.3	5.3	5.3	11.5 11.5	11.5		13.0 12.0	12.5	
29-Aug-14	Sunny	Moderate	13:59	8.5	Surface	1.0	28.1 28.1	28.1	7.8 7.8	7.8	24.8 24.8	24.8	76.9 77.1	77.0	5.2 5.3	5.2	5.2	20.4 20.1	20.3	20.7	4.3 4.4	4.4	4.6
					Middle	4.3	28.1 28.1	28.1	7.8 7.8	7.8	24.9 25.0	24.9	76.9 77.1	77.0	5.2 5.2	5.2		20.7 21.2	21.0		3.9 5.1	4.5	
					Bottom	7.5	28.1 28.1	28.1	7.8 7.8	7.8	24.9 25.0	25.0	76.9 77.0	77.0	5.2 5.2	5.2	5.2	20.3 21.5	20.9		4.8 4.8	4.8	

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 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*
1-Aug-14	Sunny	Moderate	10:04	8.4	Surface	1.0	29.7 29.8	29.7	8.2 8.2	8.2	21.0 21.0	21.0	95.2 98.3	96.8	6.5 6.7	6.6	6.4	5.7 5.3	5.5	7.1	5.1 4.4	4.8	5.3
					Middle	4.2	29.3 29.6	29.4	8.1 8.1	8.1	22.4 21.7	22.0	90.3 93.3	91.8	6.1 6.3	6.2		7.6 7.2	7.4		5.2 5.9	5.6	
					Bottom	7.4	29.2 29.3	29.3	8.1 8.1	8.1	22.7 22.6	22.7	94.3 94.9	94.6	6.4 6.4	6.4	6.4	8.8 8.1	8.5		5.8 5.3	5.6	
4-Aug-14	Sunny	Moderate	13:44	8.6	Surface	1.0	30.9 30.9	30.9	8.4 8.4	8.4	19.6 19.7	19.7	137.2 140.4	138.8	9.2 9.4	9.3	7.4	6.3 6.5	6.4	6.3	4.2 3.8	4.0	4.1
					Middle	4.3	29.6 30.1	29.8	8.0 8.1	8.0	23.4 22.9	23.1	81.7 80.5	81.1	5.5 5.4	5.5		6.1 6.3	6.2		4.2 3.8	4.0	
					Bottom	7.6	26.8 26.8	26.8	7.9 7.9	7.9	30.2 30.2	30.2	73.7 74.2	74.0	4.9 5.0	5.0	5.0	6.2 6.3	6.3		4.3 4.5	4.4	
6-Aug-14	Sunny	Moderate	15:10	8.7	Surface	1.0	29.5 29.9	29.7	8.5 8.5	8.5	21.7 20.7	21.2	88.6 94.0	91.3	6.0 6.4	6.2	5.7	4.5 4.6	4.6	7.2	3.8 4.0	3.9	5.7
					Middle	4.4	27.7 27.8	27.8	8.5 8.5	8.5	25.5 26.2	25.9	73.9 74.6	74.3	5.1 5.1	5.1		8.6 8.3	8.5		6.4 6.4	6.4	
					Bottom	7.7	27.4 27.5	27.5	8.5 8.5	8.5	28.0 27.7	27.9	73.6 72.9	73.3	5.0 5.0	5.0	5.0	8.5 8.6	8.6		6.7 6.7	6.7	
8-Aug-14	Sunny	Moderate	16:50	8.4	Surface	1.0	30.3 30.4	30.3	8.3 8.3	8.3	20.8 20.7	20.7	114.5 115.6	115.1	7.7 7.8	7.7	6.9	8.6 9.0	8.8	11.0	6.2 6.1	6.2	7.2
					Middle	4.2	29.4 29.2	29.3	8.1 8.0	8.1	22.5 23.0	22.8	92.8 89.1	91.0	6.3 6.0	6.1		12.0 12.1	12.1		7.6 7.6	7.6	
					Bottom	7.4	29.1 29.2	29.2	8.0 8.1	8.0	23.4 23.1	23.3	93.1 94.4	93.8	6.3 6.4	6.3	6.3	12.3 12.1	12.2		7.9 7.8	7.9	
11-Aug-14	Sunny	Moderate	07:12	8.7	Surface	1.0	29.0 29.0	29.0	8.2 8.2	8.2	22.7 22.7	22.7	79.1 77.8	78.5	5.4 5.3	5.3	5.4	7.5 8.0	7.8	8.2	6.1 6.1	6.1	7.1
					Middle	4.4	29.0 29.0	29.0	8.2 8.2	8.2	22.7 22.8	22.7	80.5 77.4	79.0	5.5 5.3	5.4		8.5 8.2	8.4		6.8 6.4	6.6	
					Bottom	7.7	29.0 29.0	29.0	8.2 8.2	8.2	22.8 22.8	22.8	82.8 77.8	80.3	5.6 5.3	5.5	5.5	8.8 8.2	8.5		8.3 8.7	8.5	
13-Aug-14	Rainy	Moderate	09:35	8.7	Surface	1.0	28.5 28.5	28.5	7.9 7.9	7.9	22.2 22.0	22.1	75.8 77.2	76.5	5.2 5.3	5.3	5.3	12.4 11.3	11.9	13.3	6.2 6.1	6.2	7.2
					Middle	4.4	28.5 28.5	28.5	7.9 7.9	7.9	22.7 22.6	22.6	75.0 76.0	75.5	5.1 5.2	5.2		14.2 13.1	13.7		7.6 7.6	7.6	
					Bottom	7.7	28.5 28.5	28.5	7.8 7.9	7.8	22.9 22.9	22.9	76.8 76.3	76.6	5.2 5.2	5.2	5.2	14.0 14.4	14.2		7.9 7.8	7.9	
15-Aug-14	Sunny	Moderate	11:05	8.6	Surface	1.0	28.6 28.6	28.6	7.8 7.8	7.8	21.9 21.9	21.9	75.8 76.0	75.9	5.4 5.4	5.4	5.4	8.4 8.2	8.3	8.6	7.5 7.0	7.3	7.9
					Middle	4.3	28.3 28.3	28.3	7.8 7.8	7.8	22.2 22.2	22.2	74.4 74.0	74.2	5.3 5.3	5.3		8.8 8.7	8.8		8.3 7.8	8.1	
					Bottom	7.6	28.3 28.2	28.3	7.8 7.8	7.8	22.3 22.4	22.3	75.1 73.0	74.1	5.3 5.2	5.3	5.3	8.5 8.6	8.6		8.2 8.1	8.2	
18-Aug-14	Sunny	Moderate	12:23	8.5	Surface	1.0	29.8 29.9	29.9	8.0 8.0	8.0	20.1 20.0	20.1	84.6 86.1	85.4	5.8 5.8	5.8	5.6	7.3 7.1	7.2	10.6	2.4 3.0	2.7	3.2
					Middle	4.3	28.7 28.7	28.7	7.9 7.9	7.9	23.7 23.7	23.7	77.8 78.2	78.0	5.3 5.3	5.3		11.3 11.5	11.4		3.2 3.4	3.3	
					Bottom	7.5	27.7 27.9	27.8	7.8 7.9	7.8	25.9 26.0	25.9	71.0 71.2	71.1	4.8 4.8	4.8	4.8	12.7 13.4	13.1		3.5 3.6	3.6	
20-Aug-14	Rainy	Moderate	15:58	8.5	Surface	1.0	28.9 28.9	28.9	8.0 8.0	8.0	16.1 16.1	16.1	88.0 89.0	88.5	6.2 6.3	6.2	5.7	7.7 7.7	7.7	7.8	4.8 5.6	5.2	5.4
					Middle	4.3	28.4 28.1	28.3	7.8 7.8	7.8	21.7 22.0	21.9	75.8 76.3	76.1	5.2 5.2	5.2		7.7 7.8	7.8		5.1 4.6	4.9	
					Bottom	7.5	26.4 26.3	26.3	7.7 7.8	7.8	30.0 30.4	30.2	75.2 75.9	75.6	5.1 5.2	5.1	5.1	7.8 7.9	7.9		6.4 6.0	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 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*
22-Aug-14	Sunny	Moderate	17:10	8.6	Surface	1.0	29.5 29.3	29.4	8.2 8.2	8.2	17.6 18.1	17.8	95.9 93.0	94.5	6.6 6.4	6.5	5.8	9.8 9.9	9.9	9.8	3.4 3.2	3.3	4.6
					Middle	4.3	28.5 28.4	28.5	8.1 8.1	8.1	20.5 20.5	20.5	74.9 73.4	74.2	5.2 5.1	5.1		9.8 9.8	9.8		4.7 5.2	5.0	
					Bottom	7.6	27.6 27.5	27.6	8.0 8.0	8.0	24.0 24.6	24.3	76.9 77.1	77.0	5.3 5.3	5.3	5.3	9.7 9.7	9.7		5.7 5.0	5.4	
25-Aug-14	Sunny	Moderate	18:26	8.5	Surface	1.0	29.8 29.7	29.8	8.2 8.1	8.2	20.4 20.7	20.6	88.7 84.9	86.8	6.0 5.8	5.9	5.6	9.3 9.1	9.2	10.0	6.6 6.4	6.5	8.3
					Middle	4.3	28.4 28.2	28.3	8.1 8.0	8.0	23.2 24.1	23.6	78.0 75.5	76.8	5.3 5.2	5.2		9.6 9.7	9.7		8.3 8.0	8.2	
					Bottom	7.5	27.7 27.6	27.6	8.0 7.9	8.0	25.4 24.8	25.1	76.0 74.3	75.2	5.2 5.1	5.2	5.2	10.8 11.3	11.1		10.3 9.8	10.1	
27-Aug-14	Sunny	Moderate	07:39	8.4	Surface	1.0	28.4 28.4	28.4	8.1 8.1	8.1	21.6 21.7	21.7	83.3 80.5	81.9	5.7 5.6	5.6	5.4	10.5 10.3	10.4	10.4	12.8 12.8	12.8	12.9
					Middle	4.2	28.1 28.0	28.1	8.1 8.1	8.1	22.1 22.3	22.2	74.5 74.3	74.4	5.1 5.1	5.1		10.5 10.1	10.3		12.8 12.9	12.9	
					Bottom	7.4	27.7 27.7	27.7	8.0 8.0	8.0	24.2 24.5	24.4	76.0 77.5	76.8	5.2 5.3	5.3	5.3	10.4 10.3	10.4		13.0 12.9	13.0	
29-Aug-14	Sunny	Moderate	09:29	8.4	Surface	1.0	28.1 28.0	28.1	8.0 8.0	8.0	23.4 23.4	23.4	78.1 77.4	77.8	5.4 5.3	5.3	5.3	12.4 12.5	12.5	12.5	7.4 7.0	7.2	6.6
					Middle	4.2	28.0 27.9	28.0	8.0 8.0	8.0	23.5 23.6	23.6	76.3 76.8	76.6	5.2 5.3	5.3		12.0 12.5	12.3		7.1 5.7	6.4	
					Bottom	7.4	27.8 27.9	27.8	8.0 8.0	8.0	23.9 23.8	23.8	78.1 76.6	77.4	5.4 5.3	5.3	5.3	12.5 12.6	12.6		7.1 5.4	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-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*
1-Aug-14	Sunny	Moderate	14:54	3.2	Surface	1.0	30.3 30.4	30.3	8.2 8.2	8.2	21.5 21.5	21.5	129.8 134.5	132.2	8.6 9.0	8.8	8.8	5.3 5.1	5.2	6.4	3.4 3.3	3.4	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	30.2 30.3	30.2	8.0 8.2	8.1	22.0 21.7	21.8	114.0 127.4	120.7	7.6 8.5	8.1	8.1	7.3 7.6	7.5		5.3 4.7	5.0	
4-Aug-14	Sunny	Moderate	17:43	3.4	Surface	1.0	31.3 31.3	31.3	8.5 8.5	8.5	19.1 19.2	19.2	167.8 172.4	170.1	10.5 10.8	10.6	10.6	3.5 3.3	3.4	3.5	5.3 5.4	5.4	5.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	30.7 30.8	30.8	8.4 8.5	8.5	20.2 20.1	20.1	151.1 150.8	151.0	9.4 9.4	9.4	9.4	3.6 3.6	3.6		5.1 5.6	5.4	
6-Aug-14	Sunny	Moderate	09:44	3.2	Surface	1.0	30.1 29.9	30.0	8.4 8.3	8.4	21.0 21.2	21.1	97.5 89.9	93.7	6.6 6.1	6.3	6.3	7.9 7.4	7.7	7.8	4.4 3.9	4.2	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.6 29.3	29.4	8.4 8.2	8.3	22.4 22.9	22.7	91.3 89.2	90.3	6.2 6.0	6.1	6.1	7.9 7.8	7.9		4.0 4.4	4.2	
8-Aug-14	Sunny	Moderate	11:41	3.2	Surface	1.0	29.8 29.8	29.8	8.1 8.1	8.1	20.1 20.1	20.1	104.8 101.3	103.1	7.1 6.9	7.0	7.0	7.7 7.4	7.6	8.3	2.2 2.2	2.2	2.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.8 29.8	29.8	8.1 8.1	8.1	20.3 20.4	20.3	103.1 99.5	101.3	7.0 6.8	6.9	6.9	9.3 8.5	8.9		2.6 2.6	2.6	
11-Aug-14	Sunny	Moderate	12:18	3.5	Surface	1.0	29.4 29.3	29.3	8.2 8.2	8.2	22.0 22.1	22.1	86.8 85.7	86.3	5.9 5.8	5.8	5.8	7.2 6.9	7.1	7.8	4.2 4.8	4.5	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	29.1 29.3	29.2	8.2 8.2	8.2	22.4 22.6	22.5	88.3 85.8	87.1	6.0 5.8	5.9	5.9	8.6 8.3	8.5		4.7 5.2	5.0	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	15:02	3.6	Surface	1.0	29.5 29.5	29.5	7.8 7.8	7.8	21.3 21.3	21.3	86.3 85.1	85.7	6.0 5.9	6.0	6.0	5.7 5.8	5.8	6.1	4.0 3.9	4.0	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.2 29.2	29.2	7.8 7.8	7.8	21.9 22.1	22.0	87.0 84.6	85.8	6.1 5.9	6.0	6.0	6.2 6.4	6.3		4.3 4.9	4.6	
18-Aug-14	Sunny	Moderate	08:06	3.1	Surface	1.0	30.0 30.1	30.1	7.9 7.9	7.9	18.2 18.2	18.2	95.6 97.4	96.5	6.5 6.7	6.6	6.6	5.2 5.3	5.3	6.2	1.7 1.4	1.6	2.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	30.2 30.2	30.2	7.8 7.9	7.8	19.4 19.5	19.5	90.4 96.1	93.3	6.1 6.5	6.3	6.3	7.0 6.9	7.0		2.4 2.7	2.6	
20-Aug-14	Rainy	Moderate	10:27	3.2	Surface	1.0	29.0 29.1	29.0	8.1 8.1	8.1	15.7 15.6	15.6	90.2 91.8	91.0	6.4 6.5	6.4	6.4	10.6 10.4	10.5	10.6	6.0 4.5	5.3	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.6 30.0	29.8	8.0 8.0	8.0	17.2 17.1	17.2	91.3 90.1	90.7	6.3 6.2	6.3	6.3	10.5 10.7	10.6		4.5 5.2	4.9	

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-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*
22-Aug-14	Sunny	Moderate	12:01	3.3	Surface	1.0	28.7 28.9	28.8	8.1 8.1	8.1	18.4 18.3	18.3	82.9 85.2	84.1	5.8 5.9	5.9	5.9	8.6 8.1	8.4	8.6	1.9 1.9	1.9	1.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.5 28.7	28.6	7.9 8.0	7.9	21.0 21.2	21.1	83.0 86.0	84.5	5.7 5.9	5.8	5.8	8.7 8.8	8.8		1.6 1.8	1.7	
25-Aug-14	Sunny	Moderate	13:54	3.2	Surface	1.0	28.9 28.9	28.9	8.2 8.1	8.1	19.1 19.2	19.2	97.2 96.2	96.7	6.7 6.7	6.7	6.7	11.4 11.8	11.6	12.3	3.5 3.1	3.3	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.8 28.8	28.8	8.1 8.1	8.1	20.8 20.8	20.8	97.8 97.8	97.8	6.7 6.7	6.7	6.7	12.6 13.1	12.9		3.9 3.2	3.6	
27-Aug-14	Sunny	Moderate	13:10	3.2	Surface	1.0	28.4 28.4	28.4	8.1 8.1	8.1	21.5 21.6	21.6	91.4 91.9	91.7	6.3 6.3	6.3	6.3	5.7 5.7	5.7	5.7	6.6 6.0	6.3	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.4 28.4	28.4	8.1 8.1	8.1	21.5 21.6	21.6	91.5 92.8	92.2	6.3 6.4	6.4	6.4	5.7 5.6	5.7		7.0 6.6	6.8	
29-Aug-14	Sunny	Moderate	14:13	3.1	Surface	1.0	29.8 29.7	29.8	8.0 8.0	8.0	24.0 24.1	24.0	86.9 81.6	84.3	5.8 5.4	5.6	5.6	7.6 7.7	7.7	7.7	3.7 2.8	3.3	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	28.4 28.7	28.5	8.0 8.0	8.0	24.6 24.4	24.5	80.7 84.6	82.7	5.5 5.7	5.6	5.6	7.7 7.5	7.6		2.3 2.6	2.5	

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 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*
1-Aug-14	Sunny	Moderate	09:48	3.4	Surface	1.0	30.1 30.2	30.2	8.0 8.1	8.1	20.6 20.5	20.6	103.8 103.3	103.6	7.0 7.0	7.0	7.0	10.5 10.1	10.3	12.5	2.5 2.7	2.6	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	30.1 30.1	30.1	8.0 8.0	8.0	21.0 21.0	21.0	100.5 104.5	102.5	6.8 7.0	6.9	6.9	14.2 15.2	14.7		3.8 3.8	3.8	
4-Aug-14	Sunny	Moderate	13:29	3.1	Surface	1.0	31.1 31.0	31.0	8.2 8.3	8.3	19.2 19.4	19.3	156.0 158.5	157.3	10.4 10.6	10.5	10.5	3.5 3.5	3.5	3.6	2.8 2.4	2.6	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	30.7 30.8	30.7	8.2 8.2	8.2	20.1 20.4	20.2	143.6 158.5	151.1	9.6 10.6	10.1	10.1	3.6 3.7	3.7		3.9 3.3	3.6	
6-Aug-14	Sunny	Moderate	15:22	3.2	Surface	1.0	29.7 30.0	29.8	8.5 8.5	8.5	21.3 20.7	21.0	94.6 92.2	93.4	6.4 6.2	6.3	6.3	7.8 7.7	7.8	7.8	5.2 5.3	5.3	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.4 28.9	29.1	8.5 8.5	8.5	23.0 23.4	23.2	96.2 85.9	91.1	6.5 5.8	6.2	6.2	7.5 7.8	7.7		5.9 5.2	5.6	
8-Aug-14	Sunny	Moderate	17:07	3.1	Surface	1.0	30.4 30.3	30.4	8.1 8.0	8.0	20.7 20.8	20.8	133.3 123.3	128.3	8.9 8.3	8.6	8.6	9.1 9.4	9.3	10.2	5.7 5.6	5.7	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	30.4 30.0	30.2	8.0 7.9	8.0	20.9 21.4	21.2	127.3 117.3	122.3	8.5 7.9	8.2	8.2	10.7 11.2	11.0		6.0 6.6	6.3	
11-Aug-14	Sunny	Moderate	06:53	3.2	Surface	1.0	28.7 28.7	28.7	8.2 8.2	8.2	22.1 22.1	22.1	86.8 84.5	85.7	6.0 5.8	5.9	5.9	8.7 9.2	9.0	9.0	4.9 5.0	5.0	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.8 28.7	28.7	8.2 8.2	8.2	22.3 22.1	22.2	85.3 82.1	83.7	5.8 5.6	5.7	5.7	9.3 8.5	8.9		6.3 6.9	6.6	
13-Aug-14	Rainy	Moderate	09:10	3.3	Surface	1.0	28.4 28.5	28.5	7.9 7.9	7.9	22.1 22.1	22.1	78.1 77.7	77.9	5.4 5.3	5.4	5.4	8.3 8.1	8.2	8.2	5.7 5.6	5.7	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	28.5 28.5	28.5	7.9 7.9	7.9	22.1 22.2	22.2	77.9 77.8	77.9	5.4 5.3	5.3	5.3	8.3 8.0	8.2		6.0 6.6	6.3	
15-Aug-14	Sunny	Moderate	10:50	3.2	Surface	1.0	28.6 28.5	28.5	7.8 7.8	7.8	21.7 21.7	21.7	80.0 77.7	78.9	5.7 5.5	5.6	5.6	6.9 7.0	7.0	7.0	3.3 3.8	3.6	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.5 28.5	28.5	7.8 7.8	7.8	21.8 21.9	21.9	78.4 83.9	81.2	5.5 5.9	5.7	5.7	6.9 6.8	6.9		4.8 3.9	4.4	
18-Aug-14	Sunny	Moderate	12:42	3.1	Surface	1.0	30.6 30.5	30.6	8.0 8.0	8.0	19.7 19.7	19.7	99.7 99.4	99.6	6.7 6.7	6.7	6.7	8.9 9.2	9.1	9.6	4.2 4.8	4.5	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	30.0 30.4	30.2	7.8 7.9	7.9	20.2 20.1	20.2	96.5 100.6	98.6	6.5 6.8	6.7	6.7	9.7 10.2	10.0		4.8 4.7	4.8	
20-Aug-14	Rainy	Moderate	16:14	3.2	Surface	1.0	29.2 29.2	29.2	8.1 8.0	8.1	16.0 16.0	16.0	95.3 95.7	95.5	6.7 6.7	6.7	6.7	10.2 10.1	10.2	10.3	5.9 6.0	6.0	6.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	29.3 29.5	29.4	8.0 7.9	8.0	16.9 16.9	16.9	97.0 97.4	97.2	6.8 6.8	6.8	6.8	10.4 10.1	10.3		7.3 5.9	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 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*
22-Aug-14	Sunny	Moderate	17:24	3.1	Surface	1.0	29.4 29.5	29.5	8.0 8.0	8.0	18.6 18.4	18.5	82.3 93.1	87.7	5.7 6.4	6.0	6.0	18.5 18.1	18.3	18.5	1.4 1.7	1.6	1.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	29.1 28.6	28.9	7.9 7.8	7.9	20.1 21.5	20.8	85.8 82.1	84.0	5.9 5.7	5.8	5.8	18.7 18.7	18.7		1.7 1.6	1.7	
25-Aug-14	Sunny	Moderate	18:46	3.0	Surface	1.0	29.9 29.9	29.9	8.4 8.4	8.4	20.0 19.9	19.9	135.5 136.7	136.1	9.2 9.3	9.2	9.2	6.6 6.3	6.5	6.9	4.2 4.2	4.2	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.0	29.8 29.8	29.8	8.3 8.4	8.3	20.2 20.1	20.2	134.6 136.8	135.7	9.1 9.3	9.2	9.2	7.5 7.1	7.3		5.4 5.6	5.5	
27-Aug-14	Sunny	Moderate	07:25	3.1	Surface	1.0	28.5 28.5	28.5	8.1 8.1	8.1	21.2 21.1	21.2	91.0 91.7	91.4	6.3 6.3	6.3	6.3	6.0 6.1	6.1	6.2	7.2 7.7	7.5	8.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	28.5 28.5	28.5	8.1 8.1	8.1	21.5 21.6	21.6	91.3 94.2	92.8	6.3 6.5	6.4	6.4	6.1 6.4	6.3		9.1 8.8	9.0	
29-Aug-14	Sunny	Moderate	09:13	3.2	Surface	1.0	28.3 28.3	28.3	8.0 8.0	8.0	23.1 23.1	23.1	82.9 81.4	82.2	5.7 5.6	5.6	5.6	7.2 7.5	7.4	7.5	4.9 4.1	4.5	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	28.1 28.2	28.2	8.0 8.0	8.0	23.4 23.3	23.4	81.8 81.6	81.7	5.6 5.6	5.6	5.6	7.5 7.4	7.5		4.5 3.4	4.0	

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 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*
1-Aug-14	Sunny	Moderate	15:21	3.7	Surface	1.0	29.7 29.6	29.7	8.0 8.0	8.0	21.9 22.1	22.0	87.8 83.0	85.4	5.9 5.6	5.8	5.8	7.9 8.2	8.1	10.3	3.7 3.7	3.7	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.5 29.6	29.6	8.0 7.9	8.0	22.5 22.4	22.4	93.0 87.6	90.3	6.3 5.9	6.1	6.1	12.3 12.5	12.4		4.0 3.9	4.0	
4-Aug-14	Sunny	Moderate	18:07	4.0	Surface	1.0	30.6 30.4	30.5	8.5 8.5	8.5	19.3 19.4	19.3	131.3 142.6	137.0	8.8 9.6	9.2	9.2	8.4 8.5	8.5	8.7	2.8 3.4	3.1	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	29.9 29.7	29.8	8.5 8.5	8.5	21.7 21.7	21.7	141.5 120.2	130.9	9.5 8.1	8.8	8.8	8.7 8.9	8.8		4.4 3.3	3.9	
6-Aug-14	Sunny	Moderate	09:20	4.0	Surface	1.0	30.0 30.0	30.0	8.5 8.5	8.5	20.3 20.3	20.3	91.7 93.5	92.6	6.2 6.3	6.3	6.3	3.8 4.0	3.9	4.3	2.9 3.1	3.0	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.0 27.9	28.0	8.5 8.5	8.5	24.6 26.3	25.4	87.9 92.3	90.1	6.0 6.2	6.1	6.1	4.8 4.6	4.7		3.3 2.7	3.0	
8-Aug-14	Sunny	Moderate	11:18	3.7	Surface	1.0	29.7 29.7	29.7	8.3 8.3	8.3	19.5 19.5	19.5	105.3 109.2	107.3	7.2 7.5	7.3	7.3	5.8 5.4	5.6	6.4	1.9 2.2	2.1	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.6 29.7	29.6	8.2 8.3	8.2	20.6 21.2	20.9	106.3 109.3	107.8	7.2 7.4	7.3	7.3	7.3 6.8	7.1		2.9 3.1	3.0	
11-Aug-14	Sunny	Moderate	12:44	3.7	Surface	1.0	29.0 29.0	29.0	8.2 8.2	8.2	22.2 22.1	22.2	80.6 80.6	80.6	5.5 5.5	5.5	5.5	6.9 6.6	6.8	7.3	4.4 4.7	4.6	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.0 29.0	29.0	8.2 8.2	8.2	22.6 22.6	22.6	80.7 80.7	80.7	5.5 5.5	5.5	5.5	7.4 8.0	7.7		4.8 4.9	4.9	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	15:39	4.0	Surface	1.0	29.5 29.7	29.6	7.8 7.8	7.8	20.6 20.5	20.5	77.5 79.6	78.6	5.4 5.6	5.5	5.5	8.4 8.1	8.3	8.4	7.0 7.0	7.0	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.4 28.3	28.4	7.8 7.8	7.8	22.2 22.2	22.2	78.6 74.6	76.6	5.6 5.3	5.4	5.4	8.5 8.5	8.5		8.2 8.4	8.3	
18-Aug-14	Sunny	Moderate	07:34	3.7	Surface	1.0	29.6 29.7	29.7	7.9 7.9	7.9	18.4 18.7	18.6	90.7 90.8	90.8	6.2 6.2	6.2	6.2	5.3 5.2	5.3	5.5	2.5 2.7	2.6	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.5 29.7	29.6	7.8 7.9	7.9	19.8 19.7	19.7	96.1 91.4	93.8	6.6 6.2	6.4	6.4	5.8 5.6	5.7		2.6 2.6	2.6	
20-Aug-14	Rainy	Moderate	10:04	3.9	Surface	1.0	29.1 29.2	29.1	8.0 8.0	8.0	15.1 16.2	15.6	90.1 91.6	90.9	6.4 6.4	6.4	6.4	7.8 8.0	7.9	8.3	4.8 4.7	4.8	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	29.1 29.2	29.1	7.9 8.0	8.0	18.2 19.2	18.7	83.8 92.9	88.4	5.8 6.4	6.1	6.1	8.7 8.6	8.7		5.3 4.4	4.9	

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 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*
22-Aug-14	Sunny	Moderate	11:37	4.1	Surface	1.0	28.8 28.7	28.8	8.0 8.0	8.0	17.8 17.9	17.8	81.1 81.5	81.3	5.7 5.7	5.7	5.7	4.6 4.8	4.7	4.8	2.3 2.1	2.2	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.5 28.4	28.4	8.0 7.9	7.9	21.4 20.6	21.0	82.6 79.1	80.9	5.7 5.5	5.6	5.6	4.7 4.8	4.8		4.0 3.9	4.0	
25-Aug-14	Sunny	Moderate	13:21	3.7	Surface	1.0	30.0 29.9	29.9	8.2 8.2	8.2	19.4 19.4	19.4	101.9 104.0	103.0	6.9 7.1	7.0	7.0	7.0 7.6	7.3	8.1	7.2 7.2	7.2	7.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.5 28.5	28.5	8.1 8.1	8.1	21.6 21.5	21.5	104.0 96.4	100.2	7.2 6.6	6.9	6.9	9.0 8.5	8.8		8.7 8.4	8.6	
27-Aug-14	Sunny	Moderate	13:32	4.0	Surface	1.0	28.4 28.4	28.4	8.1 8.1	8.1	21.8 21.8	21.8	89.8 88.7	89.3	6.2 6.1	6.1	6.1	4.5 4.8	4.7	4.6	7.0 7.0	7.0	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.4 28.4	28.4	8.1 8.1	8.1	21.9 21.9	21.9	90.7 89.3	90.0	6.3 6.2	6.2	6.2	4.6 4.4	4.5		7.4 7.8	7.6	
29-Aug-14	Sunny	Moderate	14:36	4.1	Surface	1.0	28.0 28.0	28.0	7.9 7.9	7.9	24.6 24.7	24.6	80.1 78.0	79.1	5.5 5.3	5.4	5.4	10.9 10.7	10.8	10.7	4.3 4.9	4.6	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.0 27.9	28.0	7.9 7.9	7.9	24.8 24.9	24.9	78.9 84.1	81.5	5.4 5.7	5.6	5.6	10.5 10.5	10.5		4.3 5.7	5.0	

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 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*
1-Aug-14	Sunny	Moderate	09:23	3.6	Surface	1.0	29.7 29.7	29.7	7.9 7.9	7.9	19.8 19.8	19.8	92.7 94.7	93.7	6.3 6.5	6.4	6.4	9.9 10.5	10.2	11.5	11.4 11.1	11.3	11.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.7 29.7	29.7	7.9 7.9	7.9	20.2 20.2	20.2	96.2 93.5	94.9	6.5 6.4	6.5	6.5	12.5 12.9	12.7		11.4 11.6	11.5	
4-Aug-14	Sunny	Moderate	13:06	4.0	Surface	1.0	30.0 29.8	29.9	8.0 8.0	8.0	19.4 19.4	19.4	124.3 122.3	123.3	8.5 8.3	8.4	8.4	4.5 4.6	4.6	4.6	3.6 3.8	3.7	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	29.9 29.8	29.8	8.0 8.0	8.0	20.9 20.8	20.8	121.6 123.3	122.5	8.2 8.3	8.3	8.3	4.5 4.4	4.5		4.0 4.0	4.0	
6-Aug-14	Sunny	Moderate	15:46	3.9	Surface	1.0	29.4 29.5	29.4	8.5 8.5	8.5	20.9 20.8	20.9	109.0 109.4	109.2	7.4 7.4	7.4	7.4	6.6 6.8	6.7	6.7	6.1 6.7	6.4	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	29.3 29.1	29.2	8.5 8.5	8.5	23.6 22.4	23.0	115.5 115.0	115.3	7.8 7.8	7.8	7.8	6.5 6.6	6.6		6.3 6.6	6.5	
8-Aug-14	Sunny	Moderate	17:35	3.7	Surface	1.0	29.9 29.9	29.9	8.3 8.3	8.3	18.9 19.0	18.9	105.7 107.5	106.6	7.2 7.3	7.3	7.3	13.1 13.4	13.3	15.1	2.6 2.7	2.7	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.7 29.7	29.7	8.3 8.3	8.3	19.5 19.6	19.5	106.6 103.2	104.9	7.3 7.0	7.2	7.2	17.7 16.1	16.9		7.4 7.2	7.3	
11-Aug-14	Sunny	Moderate	06:31	3.8	Surface	1.0	28.8 28.8	28.8	8.2 8.2	8.2	21.2 21.2	21.2	85.6 82.1	83.9	5.9 5.6	5.8	5.8	7.6 8.0	7.8	7.9	3.9 3.5	3.7	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.8 28.7	28.8	8.2 8.2	8.2	21.4 21.6	21.5	83.8 83.0	83.4	5.8 5.7	5.7	5.7	8.2 7.7	8.0		4.0 4.7	4.4	
13-Aug-14	Rainy	Moderate	08:39	3.8	Surface	1.0	28.5 28.5	28.5	7.8 7.8	7.8	21.4 21.3	21.4	85.1 87.7	86.4	5.9 6.1	6.0	6.0	16.9 17.8	17.4	17.5	2.6 2.7	2.7	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.5 28.5	28.5	7.7 7.8	7.8	21.0 21.4	21.2	84.4 86.0	85.2	5.9 5.9	5.9	5.9	17.6 17.5	17.6		7.4 7.2	7.3	
15-Aug-14	Sunny	Moderate	10:24	4.1	Surface	1.0	28.7 28.7	28.7	7.8 7.8	7.8	20.1 20.1	20.1	76.0 77.5	76.8	5.4 5.5	5.5	5.5	12.6 12.8	12.7	12.6	13.7 13.7	13.7	14.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.5 28.7	28.6	7.8 7.8	7.8	20.5 20.2	20.3	75.7 79.7	77.7	5.4 5.7	5.5	5.5	12.5 12.4	12.5		16.0 16.0	16.0	
18-Aug-14	Sunny	Moderate	13:08	3.7	Surface	1.0	30.0 30.0	30.0	8.0 8.0	8.0	17.6 18.2	17.9	104.2 104.5	104.4	7.2 7.2	7.2	7.2	8.3 8.0	8.2	9.3	- 0.5	0.3	1.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	30.0 30.0	30.0	8.0 8.0	8.0	18.5 18.6	18.5	104.4 103.7	104.1	7.1 7.1	7.1	7.1	9.8 10.7	10.3		2.0 1.9	2.0	
20-Aug-14	Rainy	Moderate	16:38	4.1	Surface	1.0	29.1 29.2	29.1	8.0 8.0	8.0	16.7 16.8	16.7	89.6 84.8	87.2	6.3 5.9	6.1	6.1	10.5 10.5	10.5	10.5	4.8 4.2	4.5	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	29.2 29.1	29.1	7.9 7.9	7.9	19.7 20.0	19.9	87.5 88.6	88.1	6.0 6.1	6.1	6.1	10.9 10.1	10.5		5.5 5.5	5.5	

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-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*
22-Aug-14	Sunny	Moderate	17:49	3.9	Surface	1.0	29.2 29.2	29.2	8.1 8.1	8.1	16.7 16.7	16.7	87.9 89.2	88.6	6.1 6.2	6.2	6.2	12.7 13.3	13.0	13.2	14.0 14.4	14.2	14.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	29.1 29.0	29.0	8.1 8.0	8.0	17.4 17.5	17.4	88.5 88.1	88.3	6.2 6.2	6.2	6.2	13.2 13.3	13.3		13.9 14.4	14.2	
25-Aug-14	Sunny	Moderate	19:13	3.6	Surface	1.0	29.4 29.6	29.5	8.2 8.2	8.2	20.2 20.1	20.2	113.6 107.8	110.7	7.8 7.4	7.6	7.6	7.3 6.9	7.1	8.1	11.3 10.6	11.0	11.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.0 28.4	28.7	8.1 8.1	8.1	22.2 22.4	22.3	116.1 114.6	115.4	7.9 7.9	7.9	7.9	9.2 8.9	9.1		12.0 11.4	11.7	
27-Aug-14	Sunny	Moderate	07:01	4.1	Surface	1.0	28.1 28.1	28.1	7.9 7.9	7.9	21.3 21.0	21.2	72.0 74.9	73.5	5.0 5.2	5.1	5.1	7.7 7.4	7.6	7.6	6.7 6.1	6.4	7.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.0 28.1	28.0	7.9 7.9	7.9	21.9 21.7	21.8	79.2 73.2	76.2	5.5 5.1	5.3	5.3	7.8 7.4	7.6		8.6 7.9	8.3	
29-Aug-14	Sunny	Moderate	08:50	4.2	Surface	1.0	27.9 27.9	27.9	7.8 7.8	7.8	22.4 22.5	22.5	72.9 73.6	73.3	5.0 5.1	5.1	5.1	10.2 10.1	10.2	10.2	5.2 5.0	5.1	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	27.8 27.9	27.8	7.8 7.8	7.8	23.0 22.7	22.8	75.7 73.3	74.5	5.2 5.1	5.2	5.2	10.2 10.2	10.2		5.4 5.4	5.4	

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 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*
1-Aug-14	Sunny	Moderate	15:34	11.1	Surface	1.0	30.4 30.3	30.3	8.3 8.3	8.3	18.7 18.8	18.7	78.5 81.8	80.2	5.3 5.6	5.4	5.3	2.4 2.5	2.5	2.6	2.1 2.4	2.3	2.9
					Middle	5.6	28.4 28.2	28.3	8.3 8.2	8.2	25.2 25.1	25.2	76.1 75.6	75.9	5.2 5.1	5.1		2.4 2.5	2.5		3.2 3.1	3.2	
					Bottom	10.1	28.1 27.9	28.0	8.2 8.2	8.2	25.7 25.9	25.8	71.7 72.0	71.9	4.9 4.9	4.9	4.9	2.8 2.6	2.7		3.2 3.0	3.1	
4-Aug-14	Sunny	Moderate	18:23	9.8	Surface	1.0	30.2 30.2	30.2	8.6 8.5	8.6	16.8 17.0	16.9	103.2 104.6	103.9	7.1 7.2	7.1	6.2	2.6 2.7	2.7	2.7	1.9 2.6	2.3	2.7
					Middle	4.9	28.1 28.2	28.1	8.6 8.5	8.5	26.2 25.9	26.1	75.6 74.6	75.1	5.2 5.1	5.2		2.8 2.6	2.7		2.7 2.5	2.6	
					Bottom	8.8	26.0 26.5	26.3	8.5 8.4	8.5	30.0 29.5	29.7	74.1 70.2	72.2	5.1 4.7	4.9	4.9	2.6 2.8	2.7		3.4 3.1	3.3	
6-Aug-14	Sunny	Moderate	09:06	10.7	Surface	1.0	29.0 29.0	29.0	8.0 8.1	8.1	20.2 20.0	20.1	91.7 93.9	92.8	6.3 6.5	6.4	5.8	2.4 2.5	2.5	4.0	3.0 2.8	2.9	3.6
					Middle	5.4	26.7 26.8	26.7	7.8 7.8	7.8	27.9 27.3	27.6	73.8 73.2	73.5	5.2 5.1	5.1		4.9 4.7	4.8		3.8 3.7	3.8	
					Bottom	9.7	26.4 26.6	26.5	7.8 7.8	7.8	29.0 29.1	29.0	71.4 71.8	71.6	4.9 4.9	4.9	4.9	4.7 4.8	4.8		4.1 4.3	4.2	
8-Aug-14	Sunny	Moderate	11:01	10.9	Surface	1.0	29.1 29.2	29.2	7.8 8.2	8.0	18.5 18.0	18.2	83.8 84.2	84.0	5.8 5.8	5.8	5.6	4.0 4.3	4.2	5.3	- -	-	3.4
					Middle	5.5	27.9 28.1	28.0	8.0 8.1	8.1	23.2 23.3	23.3	79.3 79.1	79.2	5.4 5.4	5.4		5.9 5.5	5.7		2.4 2.3	2.4	
					Bottom	9.9	27.4 26.9	27.1	8.0 8.1	8.0	25.4 27.6	26.5	73.0 71.3	72.2	5.0 4.9	5.0	5.0	5.9 6.1	6.0		4.2 4.6	4.4	
11-Aug-14	Sunny	Moderate	13:05	11.4	Surface	1.0	28.6 28.8	28.7	8.2 8.2	8.2	22.9 22.7	22.8	82.3 82.6	82.5	5.6 5.6	5.6	5.5	9.3 8.7	9.0	13.2	5.6 5.9	5.8	6.5
					Middle	5.7	28.0 27.8	27.9	8.2 8.2	8.2	25.0 25.0	25.0	78.7 77.9	78.3	5.4 5.3	5.3		15.2 14.9	15.1		6.5 6.2	6.4	
					Bottom	10.4	28.0 27.3	27.7	8.2 8.2	8.2	26.0 26.7	26.4	71.8 71.6	71.7	4.9 4.9	4.9	4.9	15.8 15.4	15.6		7.1 7.2	7.2	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	15:56	10.2	Surface	1.0	29.2 29.1	29.2	7.8 7.8	7.8	21.4 21.4	21.4	79.8 75.6	77.7	5.6 5.3	5.5	5.4	7.5 7.7	7.6	9.5	8.3 8.1	8.2	9.7
					Middle	5.1	28.6 28.5	28.6	7.8 7.8	7.8	22.0 22.1	22.1	70.5 75.4	73.0	5.1 5.3	5.2		10.2 10.4	10.3		9.2 9.9	9.6	
					Bottom	9.2	27.2 27.5	27.4	7.8 7.8	7.8	26.2 25.8	26.0	69.8 69.8	69.8	5.0 5.0	5.0	5.0	10.5 10.7	10.6		10.9 11.9	11.4	
18-Aug-14	Sunny	Moderate	07:20	10.8	Surface	1.0	29.3 29.3	29.3	7.8 7.8	7.8	16.7 16.9	16.8	83.5 84.4	84.0	5.8 5.9	5.9	5.6	3.6 3.7	3.7	4.9	1.2 1.3	1.3	2.7
					Middle	5.4	29.0 28.9	28.9	7.7 7.8	7.7	19.6 19.7	19.7	74.6 75.1	74.9	5.2 5.2	5.2		5.3 4.9	5.1		2.8 2.5	2.7	
					Bottom	9.8	27.4 27.5	27.5	7.6 7.7	7.7	24.4 24.4	24.4	70.7 70.4	70.6	4.9 4.9	4.9	4.9	5.9 6.0	6.0		4.2 3.8	4.0	
20-Aug-14	Rainy	Moderate	09:49	10.4	Surface	1.0	28.7 28.9	28.8	8.1 8.1	8.1	15.3 15.3	15.3	85.0 86.7	85.9	6.0 6.1	6.1	5.7	5.7 6.0	5.9	5.9	3.8 3.8	3.8	4.3
					Middle	5.2	28.0 27.3	27.7	7.9 7.9	7.9	23.7 23.6	23.6	73.1 73.7	73.4	5.2 5.2	5.2		5.8 5.8	5.8		4.5 5.0	4.8	
					Bottom	9.4	25.6 25.4	25.5	7.9 7.9	7.9	30.1 30.6	30.4	72.7 72.3	72.5	5.2 5.1	5.1	5.1	5.9 5.9	5.9		4.5 4.2	4.4	

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 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*
22-Aug-14	Sunny	Moderate	11:24	10.4	Surface	1.0	28.5 28.4	28.4	7.9 7.9	7.9	17.2 17.6	17.4	73.2 72.6	72.9	5.2 5.1	5.1	5.1	8.5 8.1	8.3	8.5	3.6 3.3	3.5	3.7
					Middle	5.2	27.2 26.7	27.0	7.9 7.9	7.9	23.9 23.7	23.8	71.1 72.5	71.8	5.1 5.1	5.1		8.4 8.5	8.5		4.2 3.8	4.0	
					Bottom	9.4	26.3 26.0	26.1	7.9 7.8	7.8	28.0 28.3	28.2	70.3 70.2	70.3	5.0 5.0	5.0	5.0	8.8 8.6	8.7		3.6 3.7	3.7	
25-Aug-14	Sunny	Moderate	13:05	10.8	Surface	1.0	29.0 29.1	29.1	8.0 8.1	8.0	20.1 20.2	20.1	80.1 90.2	85.2	5.5 6.2	5.9	5.6	3.7 4.1	3.9	3.6	3.5 3.1	3.3	3.9
					Middle	5.4	27.3 27.4	27.4	7.9 7.9	7.9	23.3 23.3	23.3	74.1 79.2	76.7	5.1 5.5	5.3		3.4 3.7	3.6		4.1 3.6	3.9	
					Bottom	9.8	27.2 27.3	27.2	7.9 7.9	7.9	24.5 24.6	24.6	71.7 75.0	73.4	5.0 5.2	5.1	5.1	3.3 3.2	3.3		4.3 4.7	4.5	
27-Aug-14	Sunny	Moderate	13:46	10.0	Surface	1.0	28.1 28.1	28.1	8.1 8.1	8.1	22.6 22.6	22.6	83.3 83.0	83.2	5.7 5.7	5.7	5.5	7.5 7.5	7.5	7.6	4.9 4.2	4.6	6.7
					Middle	5.0	27.8 27.8	27.8	8.1 8.0	8.0	23.3 23.3	23.3	78.4 76.4	77.4	5.4 5.3	5.3		7.4 7.8	7.6		6.8 5.9	6.4	
					Bottom	9.0	27.9 27.4	27.6	8.1 8.0	8.0	23.3 24.0	23.7	81.3 76.7	79.0	5.6 5.3	5.5	5.5	7.9 7.5	7.7		9.4 9.0	9.2	
29-Aug-14	Sunny	Moderate	14:49	9.6	Surface	1.0	28.4 28.8	28.6	7.9 8.0	8.0	24.5 24.2	24.4	76.4 78.2	77.3	5.2 5.3	5.2	5.1	8.4 8.6	8.5	8.6	2.9 3.3	3.1	4.1
					Middle	4.8	27.2 27.2	27.2	7.9 7.9	7.9	26.7 26.3	26.5	72.5 73.1	72.8	5.0 5.1	5.0		8.5 8.5	8.5		4.6 4.7	4.7	
					Bottom	8.6	26.8 26.8	26.8	7.9 7.9	7.9	28.1 28.2	28.2	71.5 72.2	71.9	4.9 4.9	4.9	4.9	8.7 8.6	8.7		4.7 4.1	4.4	

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 IS17 - 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*
1-Aug-14	Sunny	Moderate	09:07	11.2	Surface	1.0	29.5 29.5	29.5	8.1 8.1	8.1	20.2 20.2	20.2	81.7 83.9	82.8	5.6 5.7	5.7	5.4	3.3 3.1	3.2	3.6	4.0 4.5	4.3	4.6
					Middle	5.6	28.6 28.6	28.6	8.0 8.0	8.0	23.3 23.1	23.2	74.8 73.7	74.3	5.1 5.0	5.1		4.0 3.8	3.9		3.8 4.7	4.3	
					Bottom	10.2	28.5 28.3	28.4	8.0 8.0	8.0	23.5 23.8	23.6	76.4 79.2	77.8	5.2 5.4	5.3	5.3	3.7 3.9	3.8		5.5 4.9	5.2	
4-Aug-14	Sunny	Moderate	12:40	10.5	Surface	1.0	30.2 29.6	29.9	7.9 7.9	7.9	18.9 19.7	19.3	88.6 89.4	89.0	6.0 6.1	6.1	5.7	2.0 2.1	2.1	3.1	3.7 4.0	3.9	4.8
					Middle	5.3	28.5 28.6	28.5	7.7 7.7	7.7	23.1 22.9	23.0	74.7 75.5	75.1	5.1 5.2	5.2		3.6 3.5	3.6		4.8 4.7	4.8	
					Bottom	9.5	26.9 26.8	26.9	7.7 7.6	7.7	27.6 28.4	28.0	72.7 71.1	71.9	5.0 4.9	4.9	4.9	3.5 3.5	3.5		5.5 5.9	5.7	
6-Aug-14	Sunny	Moderate	16:00	11.0	Surface	1.0	29.8 29.7	29.8	8.6 8.6	8.6	20.6 20.6	20.6	108.4 112.8	110.6	7.3 7.7	7.5	6.4	3.0 3.2	3.1	4.7	2.9 2.6	2.8	3.1
					Middle	5.5	27.3 27.0	27.2	8.6 8.6	8.6	26.4 26.5	26.5	74.5 75.6	75.1	5.2 5.3	5.3		5.3 5.4	5.4		2.8 2.4	2.6	
					Bottom	10.0	26.8 26.8	26.8	8.6 8.6	8.6	28.2 28.1	28.1	72.8 73.6	73.2	5.0 5.1	5.0	5.0	5.3 5.6	5.5		4.4 3.5	4.0	
8-Aug-14	Sunny	Moderate	17:51	11.0	Surface	1.0	29.5 29.5	29.5	8.2 8.2	8.2	19.7 19.7	19.7	102.0 99.6	100.8	7.0 6.8	6.9	6.3	4.3 4.5	4.4	5.6	3.4 3.1	3.3	3.3
					Middle	5.5	28.2 28.3	28.3	8.1 8.1	8.1	23.8 24.3	24.1	81.5 86.3	83.9	5.6 5.9	5.7		5.0 5.3	5.2		3.0 3.3	3.2	
					Bottom	10.0	27.8 27.9	27.9	8.0 8.1	8.1	24.8 24.9	24.9	80.3 84.0	82.2	5.5 5.7	5.6	5.6	7.3 7.1	7.2		3.5 3.5	3.5	
11-Aug-14	Sunny	Moderate	06:17	11.3	Surface	1.0	28.3 28.4	28.4	8.2 8.2	8.2	21.9 22.1	22.0	81.8 84.6	83.2	5.6 5.8	5.7	5.5	6.2 6.1	6.2	8.1	2.4 2.4	2.4	4.3
					Middle	5.7	27.1 27.2	27.2	8.2 8.2	8.2	26.7 26.3	26.5	75.9 78.0	77.0	5.2 5.4	5.3		9.3 8.7	9.0		4.2 4.1	4.2	
					Bottom	10.3	27.2 27.1	27.2	8.2 8.2	8.2	26.6 26.5	26.6	80.1 81.3	80.7	5.5 5.6	5.5	5.5	9.0 9.2	9.1		6.1 6.2	6.2	
13-Aug-14	Rainy	Moderate	08:16	11.1	Surface	1.0	28.1 27.8	27.9	7.9 7.9	7.9	23.1 23.5	23.3	90.2 93.1	91.7	6.2 6.3	6.3	5.9	10.2 11.0	10.6	12.4	3.4 3.1	3.3	3.3
					Middle	5.6	26.8 26.8	26.8	7.8 7.9	7.9	27.3 27.5	27.4	83.8 77.7	80.8	5.8 5.3	5.5		12.2 13.2	12.7		3.0 3.3	3.2	
					Bottom	10.1	26.8 26.7	26.8	7.7 7.9	7.8	26.9 27.6	27.3	85.4 79.0	82.2	5.9 5.4	5.7	5.7	13.4 14.1	13.8		3.5 3.5	3.5	
15-Aug-14	Sunny	Moderate	10:06	10.2	Surface	1.0	28.4 28.3	28.3	7.8 7.8	7.8	21.1 21.3	21.2	72.3 70.3	71.3	5.2 5.0	5.1	5.1	11.1 11.4	11.3	11.4	4.4 4.1	4.3	5.5
					Middle	5.1	28.1 28.1	28.1	7.8 7.8	7.8	21.7 21.8	21.8	72.0 70.4	71.2	5.2 5.1	5.1		11.2 11.4	11.3		5.9 5.8	5.9	
					Bottom	9.2	27.7 27.4	27.5	7.8 7.8	7.8	24.4 24.6	24.5	69.3 67.7	68.5	4.9 4.8	4.9	4.9	11.6 11.5	11.6		6.1 6.3	6.2	
18-Aug-14	Sunny	Moderate	13:24	10.5	Surface	1.0	29.8 29.7	29.7	8.1 8.0	8.0	17.2 17.3	17.3	95.6 91.1	93.4	6.6 6.3	6.4	5.8	3.6 3.7	3.7	4.6	1.2 1.4	1.3	1.4
					Middle	5.3	28.7 28.8	28.7	7.9 7.9	7.9	20.3 20.2	20.3	74.6 76.7	75.7	5.2 5.3	5.2		4.6 4.4	4.5		1.5 1.5	1.5	
					Bottom	9.5	28.4 28.5	28.4	7.9 7.9	7.9	21.8 22.1	22.0	79.6 75.8	77.7	5.5 5.2	5.3	5.3	5.3 5.6	5.5		1.3 1.5	1.4	
20-Aug-14	Rainy	Moderate	16:53	10.1	Surface	1.0	28.8 28.8	28.8	8.1 8.1	8.1	16.2 16.2	16.2	83.1 82.2	82.7	5.9 5.8	5.8	5.5	4.2 4.4	4.3	5.1	3.7 3.2	3.5	4.0
					Middle	5.1	27.7 27.6	27.6	7.9 7.9	7.9	22.5 22.9	22.7	74.8 75.5	75.2	5.0 5.1	5.1		5.2 5.5	5.4		4.3 4.5	4.4	
					Bottom	9.1	27.2 27.7	27.4	7.9 7.9	7.9	25.5 25.4	25.5	70.2 77.1	73.7	4.8 5.3	5.1	5.1	5.5 5.4	5.5		4.3 3.9	4.1	

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-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*
22-Aug-14	Sunny	Moderate	18:04	10.2	Surface	1.0	29.3 29.3	29.3	8.1 8.0	8.1	15.4 15.3	15.4	83.1 82.4	82.8	5.8 5.8	5.8	5.5	5.3 5.3	5.3	8.0	2.1 2.9	2.5	2.9
					Middle	5.1	27.6 28.0	27.8	8.0 8.0	8.0	20.7 20.8	20.8	72.1 71.8	72.0	5.1 5.1	5.1		8.9 8.9	8.9		3.1 3.0	3.1	
					Bottom	9.2	26.1 27.1	26.6	8.0 7.9	8.0	28.4 25.0	26.7	69.4 70.1	69.8	4.8 4.8	4.8	4.8	9.7 9.6	9.7		3.1 3.2	3.2	
25-Aug-14	Sunny	Moderate	19:29	11.1	Surface	1.0	29.6 29.5	29.5	8.3 8.3	8.3	19.6 18.6	19.1	109.9 106.5	108.2	7.5 7.3	7.4	6.9	7.6 7.7	7.7	9.3	3.3 3.9	3.6	4.1
					Middle	5.6	28.8 28.5	28.6	8.2 8.1	8.2	21.0 21.8	21.4	95.7 89.1	92.4	6.6 6.1	6.4		10.1 10.4	10.3		3.6 4.3	4.0	
					Bottom	10.1	28.5 28.2	28.4	8.1 8.1	8.1	21.8 22.4	22.1	95.1 87.7	91.4	6.5 6.0	6.3	6.3	9.6 10.2	9.9		5.2 4.2	4.7	
27-Aug-14	Sunny	Moderate	06:47	10.4	Surface	1.0	27.9 27.9	27.9	7.9 7.9	7.9	22.3 22.1	22.2	74.5 74.7	74.6	5.2 5.2	5.2	5.2	7.3 7.3	7.3	7.6	2.5 2.1	2.3	3.0
					Middle	5.2	27.4 27.5	27.4	8.0 8.0	8.0	23.5 23.5	23.5	74.0 73.9	74.0	5.1 5.1	5.1		7.7 7.5	7.6		3.3 3.2	3.3	
					Bottom	9.4	27.2 26.9	27.1	7.9 8.0	8.0	25.9 26.1	26.0	73.5 71.6	72.6	5.1 5.0	5.0	5.0	7.9 7.6	7.8		3.6 3.3	3.5	
29-Aug-14	Sunny	Moderate	08:36	10.3	Surface	1.0	27.7 27.5	27.6	7.8 7.8	7.8	23.4 23.5	23.4	86.3 79.6	83.0	6.0 5.6	5.8	5.8	9.4 9.4	9.4	9.6	5.2 4.4	4.8	5.2
					Middle	5.2	27.4 27.1	27.2	7.8 7.8	7.8	24.1 25.0	24.6	82.4 78.3	80.4	5.8 5.5	5.7		9.5 9.5	9.5		5.6 4.5	5.1	
					Bottom	9.3	27.1 27.3	27.2	7.8 7.8	7.8	25.9 25.7	25.8	79.8 81.8	80.8	5.6 5.8	5.7	5.7	9.7 9.8	9.8		6.5 5.0	5.8	

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 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*
1-Aug-14	Sunny	Moderate	14:24	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-		-	-	
					Middle	0.8	30.8 30.8	30.8	8.0 8.0	8.0	18.3 18.6	18.4	105.0 108.9	107.0	7.1 7.3	7.2		5.1 4.8	5.0	5.0	7.0 5.9	6.5	6.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
4-Aug-14	Sunny	Moderate	17:20	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	10.7	-	-		-	-	
					Middle	0.7	31.1 31.1	31.1	8.4 8.4	8.4	18.3 18.4	18.3	155.3 162.4	158.9	10.4 10.9	10.7		2.8 2.9	2.9	2.9	6.1 7.1	6.6	6.6
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
6-Aug-14	Sunny	Moderate	10:08	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-		-	-	
					Middle	0.7	29.2 29.5	29.3	8.5 8.5	8.5	18.2 18.4	18.3	87.6 90.7	89.2	6.1 6.3	6.2		3.3 3.2	3.3	3.3	4.3 4.9	4.6	4.6
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
8-Aug-14	Sunny	Moderate	12:14	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-		-	-	
					Middle	0.8	29.8 29.8	29.8	8.1 8.1	8.1	19.1 19.1	19.1	98.5 98.0	98.3	6.7 6.7	6.7		5.7 5.7	5.7	5.7	4.6 4.6	4.6	4.6
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
11-Aug-14	Sunny	Moderate	11:44	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	5.5	-	-		-	-	
					Middle	0.9	28.9 28.9	28.9	8.2 8.2	8.2	23.2 23.3	23.2	83.6 79.4	81.5	5.7 5.4	5.5		14.5 14.7	14.6	14.6	15.5 16.1	15.8	15.8
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
13-Aug-14***	-	-	-	-	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
					Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
15-Aug-14	Sunny	Moderate	14:30	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-		-	-	
					Middle	0.7	28.8 28.8	28.8	7.7 7.7	7.7	22.6 22.6	22.6	86.4 83.5	85.0	6.0 5.8	5.9		14.8 14.9	14.9	14.9	15.9 15.8	15.9	15.9
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
18-Aug-14	Sunny	Moderate	08:42	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-		-	-	
					Middle	0.8	29.5 29.5	29.5	8.0 8.0	8.0	18.2 18.2	18.2	91.6 92.1	91.9	6.3 6.4	6.3		5.7 5.4	5.6	5.6	3.1 3.9	3.5	3.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
20-Aug-14	Rainy	Moderate	10:51	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-		-	-	
					Middle	0.7	28.8 28.9	28.8	8.1 8.1	8.1	15.3 15.6	15.5	90.2 89.5	89.9	6.4 6.3	6.4		6.9 6.9	6.9	6.9	6.3 7.5	6.9	6.9
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Remarks:
* DA: Depth-Averaged
** Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher
*** 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*
22-Aug-14	Sunny	Moderate	12:23	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-		-	-	
					Middle	0.7	28.9 28.9	28.9	8.0 8.0	8.0	15.2 15.3	15.3	83.1 82.1	82.6	5.9 5.8	5.9		5.5 5.4	5.5	5.5	4.2 4.8	4.5	4.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
25-Aug-14	Sunny	Moderate	14:26	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-		-	-	
					Middle	0.8	29.0 29.0	29.0	8.1 8.2	8.1	21.0 21.0	21.0	91.1 91.8	91.5	6.2 6.3	6.3		7.8 8.2	8.0	8.0	6.2 5.1	5.7	5.7
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
27-Aug-14	Sunny	Moderate	12:47	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	5.5	-	-		-	-	
					Middle	0.7	28.1 28.1	28.1	8.1 8.0	8.1	23.2 23.2	23.2	79.2 80.2	79.7	5.4 5.5	5.5		11.5 11.5	11.5	11.5	10.3 11.0	10.7	10.7
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
29-Aug-14	Sunny	Moderate	13:51	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	5.3	-	-		-	-	
					Middle	0.6	28.1 28.1	28.1	7.8 7.8	7.8	24.7 24.7	24.7	78.3 78.5	78.4	5.3 5.3	5.3		19.7 19.3	19.5	19.5	8.5 9.2	8.9	8.9
					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*
1-Aug-14	Sunny	Moderate	10:16	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	8.1	-	-		-	-	
					Middle	0.8	30.0 30.0	30.0	8.2 8.2	8.2	20.4 20.4	20.4	120.6 120.0	120.3	8.2 8.1	8.1		3.1 2.8	3.0	3.0	5.8 5.2	5.5	5.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
4-Aug-14	Sunny	Moderate	13:50	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	11.3	-	-		-	-	
					Middle	0.9	31.0 31.0	31.0	8.4 8.4	8.4	19.5 19.6	19.5	169.9 168.3	169.1	11.4 11.2	11.3		2.9 2.9	2.9	2.9	4.2 4.1	4.2	4.2
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
6-Aug-14	Sunny	Moderate	15:01	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-		-	-	
					Middle	0.7	30.0 29.9	30.0	8.4 8.4	8.4	20.5 20.6	20.6	114.6 110.4	112.5	7.8 7.5	7.6		2.5 2.6	2.6	2.6	4.9 4.0	4.5	4.5
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
8-Aug-14	Sunny	Moderate	16:34	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	9.2	-	-		-	-	
					Middle	0.8	30.4 30.4	30.4	8.3 8.2	8.3	20.8 20.7	20.7	138.1 136.4	137.3	9.3 9.1	9.2		5.6 5.5	5.6	5.6	6.4 5.5	6.0	6.0
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
11-Aug-14	Sunny	Moderate	07:23	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	5.3	-	-		-	-	
					Middle	0.8	29.0 29.0	29.0	8.2 8.2	8.2	22.7 22.7	22.7	77.5 77.4	77.5	5.3 5.3	5.3		6.8 7.2	7.0	7.0	7.2 6.9	7.1	7.1
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
13-Aug-14	Rainy	Moderate	09:47	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	5.5	-	-		-	-	
					Middle	0.8	28.5 28.5	28.5	7.9 7.9	7.9	21.9 22.0	22.0	80.0 80.0	80.0	5.5 5.5	5.5		8.6 9.0	8.8	8.8	6.4 5.5	6.0	6.0
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
15-Aug-14	Sunny	Moderate	11:13	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	5.4	-	-		-	-	
					Middle	0.7	28.6 28.5	28.6	7.8 7.8	7.8	21.9 22.0	22.0	76.9 76.4	76.7	5.4 5.4	5.4		6.0 6.2	6.1	6.1	6.8 7.5	7.2	7.2
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
18-Aug-14	Sunny	Moderate	12:13	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-		-	-	
					Middle	0.9	30.0 29.9	29.9	7.9 7.9	7.9	19.8 19.9	19.8	101.3 100.6	101.0	6.9 6.8	6.9		5.8 6.0	5.9	5.9	3.3 3.1	3.2	3.2
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
20-Aug-14	Rainy	Moderate	15:51	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-		-	-	
					Middle	0.7	28.9 28.9	28.9	7.8 7.9	7.9	16.1 16.0	16.0	103.2 102.4	102.8	7.3 7.2	7.3		4.8 4.7	4.8	4.8	5.6 4.1	4.9	4.9
					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 (^{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*
22-Aug-14	Sunny	Moderate	17:01	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
					Middle	0.6	29.5	29.5	8.2	8.2	18.1	18.1	107.9	106.9	7.5	7.4		7.2	7.4	7.4	5.4	5.6	5.6
							29.4		8.1		18.0		105.9		7.3			7.6			5.7		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
25-Aug-14	Sunny	Moderate	18:02	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	8.6	-	-		-	-	
					Middle	0.8	30.1	30.0	8.1	8.1	19.9	20.0	130.1	126.8	8.8	8.6		7.0	7.1	7.1	3.9	4.4	4.4
							30.0		8.0		20.0		123.5		8.4			7.2			4.8		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
27-Aug-14	Sunny	Moderate	07:45	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-		-	-	
					Middle	0.6	28.5	28.5	8.1	8.1	21.6	21.6	93.6	92.2	6.5	6.4		11.2	11.3	11.3	8.6	8.4	8.4
							28.5		8.1		21.6		90.8		6.3			11.3			8.1		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
29-Aug-14	Sunny	Moderate	09:37	#VALUE!	Surface	-	-	-	-	-	-	-	-	-	-	-	5.4	-	-		-	-	
					Middle	0.6	28.1	28.1	8.0	8.0	23.3	23.3	78.6	78.7	5.4	5.4		12.8	12.7	12.7	9.4	9.8	9.8
							28.1		8.0		23.3		78.7		5.4			12.5			10.2		
					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 (^{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*
1-Aug-14	Sunny	Moderate	15:13	3.8	Surface	1.0	30.4 30.3	30.4	8.0 7.9	7.9	20.7 20.7	20.7	103.9 106.9	105.4	7.0 7.2	7.1	7.1	4.0 4.2	4.1	4.3	2.4 2.4	2.4	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	30.4 30.1	30.2	7.9 7.9	7.9	20.7 20.8	20.8	105.8 100.4	103.1	7.1 6.8	6.9	6.9	4.2 4.7	4.5		3.4 3.7	3.6	
4-Aug-14	Sunny	Moderate	18:01	3.7	Surface	1.0	30.5 30.2	30.3	8.5 8.5	8.5	19.4 20.6	20.0	128.7 125.9	127.3	8.7 8.5	8.6	8.6	5.4 5.3	5.4	5.4	4.2 3.7	4.0	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	30.2 29.8	30.0	8.5 8.5	8.5	20.6 21.1	20.9	129.6 123.4	126.5	8.7 8.3	8.5	8.5	5.2 5.3	5.3		3.5 3.9	3.7	
6-Aug-14	Sunny	Moderate	09:26	3.8	Surface	1.0	30.2 30.3	30.2	8.5 8.5	8.5	18.3 18.0	18.2	100.7 102.8	101.8	6.9 7.0	6.9	6.9	5.3 5.3	5.3	5.9	4.2 4.0	4.1	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	29.8 29.9	29.9	8.4 8.5	8.4	20.7 20.8	20.7	99.3 100.0	99.7	6.7 6.8	6.7	6.7	6.4 6.6	6.5		4.8 4.3	4.6	
8-Aug-14	Sunny	Moderate	11:24	3.6	Surface	1.0	30.0 29.9	30.0	8.1 8.1	8.1	18.8 18.9	18.9	94.8 96.0	95.4	6.5 6.6	6.5	6.5	6.2 5.8	6.0	6.1	2.3 1.9	2.1	2.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.8 29.8	29.8	8.1 8.1	8.1	19.1 19.2	19.2	94.6 96.7	95.7	6.5 6.6	6.5	6.5	6.3 5.8	6.1		1.7 2.5	2.1	
11-Aug-14	Sunny	Moderate	12:34	3.7	Surface	1.0	29.0 29.1	29.0	8.2 8.2	8.2	22.3 22.2	22.2	79.3 79.3	79.3	5.4 5.4	5.4	5.4	8.8 8.1	8.5	8.8	5.0 4.7	4.9	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.0 28.9	28.9	8.2 8.2	8.2	22.5 22.6	22.5	79.1 80.7	79.9	5.4 5.5	5.4	5.4	8.9 9.2	9.1		5.8 5.4	5.6	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	15:32	3.8	Surface	1.0	28.9 28.9	28.9	7.8 7.7	7.7	21.1 21.2	21.2	80.9 80.0	80.5	5.7 5.6	5.7	5.7	6.5 6.7	6.6	6.7	6.9 6.4	6.7	7.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.5 28.7	28.6	7.7 7.7	7.7	21.9 21.7	21.8	81.9 80.2	81.1	5.8 5.7	5.7	5.7	6.7 6.6	6.7		7.1 7.6	7.4	
18-Aug-14	Sunny	Moderate	07:42	3.6	Surface	1.0	29.5 29.6	29.5	7.9 7.9	7.9	19.1 18.9	19.0	77.1 76.5	76.8	5.3 5.3	5.3	5.3	4.9 5.2	5.1	6.3	1.9 2.0	2.0	2.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.4 29.3	29.3	7.8 7.8	7.8	20.0 20.3	20.1	75.3 76.0	75.7	5.2 5.2	5.2	5.2	7.7 7.3	7.5		2.1 3.2	2.7	
20-Aug-14	Rainy	Moderate	10:09	3.6	Surface	1.0	29.0 28.9	28.9	8.1 8.1	8.1	15.0 15.0	15.0	81.8 93.6	87.7	5.8 6.6	6.2	6.2	4.7 4.8	4.8	5.3	3.4 3.3	3.4	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.2 29.4	29.3	8.0 7.9	8.0	18.1 19.0	18.5	88.9 81.2	85.1	6.2 5.8	6.0	6.0	5.8 5.7	5.8		4.3 5.1	4.7	

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 SR4(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*
22-Aug-14	Sunny	Moderate	11:44	3.8	Surface	1.0	28.8 28.9	28.9	7.9 7.9	7.9	15.7 16.2	16.0	74.4 77.1	75.8	5.3 5.4	5.4	5.4	5.5 5.4	5.5	5.6	2.3 2.2	2.3	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.7 28.8	28.8	7.8 7.9	7.9	19.3 19.2	19.3	77.2 76.1	76.7	5.4 5.3	5.3	5.3	5.6 5.5	5.6		3.5 2.8	3.2	
25-Aug-14	Sunny	Moderate	13:31	3.8	Surface	1.0	29.0 28.7	28.9	8.1 8.1	8.1	20.1 20.3	20.2	93.1 91.9	92.5	6.4 6.4	6.4	6.4	6.0 5.4	5.7	8.1	3.6 3.6	3.6	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.5 28.9	28.7	8.1 8.1	8.1	21.4 21.4	21.4	96.5 94.4	95.5	6.7 6.5	6.6	6.6	10.7 10.1	10.4		6.4 6.8	6.6	
27-Aug-14	Sunny	Moderate	13:26	3.8	Surface	1.0	28.4 28.4	28.4	8.1 8.1	8.1	21.7 21.8	21.8	92.9 88.2	90.6	6.4 6.1	6.2	6.2	4.6 4.6	4.6	4.6	7.7 7.8	7.8	8.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.4 28.2	28.3	8.0 8.1	8.0	21.8 22.4	22.1	94.9 87.3	91.1	6.5 6.0	6.3	6.3	4.5 4.6	4.6		7.8 8.5	8.2	
29-Aug-14	Sunny	Moderate	14:28	3.7	Surface	1.0	29.7 29.6	29.6	7.9 7.9	7.9	22.5 22.5	22.5	82.9 80.8	81.9	5.6 5.4	5.5	5.5	5.7 5.8	5.8	5.7	3.4 2.7	3.1	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.3 28.2	28.2	7.9 7.8	7.9	24.5 24.6	24.6	82.0 78.3	80.2	5.6 5.3	5.5	5.5	5.6 5.6	5.6		2.8 2.5	2.7	

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 SR4(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*
1-Aug-14	Sunny	Moderate	09:30	3.7	Surface	1.0	29.8 29.8	29.8	7.9 7.9	7.9	19.5 19.5	19.5	96.7 95.6	96.2	6.6 6.5	6.6	6.6	4.3 4.2	4.3	4.5	3.1 3.4	3.3	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.8 29.8	29.8	7.9 8.0	7.9	19.6 19.7	19.7	95.9 97.8	96.9	6.5 6.7	6.6	6.6	4.5 4.7	4.6		4.2 3.7	4.0	
4-Aug-14	Sunny	Moderate	13:12	3.7	Surface	1.0	30.3 30.4	30.3	8.0 8.0	8.0	18.9 19.0	18.9	125.2 130.1	127.7	8.5 8.8	8.7	8.7	4.5 4.4	4.5	4.5	4.4 4.2	4.3	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	30.3 30.2	30.2	8.0 8.0	8.0	19.0 20.0	19.5	128.0 125.5	126.8	8.7 8.5	8.6	8.6	4.5 4.5	4.5		5.3 6.2	5.8	
6-Aug-14	Sunny	Moderate	15:38	3.7	Surface	1.0	29.9 29.8	29.8	8.5 8.6	8.6	20.0 20.0	20.0	117.3 107.2	112.3	8.0 7.3	7.6	7.6	7.1 7.5	7.3	7.4	7.6 7.3	7.5	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.9 29.5	29.7	8.6 8.4	8.5	19.9 21.4	20.6	113.5 109.2	111.4	7.7 7.4	7.6	7.6	7.3 7.4	7.4		8.7 8.7	8.7	
8-Aug-14	Sunny	Moderate	17:28	3.5	Surface	1.0	30.0 30.0	30.0	8.2 8.0	8.1	19.3 19.4	19.4	107.8 107.8	107.8	7.3 7.3	7.3	7.3	14.8 14.2	14.5	15.1	17.1 16.3	16.7	16.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	30.0 30.0	30.0	8.1 8.1	8.1	19.4 19.4	19.4	106.9 107.8	107.4	7.3 7.3	7.3	7.3	15.7 15.5	15.6		16.4 17.4	16.9	
11-Aug-14	Sunny	Moderate	06:40	3.7	Surface	1.0	28.8 28.8	28.8	8.2 8.2	8.2	21.4 21.5	21.4	78.0 78.5	78.3	5.4 5.4	5.4	5.4	9.2 9.5	9.4	9.7	6.3 6.2	6.3	6.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.7 28.7	28.7	8.2 8.1	8.1	21.6 21.7	21.6	78.4 77.4	77.9	5.4 5.3	5.3	5.3	9.8 10.1	10.0		7.1 6.9	7.0	
13-Aug-14	Rainy	Moderate	08:47	3.7	Surface	1.0	28.5 28.5	28.5	7.8 7.8	7.8	21.5 21.5	21.5	82.8 82.9	82.9	5.7 5.7	5.7	5.7	14.2 15.0	14.6	14.3	17.1 16.3	16.7	16.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.5 28.5	28.5	7.8 7.8	7.8	21.5 21.6	21.6	82.9 82.8	82.9	5.7 5.7	5.7	5.7	14.4 13.6	14.0		16.4 17.4	16.9	
15-Aug-14	Sunny	Moderate	10:32	3.7	Surface	1.0	28.7 28.6	28.6	7.8 7.8	7.8	20.1 20.1	20.1	80.0 77.1	78.6	5.7 5.5	5.6	5.6	12.9 12.5	12.7	12.7	12.7 13.0	12.9	14.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.6 28.6	28.6	7.8 7.8	7.8	20.1 20.1	20.1	84.8 78.8	81.8	6.0 5.6	5.8	5.8	12.8 12.6	12.7		15.2 15.8	15.5	
18-Aug-14	Sunny	Moderate	13:01	3.4	Surface	1.0	29.9 30.0	30.0	8.0 8.0	8.0	17.7 17.8	17.7	103.1 103.0	103.1	7.1 7.1	7.1	7.1	7.0 6.5	6.8	7.4	0.8 0.6	0.7	1.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	29.9 30.1	30.0	8.0 8.0	8.0	18.3 18.6	18.4	103.0 101.3	102.2	7.1 6.9	7.0	7.0	7.8 8.0	7.9		1.6 1.8	1.7	
20-Aug-14	Rainy	Moderate	16:32	3.6	Surface	1.0	28.2 27.7	28.0	7.9 7.9	7.9	13.0 12.3	12.6	87.2 88.9	88.1	6.3 6.6	6.5	6.5	10.8 10.7	10.8	10.8	4.8 5.7	5.3	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.0 29.1	29.0	7.8 7.6	7.7	17.5 17.9	17.7	89.7 94.2	92.0	6.3 6.6	6.4	6.4	10.9 10.5	10.7		5.4 5.1	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 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*
22-Aug-14	Sunny	Moderate	17:41	3.6	Surface	1.0	29.2 29.3	29.3	8.1 8.1	8.1	16.6 16.6	16.6	90.2 91.6	90.9	6.3 6.4	6.4	6.4	12.4 12.5	12.5	12.7	11.3 12.3	11.8	12.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	29.2 29.1	29.2	8.1 8.0	8.1	17.0 17.5	17.3	90.7 91.3	91.0	6.3 6.4	6.3	6.3	12.6 12.9	12.8		12.7 12.5	12.6	
25-Aug-14	Sunny	Moderate	19:05	3.3	Surface	1.0	29.3 29.6	29.5	8.0 8.1	8.1	20.2 20.1	20.2	101.9 112.2	107.1	7.0 7.7	7.3	7.3	7.3 8.0	7.7	8.2	10.1 10.5	10.3	10.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	29.4 28.8	29.1	8.0 7.9	8.0	21.0 21.8	21.4	108.4 100.0	104.2	7.4 6.8	7.1	7.1	8.9 8.5	8.7		11.4 11.5	11.5	
27-Aug-14	Sunny	Moderate	07:07	3.7	Surface	1.0	28.1 28.2	28.2	8.0 7.9	7.9	21.2 20.9	21.1	73.5 74.3	73.9	5.1 5.1	5.1	5.1	5.6 5.9	5.8	5.8	2.9 3.2	3.1	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	28.1 28.0	28.1	7.9 7.9	7.9	21.5 21.7	21.6	70.9 70.3	70.6	4.9 4.9	4.9	4.9	5.7 5.7	5.7		3.7 4.5	4.1	
29-Aug-14	Sunny	Moderate	09:00	3.6	Surface	1.0	27.9 27.9	27.9	7.9 7.9	7.9	22.5 22.5	22.5	71.9 72.0	72.0	5.0 5.0	5.0	5.0	9.6 9.5	9.6	9.8	4.7 5.1	4.9	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	27.9 27.8	27.9	7.9 7.9	7.9	22.7 22.8	22.7	71.9 71.7	71.8	5.0 5.0	5.0	5.0	9.9 9.8	9.9		5.0 5.3	5.2	

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 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*
1-Aug-14	Sunny	Moderate	15:37	4.8	Surface	1.0	29.8 30.1	29.9	8.2 8.2	8.2	16.5 15.3	15.9	96.1 97.6	96.9	6.7 6.8	6.7	6.7	2.2 2.2	2.2	2.2	2.2 2.1	2.2	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	29.6 29.7	29.6	8.2 8.2	8.2	18.3 18.3	18.3	95.8 96.4	96.1	6.6 6.6	6.6	6.6	2.1 2.1	2.1		3.3 3.8	3.6	
4-Aug-14	Sunny	Moderate	18:24	4.8	Surface	1.0	29.8 30.1	29.9	8.3 8.3	8.3	15.4 14.8	15.1	78.2 75.0	76.6	5.7 5.6	5.6	5.6	4.4 4.4	4.4	4.4	3.0 3.0	3.0	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	29.2 29.9	29.5	8.3 8.3	8.3	19.9 19.7	19.8	81.2 79.1	80.2	6.0 6.0	6.0	6.0	4.2 4.5	4.4		3.9 3.8	3.9	
6-Aug-14	Sunny	Moderate	09:15	4.8	Surface	1.0	28.9 28.9	28.9	8.2 8.2	8.2	20.2 20.3	20.3	85.5 85.0	85.3	5.9 5.9	5.9	5.9	1.6 1.5	1.6	1.6	4.8 4.7	4.8	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	28.2 28.3	28.3	8.2 8.2	8.2	23.5 23.6	23.6	80.3 79.8	80.1	5.5 5.5	5.5	5.5	1.5 1.4	1.5		5.0 4.9	5.0	
8-Aug-14	Sunny	Moderate	11:32	5.0	Surface	1.0	29.3 29.2	29.3	8.2 8.2	8.2	14.3 14.5	14.4	90.5 89.8	90.2	6.4 6.4	6.4	6.4	2.8 2.6	2.7	2.8	- -	-	1.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	29.0 28.7	28.9	8.2 8.2	8.2	18.0 18.4	18.2	90.3 91.4	90.9	6.3 6.4	6.3	6.3	2.7 2.8	2.8		1.8 1.9	1.9	
11-Aug-14	Sunny	Moderate	12:57	4.9	Surface	1.0	28.3 28.3	28.3	8.0 8.0	8.0	22.8 22.9	22.9	80.1 79.5	79.8	5.9 5.9	5.9	5.9	10.4 10.5	10.5	10.4	4.5 4.4	4.5	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	27.9 28.1	28.0	8.0 8.0	8.0	24.2 24.0	24.1	80.6 79.8	80.2	5.9 5.9	5.9	5.9	10.2 10.1	10.2		6.4 6.5	6.5	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	16:12	5.2	Surface	1.0	28.2 28.1	28.1	7.9 7.9	7.9	21.5 21.6	21.6	69.9 69.9	69.9	4.8 4.8	4.8	**4.8**	9.8 10.1	10.0	10.4	3.9 3.7	3.8	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	27.8 27.8	27.8	7.9 7.8	7.9	22.4 22.3	22.4	67.4 66.8	67.1	4.7 4.6	4.7	4.7	11.0 10.6	10.8		10.1 10.3	10.2	
18-Aug-14	Sunny	Moderate	07:26	4.9	Surface	1.0	29.1 29.1	29.1	8.1 8.1	8.1	14.6 14.6	14.6	90.6 89.5	90.1	6.4 6.3	6.4	6.4	2.0 2.1	2.1	2.1	1.4 1.6	1.5	1.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	29.0 29.1	29.0	8.0 8.0	8.0	16.7 16.8	16.7	88.4 90.9	89.7	6.2 6.4	6.3	6.3	2.2 2.0	2.1		2.2 2.4	2.3	
20-Aug-14	Rainy	Moderate	09:51	4.7	Surface	1.0	28.7 28.6	28.6	8.1 8.1	8.1	15.1 15.4	15.2	87.2 86.3	86.8	6.2 6.1	6.2	6.2	2.5 2.3	2.4	2.4	3.9 3.7	3.8	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	28.3 28.4	28.3	8.1 8.1	8.1	18.7 18.5	18.6	84.1 86.6	85.4	5.9 6.1	6.0	6.0	2.4 2.4	2.4		3.6 3.1	3.4	

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-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*
22-Aug-14	Sunny	Moderate	11:36	4.8	Surface	1.0	28.3 28.4	28.4	7.9 7.9	7.9	15.5 15.5	15.5	78.7 78.9	78.8	5.6 5.6	5.6	5.6	3.2 3.0	3.1	3.5	2.8 3.2	3.0	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	27.9 27.9	27.9	7.9 7.9	7.9	19.9 19.6	19.7	79.1 77.6	78.4	5.6 5.5	5.5	5.5	3.9 3.6	3.8		3.1 3.1	3.1	
25-Aug-14	Sunny	Moderate	13:20	5.2	Surface	1.0	28.9 28.9	28.9	8.1 8.1	8.1	16.3 16.6	16.4	74.5 73.6	74.1	5.2 5.2	5.2	5.2	3.3 3.3	3.3	3.3	1.9 1.7	1.8	1.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	28.5 28.0	28.3	8.0 8.0	8.0	19.3 19.2	19.3	73.9 70.9	72.4	5.2 5.0	5.1	5.1	3.1 3.3	3.2		1.8 2.0	1.9	
27-Aug-14	Sunny	Moderate	14:15	4.7	Surface	1.0	27.5 27.6	27.6	8.1 8.1	8.1	20.5 20.4	20.4	77.3 71.7	74.5	5.9 5.1	5.5	5.5	5.3 5.5	5.4	5.5	4.4 3.9	4.2	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	27.8 27.8	27.8	8.1 8.1	8.1	23.5 23.1	23.3	73.9 77.5	75.7	5.7 5.9	5.8	5.8	5.5 5.4	5.5		5.2 4.9	5.1	
29-Aug-14	Sunny	Moderate	14:43	4.7	Surface	1.0	27.7 27.4	27.5	8.1 8.1	8.1	22.1 23.7	22.9	84.5 82.1	83.3	5.9 5.7	5.8	5.8	8.6 8.9	8.8	9.1	5.4 5.5	5.5	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	27.4 27.5	27.5	8.1 8.1	8.1	23.8 23.7	23.8	85.5 83.4	84.5	5.9 5.8	5.8	5.8	9.5 9.3	9.4		6.2 6.6	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 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*
1-Aug-14	Sunny	Moderate	09:37	5.2	Surface	1.0	29.4 29.5	29.4	8.1 8.1	8.1	17.4 17.5	17.4	84.5 84.6	84.6	5.9 5.9	5.9	5.9	1.3 1.4	1.4	1.5	1.9 2.0	2.0	2.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	29.3 29.2	29.3	8.1 8.1	8.1	20.7 20.1	20.4	84.3 83.7	84.0	5.8 5.7	5.7	5.7	1.5 1.5	1.5		2.7 2.3	2.5	
4-Aug-14	Sunny	Moderate	12:58	4.9	Surface	1.0	30.1 30.0	30.1	8.3 8.3	8.3	13.6 14.0	13.8	78.5 74.2	76.4	5.6 5.5	5.5	5.5	4.4 4.2	4.3	4.4	2.6 2.4	2.5	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	28.8 28.6	28.7	8.2 8.2	8.2	22.1 22.4	22.3	75.6 73.5	74.6	5.5 5.3	5.4	5.4	4.4 4.5	4.5		3.1 3.7	3.4	
6-Aug-14	Sunny	Moderate	16:03	4.6	Surface	1.0	28.8 28.9	28.8	8.3 8.4	8.3	15.5 15.2	15.3	101.2 101.4	101.3	6.9 7.2	7.0	7.0	5.6 5.3	5.5	6.0	2.8 2.7	2.8	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	28.4 28.4	28.4	8.3 8.2	8.3	23.6 23.6	23.6	97.5 98.1	97.8	6.9 6.7	6.8	6.8	6.2 6.6	6.4		4.5 4.7	4.6	
8-Aug-14	Sunny	Moderate	17:52	4.8	Surface	1.0	29.3 29.2	29.2	8.2 8.2	8.2	18.1 17.9	18.0	91.2 93.8	92.5	6.3 6.5	6.4	6.4	4.4 4.2	4.3	4.3	2.8 2.7	2.8	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	28.9 28.9	28.9	8.2 8.2	8.2	20.2 20.8	20.5	91.5 93.8	92.7	6.3 6.4	6.4	6.4	4.0 4.4	4.2		3.0 3.3	3.2	
11-Aug-14	Sunny	Moderate	06:31	5.0	Surface	1.0	27.9 27.8	27.9	8.1 8.1	8.1	23.6 24.0	23.8	75.2 75.0	75.1	5.6 5.6	5.6	5.6	11.1 12.1	11.6	11.6	16.0 15.8	15.9	17.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	27.8 27.7	27.8	8.1 8.1	8.1	24.1 24.5	24.3	75.2 74.5	74.9	5.6 5.5	5.5	5.5	11.6 11.5	11.6		18.7 19.5	19.1	
13-Aug-14	Rainy	Moderate	08:21	5.0	Surface	1.0	27.9 27.9	27.9	8.0 8.0	8.0	23.7 23.7	23.7	79.1 78.9	79.0	5.4 5.4	5.4	5.4	18.8 18.6	18.7	18.8	6.2 6.5	6.4	7.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	27.9 27.9	27.9	8.0 8.0	8.0	23.8 23.8	23.8	78.7 78.8	78.8	5.4 5.4	5.4	5.4	18.8 19.0	18.9		9.4 9.3	9.4	
15-Aug-14	Sunny	Moderate	10:11	5.0	Surface	1.0	28.3 28.3	28.3	8.0 8.0	8.0	20.4 20.4	20.4	68.5 69.6	69.1	4.8 4.8	4.8	**4.8**	11.3 11.3	11.3	12.5	4.6 4.3	4.5	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	27.5 27.5	27.5	7.9 7.9	7.9	23.3 23.3	23.3	65.2 65.1	65.2	4.5 4.5	4.5	**4.5**	13.6 13.8	13.7		5.2 6.1	5.7	
18-Aug-14	Sunny	Moderate	13:26	5.1	Surface	1.0	29.7 29.6	29.7	8.1 8.1	8.1	14.2 14.1	14.2	97.2 97.0	97.1	6.8 6.8	6.8	6.8	3.1 3.2	3.2	3.3	2.5 2.7	2.6	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	29.2 29.1	29.2	8.0 8.0	8.0	17.0 17.0	17.0	96.3 95.3	95.8	6.7 6.7	6.7	6.7	3.4 3.3	3.4		2.9 2.6	2.8	
20-Aug-14	Rainy	Moderate	16:50	4.9	Surface	1.0	28.6 28.6	28.6	8.1 8.0	8.1	13.1 12.9	13.0	94.9 93.9	94.4	6.8 6.8	6.8	6.8	3.9 4.1	4.0	4.2	4.8 4.7	4.8	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	28.4 28.4	28.4	8.0 7.9	8.0	16.9 17.0	17.0	91.5 88.2	89.9	6.5 6.3	6.4	6.4	4.2 4.4	4.3		4.4 5.7	5.1	

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 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*
22-Aug-14	Sunny	Moderate	17:54	4.6	Surface	1.0	29.0 29.2	29.1	7.8 7.8	7.8	12.8 13.2	13.0	95.9 95.8	95.9	6.9 6.9	6.9	6.9	5.8 5.7	5.8	5.9	6.0 5.6	5.8	5.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	28.7 28.1	28.4	7.7 7.6	7.7	17.7 19.2	18.5	94.6 93.0	93.8	6.8 6.7	6.7	6.7	5.8 6.2	6.0		5.8 6.2	6.0	
25-Aug-14	Sunny	Moderate	19:17	5.1	Surface	1.0	29.1 29.4	29.2	8.1 8.1	8.1	16.7 16.3	16.5	80.7 84.0	82.4	5.7 5.9	5.8	5.8	2.9 2.8	2.9	3.0	3.1 3.3	3.2	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	29.1 28.8	28.9	8.1 8.2	8.1	17.9 17.9	17.9	82.8 87.9	85.4	5.8 6.2	6.0	6.0	3.0 3.2	3.1		3.8 4.2	4.0	
27-Aug-14	Sunny	Moderate	07:37	5.1	Surface	1.0	27.4 27.7	27.6	8.1 8.1	8.1	21.6 21.2	21.4	70.5 70.8	70.7	5.1 5.1	5.1	5.1	5.4 5.4	5.4	5.5	5.2 5.2	5.2	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	27.4 27.2	27.3	8.1 8.1	8.1	24.1 24.2	24.2	73.0 71.1	72.1	5.1 5.1	5.1	5.1	5.6 5.5	5.6		6.3 6.1	6.2	
29-Aug-14	Sunny	Moderate	08:53	4.9	Surface	1.0	27.2 27.1	27.1	8.1 8.1	8.1	24.4 24.4	24.4	76.0 75.7	75.9	5.3 5.3	5.3	5.3	14.2 13.9	14.1	14.7	5.9 5.7	5.8	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	27.1 27.1	27.1	8.1 8.1	8.1	24.8 24.8	24.8	75.6 75.7	75.7	5.2 5.3	5.2	5.2	15.1 15.2	15.2		6.8 5.8	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 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*
1-Aug-14	Sunny	Moderate	14:51	3.9	Surface	1.0	30.5 30.3	30.4	8.2 8.2	8.2	14.9 14.8	14.9	96.0 94.7	95.4	6.6 6.6	6.6	6.6	2.7 2.8	2.8	2.8	3.0 3.7	3.4	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	29.6 29.8	29.7	8.2 8.2	8.2	18.0 17.1	17.5	93.9 93.8	93.9	6.5 6.5	6.5	6.5	2.8 2.7	2.8		4.0 3.8	3.9	
4-Aug-14	Sunny	Moderate	17:46	3.9	Surface	1.0	30.1 29.8	29.9	8.3 8.3	8.3	15.0 15.2	15.1	74.8 72.6	73.7	5.5 5.3	5.4	5.4	5.8 5.7	5.8	5.7	3.2 2.9	3.1	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	29.9 29.7	29.8	8.3 8.3	8.3	17.6 17.8	17.7	72.0 74.2	73.1	5.2 5.3	5.3	5.3	5.6 5.4	5.5		3.5 3.5	3.5	
6-Aug-14	Sunny	Moderate	10:15	3.7	Surface	1.0	29.3 29.3	29.3	8.4 8.4	8.4	16.2 16.3	16.2	100.9 110.9	105.9	7.0 7.8	7.4	7.4	2.7 2.4	2.6	2.8	5.2 5.3	5.3	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.1 29.2	29.1	8.3 8.3	8.3	17.9 18.6	18.2	99.1 97.8	98.5	6.9 6.9	6.9	6.9	3.0 2.9	3.0		5.1 5.3	5.2	
8-Aug-14	Sunny	Moderate	12:15	4.1	Surface	1.0	29.3 29.5	29.4	8.2 8.2	8.2	16.8 16.9	16.8	83.6 84.7	84.2	5.8 5.9	5.9	5.9	2.0 2.2	2.1	2.1	1.5 1.6	1.6	1.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.7 28.7	28.7	8.2 8.1	8.2	18.5 19.0	18.8	82.8 83.1	83.0	5.8 5.8	5.8	5.8	2.1 2.1	2.1		2.3 2.1	2.2	
11-Aug-14	Sunny	Moderate	12:01	4.3	Surface	1.0	29.0 29.0	29.0	8.1 8.1	8.1	22.0 22.0	22.0	88.1 89.0	88.6	6.4 6.5	6.4	6.4	5.0 4.7	4.9	5.3	4.2 4.2	4.2	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.5 28.5	28.5	8.1 8.1	8.1	22.7 22.7	22.7	86.5 88.8	87.7	6.3 6.5	6.4	6.4	5.7 5.7	5.7		5.6 5.1	5.4	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	15:24	4.2	Surface	1.0	29.3 29.3	29.3	7.9 8.0	8.0	19.1 19.1	19.1	80.1 79.7	79.9	5.5 5.5	5.5	5.5	5.2 5.4	5.3	5.7	6.5 6.6	6.6	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	28.0 27.9	28.0	7.9 7.9	7.9	22.1 22.2	22.2	73.9 74.3	74.1	5.1 5.2	5.1	5.1	6.2 5.8	6.0		7.4 7.1	7.3	
18-Aug-14	Sunny	Moderate	08:21	4.1	Surface	1.0	29.1 29.1	29.1	8.0 8.0	8.0	13.9 13.8	13.9	83.1 84.9	84.0	5.9 6.0	6.0	6.0	3.1 3.2	3.2	3.2	2.6 2.4	2.5	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.8 28.6	28.7	8.0 8.0	8.0	14.7 14.8	14.7	80.4 77.7	79.1	5.7 5.5	5.6	5.6	3.1 3.2	3.2		2.7 2.5	2.6	
20-Aug-14	Rainy	Moderate	10:46	3.9	Surface	1.0	28.6 28.6	28.6	8.2 8.2	8.2	13.2 13.3	13.2	98.8 98.5	98.7	7.1 7.1	7.1	7.1	3.1 3.1	3.1	3.0	5.2 4.3	4.8	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.6 28.6	28.6	8.2 8.2	8.2	13.5 13.5	13.5	98.0 96.8	97.4	7.0 7.0	7.0	7.0	2.6 3.0	2.8		4.4 3.7	4.1	

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 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*
22-Aug-14	Sunny	Moderate	12:29	4.3	Surface	1.0	29.4 29.4	29.4	8.0 8.0	8.0	11.8 12.0	11.9	83.3 83.4	83.4	6.0 6.0	6.0	6.0	3.6 3.7	3.7	3.7	3.0 3.1	3.1	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	29.0 28.8	28.9	8.0 8.0	8.0	13.5 13.2	13.4	82.3 80.9	81.6	5.9 5.8	5.8	5.8	3.9 3.4	3.7		3.0 3.1	3.1	
25-Aug-14	Sunny	Moderate	14:21	4.2	Surface	1.0	29.6 29.6	29.6	8.1 8.1	8.1	16.5 16.5	16.5	79.8 81.0	80.4	5.6 5.6	5.6	5.6	2.4 2.6	2.5	2.6	2.5 2.8	2.7	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	29.5 29.2	29.3	8.1 8.1	8.1	16.6 16.7	16.7	74.6 79.8	77.2	5.2 5.6	5.4	5.4	2.7 2.7	2.7		3.0 2.9	3.0	
27-Aug-14	Sunny	Moderate	13:16	4.9	Surface	1.0	27.6 27.7	27.6	8.1 8.1	8.1	20.8 20.9	20.9	76.7 72.0	74.4	5.9 5.5	5.7	5.7	3.6 3.5	3.6	3.6	3.7 3.4	3.6	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	27.3 27.8	27.6	8.1 8.1	8.1	23.1 22.7	22.9	77.7 77.5	77.6	5.9 5.8	5.8	5.8	3.6 3.4	3.5		4.5 3.9	4.2	
29-Aug-14	Sunny	Moderate	13:51	4.3	Surface	1.0	28.6 28.7	28.7	8.1 8.1	8.1	21.2 21.1	21.1	79.2 82.7	81.0	5.5 5.7	5.6	5.6	7.6 7.4	7.5	9.0	5.5 4.1	4.8	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	27.2 27.1	27.2	8.1 8.1	8.1	24.5 24.5	24.5	80.5 78.0	79.3	5.6 5.4	5.5	5.5	10.5 10.4	10.5		4.7 5.1	4.9	

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 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*
1-Aug-14	Sunny	Moderate	10:39	4.3	Surface	1.0	29.7 29.7	29.7	8.1 8.1	8.1	15.1 15.3	15.2	84.6 85.0	84.8	5.9 5.9	5.9	5.9	1.5 1.4	1.5	1.5	2.0 2.3	2.2	2.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	29.6 29.5	29.6	8.0 8.1	8.1	18.2 17.8	18.0	84.6 83.9	84.3	5.8 5.8	5.8	5.8	1.5 1.5	1.5		2.3 2.7	2.5	
4-Aug-14	Sunny	Moderate	13:44	4.4	Surface	1.0	29.5 29.5	29.5	8.2 8.2	8.2	15.0 16.1	15.5	78.2 74.8	76.5	5.7 5.7	5.7	5.7	5.5 5.4	5.5	5.5	3.2 3.3	3.3	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	29.5 29.2	29.3	8.2 8.2	8.2	17.4 17.6	17.5	75.6 74.6	75.1	5.7 5.5	5.6	5.6	5.6 5.4	5.5		3.5 3.0	3.3	
6-Aug-14	Sunny	Moderate	15:04	3.7	Surface	1.0	29.1 28.9	29.0	8.3 8.3	8.3	15.0 15.1	15.0	99.9 98.1	99.0	7.1 6.9	7.0	7.0	4.2 4.2	4.2	5.0	4.5 4.2	4.4	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	29.1 28.4	28.8	8.3 8.2	8.3	16.9 18.4	17.7	90.0 87.6	88.8	6.4 6.2	6.3	6.3	5.5 5.8	5.7		5.6 5.0	5.3	
8-Aug-14	Sunny	Moderate	16:56	4.1	Surface	1.0	30.0 30.0	30.0	8.2 8.2	8.2	15.8 15.8	15.8	90.1 86.1	88.1	6.2 6.0	6.1	6.1	4.7 4.7	4.7	4.8	2.2 3.0	2.6	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	29.9 29.5	29.7	8.1 8.1	8.1	17.1 17.3	17.2	88.0 79.2	83.6	6.1 5.5	5.8	5.8	4.9 4.8	4.9		4.0 4.5	4.3	
11-Aug-14	Sunny	Moderate	07:26	4.2	Surface	1.0	28.0 28.0	28.0	8.1 8.1	8.1	23.5 23.5	23.5	77.1 77.1	77.1	5.7 5.7	5.7	5.7	16.6 16.4	16.5	16.7	15.9 15.3	15.6	17.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	27.9 28.0	27.9	8.1 8.1	8.1	23.7 23.7	23.7	76.5 77.1	76.8	5.7 5.7	5.7	5.7	16.7 16.8	16.8		20.2 19.6	19.9	
13-Aug-14	Rainy	Moderate	09:11	5.4	Surface	1.0	28.0 27.9	27.9	8.0 8.0	8.0	22.7 22.9	22.8	84.0 80.9	82.5	5.8 5.6	5.7	5.7	8.2 8.3	8.3	8.3	13.5 13.1	13.3	9.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	27.6 27.9	27.8	8.0 8.0	8.0	23.8 23.9	23.8	80.5 81.5	81.0	5.6 5.6	5.6	5.6	8.3 8.3	8.3		6.2 6.1	6.2	
15-Aug-14	Sunny	Moderate	10:59	4.0	Surface	1.0	28.5 28.5	28.5	8.0 8.0	8.0	19.8 19.8	19.8	71.0 70.9	71.0	4.9 4.9	4.9	**4.9**	5.6 5.4	5.5	6.1	5.6 5.8	5.7	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	27.7 27.7	27.7	8.0 8.0	8.0	22.6 22.6	22.6	65.2 65.4	65.3	4.5 4.5	4.5	**4.5**	6.8 6.5	6.7		6.1 6.2	6.2	
18-Aug-14	Sunny	Moderate	12:31	4.1	Surface	1.0	29.4 29.4	29.4	8.0 8.0	8.0	14.1 14.1	14.1	86.0 88.7	87.4	6.1 6.3	6.2	6.2	3.3 3.4	3.4	3.4	2.5 2.8	2.7	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.6 28.7	28.6	8.0 8.0	8.0	19.8 18.2	19.0	81.8 86.3	84.1	5.7 6.0	5.9	5.9	3.3 3.3	3.3		3.0 3.4	3.2	
20-Aug-14	Rainy	Moderate	15:52	3.6	Surface	1.0	28.6 28.6	28.6	8.0 8.0	8.0	14.2 12.1	13.2	87.8 88.1	88.0	6.3 6.4	6.3	6.3	5.4 5.3	5.4	5.6	4.8 5.5	5.2	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	28.5 28.6	28.5	7.9 8.0	7.9	15.8 15.2	15.5	85.9 87.8	86.9	6.1 6.3	6.2	6.2	6.0 5.5	5.8		4.9 4.4	4.7	

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 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*
22-Aug-14	Sunny	Moderate	16:59	4.3	Surface	1.0	29.4 29.4	29.4	7.8 7.7	7.8	12.6 12.6	12.6	81.4 80.8	81.1	5.8 5.8	5.8	5.8	4.8 4.8	4.8	4.7	6.5 6.1	6.3	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	29.2 29.3	29.3	7.7 7.7	7.7	13.1 13.0	13.1	80.6 81.1	80.9	5.7 5.8	5.8	5.8	4.4 4.6	4.5		6.5 6.8	6.7	
25-Aug-14	Sunny	Moderate	18:20	4.2	Surface	1.0	29.8 29.8	29.8	8.2 8.2	8.2	15.4 15.5	15.4	94.2 92.4	93.3	6.6 6.4	6.5	6.5	3.7 3.7	3.7	3.8	2.2 3.0	2.6	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	29.7 29.6	29.7	8.2 8.2	8.2	15.8 15.9	15.9	93.5 91.8	92.7	6.5 6.4	6.5	6.5	3.9 3.7	3.8		3.4 3.4	3.4	
27-Aug-14	Sunny	Moderate	08:28	4.3	Surface	1.0	27.2 27.1	27.2	8.1 8.1	8.1	24.0 24.2	24.1	72.8 72.5	72.7	5.5 5.2	5.3	5.3	3.5 3.3	3.4	3.4	11.3 11.7	11.5	11.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	27.2 27.2	27.2	8.1 8.1	8.1	24.1 24.2	24.2	77.3 78.1	77.7	5.9 5.8	5.8	5.8	3.2 3.5	3.4		11.6 13.0	12.3	
29-Aug-14	Sunny	Moderate	09:47	4.3	Surface	1.0	27.9 27.9	27.9	8.1 8.1	8.1	20.7 20.7	20.7	80.0 79.2	79.6	5.6 5.5	5.6	5.6	7.2 7.3	7.3	8.8	2.7 2.4	2.6	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	27.1 27.6	27.3	8.1 8.0	8.0	24.8 24.6	24.7	77.1 79.1	78.1	5.3 5.5	5.4	5.4	9.8 10.8	10.3		3.6 4.1	3.9	

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 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*
1-Aug-14	Sunny	Moderate	16:09	4.3	Surface	1.0	29.8 29.9	29.9	8.2 8.2	8.2	16.2 15.9	16.0	95.4 96.0	95.7	6.6 6.7	6.6	6.6	3.2 3.1	3.2	3.3	1.8 2.4	2.1	2.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	29.6 29.8	29.7	8.1 8.2	8.2	17.8 17.5	17.7	95.5 95.9	95.7	6.6 6.6	6.6	6.6	3.3 3.4	3.4		2.4 2.2	2.3	
4-Aug-14	Sunny	Moderate	18:58	4.1	Surface	1.0	30.2 30.2	30.2	8.4 8.4	8.4	15.5 15.5	15.5	73.5 77.8	75.7	5.3 5.7	5.5	5.5	5.4 5.6	5.5	5.5	2.4 2.3	2.4	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	30.3 30.1	30.2	8.4 8.4	8.4	16.3 16.6	16.4	73.9 74.3	74.1	5.3 5.5	5.4	5.4	5.2 5.5	5.4		2.7 2.3	2.5	
6-Aug-14	Sunny	Moderate	08:44	4.0	Surface	1.0	28.9 29.4	29.1	8.3 8.3	8.3	18.9 18.1	18.5	96.6 97.7	97.2	6.7 6.7	6.7	6.7	1.6 1.6	1.6	1.7	4.3 4.4	4.4	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	28.2 28.0	28.1	8.2 8.1	8.2	24.2 24.3	24.3	94.4 86.3	90.4	6.5 5.9	6.2	6.2	1.6 1.8	1.7		3.8 4.1	4.0	
8-Aug-14	Sunny	Moderate	11:03	4.3	Surface	1.0	29.9 29.0	29.4	8.3 8.2	8.3	14.6 15.5	15.1	90.7 89.2	90.0	6.4 6.3	6.3	6.3	2.1 2.1	2.1	2.1	1.5 1.4	1.5	1.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.9 28.7	28.8	8.2 8.3	8.2	18.4 18.4	18.4	89.5 92.2	90.9	6.2 6.5	6.3	6.3	2.1 2.1	2.1		1.5 1.8	1.7	
11-Aug-14	Sunny	Moderate	13:24	4.3	Surface	1.0	28.7 28.9	28.8	8.1 8.0	8.1	22.2 22.2	22.2	80.6 83.4	82.0	5.9 6.1	6.0	6.0	6.7 6.5	6.6	6.7	5.3 5.5	5.4	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.2 27.8	28.0	8.0 8.0	8.0	23.9 24.3	24.1	80.8 78.0	79.4	5.9 5.8	5.8	5.8	6.8 6.7	6.8		5.7 5.7	5.7	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	16:45	4.1	Surface	1.0	28.6 28.6	28.6	8.0 8.0	8.0	20.8 20.8	20.8	74.2 74.2	74.2	5.1 5.1	5.1	5.1	6.8 6.9	6.9	7.1	6.4 5.8	6.1	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.4 28.4	28.4	8.0 8.0	8.0	21.3 21.2	21.2	72.2 73.1	72.7	5.0 5.1	5.0	5.0	7.2 7.3	7.3		9.1 9.4	9.3	
18-Aug-14	Sunny	Moderate	07:00	4.3	Surface	1.0	29.1 29.1	29.1	7.9 8.0	7.9	14.8 14.8	14.8	92.6 92.5	92.6	6.6 6.6	6.6	6.6	1.9 2.0	2.0	2.0	2.0 2.0	2.0	1.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	29.1 29.1	29.1	7.9 7.8	7.8	16.3 16.4	16.4	92.6 92.5	92.6	6.5 6.5	6.5	6.5	2.0 1.9	2.0		1.9 1.6	1.8	
20-Aug-14	Rainy	Moderate	09:19	3.8	Surface	1.0	28.6 28.5	28.6	7.3 7.3	7.3	13.8 14.5	14.1	87.6 85.8	86.7	6.3 6.0	6.2	6.2	2.5 2.6	2.6	2.6	2.0 3.2	2.6	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	28.1 28.4	28.2	7.1 7.0	7.1	19.5 19.7	19.6	82.8 84.2	83.5	5.9 6.0	6.0	6.0	2.7 2.5	2.6		2.6 2.4	2.5	

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 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*
22-Aug-14	Sunny	Moderate	11:07	4.3	Surface	1.0	29.2 29.0	29.1	8.0 8.0	8.0	11.8 12.3	12.1	83.4 83.5	83.5	6.0 6.0	6.0	6.0	3.2 3.1	3.2	3.0	3.8 3.9	3.9	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.6 28.7	28.7	8.0 8.0	8.0	15.0 14.9	14.9	82.9 82.6	82.8	5.9 5.9	5.9	5.9	2.6 2.8	2.7		3.6 3.8	3.7	
25-Aug-14	Sunny	Moderate	12:51	4.3	Surface	1.0	28.9 29.1	29.0	8.1 8.1	8.1	16.7 16.6	16.6	77.6 78.3	78.0	5.5 5.5	5.5	5.5	2.8 2.8	2.8	2.9	2.3 2.3	2.3	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.1 28.6	28.4	8.1 8.1	8.1	18.8 17.8	18.3	77.2 77.4	77.3	5.4 5.4	5.4	5.4	2.9 2.9	2.9		3.4 3.2	3.3	
27-Aug-14	Sunny	Moderate	14:46	4.1	Surface	1.0	28.0 28.0	28.0	8.1 8.1	8.1	20.1 20.2	20.2	78.3 78.8	78.6	5.8 5.9	5.8	5.8	2.4 2.3	2.4	2.4	4.6 5.0	4.8	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	28.0 27.9	28.0	8.1 8.2	8.1	20.3 21.5	20.9	78.2 77.4	77.8	5.8 5.4	5.6	5.6	2.5 2.2	2.4		5.0 5.4	5.2	
29-Aug-14	Sunny	Moderate	15:09	4.0	Surface	1.0	27.6 27.7	27.6	8.1 8.1	8.1	23.5 23.0	23.3	79.5 79.5	79.5	5.5 5.5	5.5	5.5	5.5 5.2	5.4	6.1	3.3 5.1	4.2	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	27.2 27.4	27.3	8.1 8.1	8.1	24.7 24.5	24.6	78.8 79.3	79.1	5.5 5.5	5.5	5.5	6.6 6.7	6.7		4.1 4.8	4.5	

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 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*
1-Aug-14	Sunny	Moderate	09:09	4.3	Surface	1.0	29.0 29.0	29.0	8.1 8.1	8.1	20.0 20.0	20.0	81.2 79.9	80.6	5.6 5.5	5.5	5.5	1.7 1.8	1.8	1.8	4.1 4.3	4.2	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	28.9 29.0	29.0	8.1 8.1	8.1	20.3 20.1	20.2	83.1 80.5	81.8	5.7 5.5	5.6	5.6	1.8 1.8	1.8		4.6 4.4	4.5	
4-Aug-14	Sunny	Moderate	12:28	4.0	Surface	1.0	29.2 29.0	29.1	8.3 8.2	8.3	20.5 20.3	20.4	76.2 73.2	74.7	5.5 5.3	5.4	5.4	5.4 5.8	5.6	5.5	4.4 4.6	4.5	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	29.1 28.1	28.6	8.2 8.2	8.2	23.3 23.8	23.5	75.8 71.4	73.6	5.4 5.3	5.4	5.4	5.2 5.6	5.4		6.1 5.6	5.9	
6-Aug-14	Sunny	Moderate	16:32	4.2	Surface	1.0	29.3 29.4	29.3	8.4 8.5	8.4	17.3 17.2	17.2	116.4 120.6	118.5	8.0 8.4	8.2	8.2	3.5 3.3	3.4	3.3	5.8 5.5	5.7	6.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	29.0 28.8	28.9	8.4 8.4	8.4	20.2 20.7	20.4	114.7 111.3	113.0	7.8 7.8	7.8	7.8	3.3 3.0	3.2		7.2 7.3	7.3	
8-Aug-14	Sunny	Moderate	18:21	4.2	Surface	1.0	29.2 29.2	29.2	8.2 8.2	8.2	19.3 19.3	19.3	85.1 85.6	85.4	5.9 5.9	5.9	5.9	5.4 5.4	5.4	5.5	3.7 3.7	3.7	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	29.2 28.9	29.0	8.2 8.2	8.2	19.3 19.8	19.6	85.4 82.8	84.1	5.9 5.7	5.8	5.8	5.6 5.6	5.6		3.7 4.7	4.2	
11-Aug-14	Sunny	Moderate	06:01	4.3	Surface	1.0	28.2 28.1	28.2	8.1 8.1	8.1	22.1 22.1	22.1	79.5 79.3	79.4	5.9 5.9	5.9	5.9	8.8 8.9	8.9	8.9	5.3 5.2	5.3	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	27.6 28.0	27.8	8.1 8.1	8.1	24.4 24.1	24.2	78.5 79.7	79.1	5.8 5.9	5.8	5.8	8.9 8.9	8.9		6.6 7.0	6.8	
13-Aug-14	Rainy	Moderate	08:00	4.6	Surface	1.0	28.0 28.0	28.0	8.0 8.0	8.0	22.7 22.8	22.8	91.1 86.8	89.0	6.3 6.0	6.1	6.1	11.2 11.1	11.2	11.2	3.7 3.7	3.7	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.6	28.0 28.0	28.0	8.0 8.0	8.0	23.4 23.1	23.2	87.2 85.2	86.2	6.0 5.9	5.9	5.9	11.2 11.1	11.2		3.7 4.7	4.2	
15-Aug-14	Sunny	Moderate	09:37	3.9	Surface	1.0	28.1 28.1	28.1	7.9 7.8	7.9	20.8 20.7	20.8	70.4 70.3	70.4	4.9 4.9	4.9	**4.9**	12.9 13.3	13.1	13.7	11.1 11.3	11.2	11.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.0 28.0	28.0	7.8 7.8	7.8	21.3 21.3	21.3	69.8 69.8	69.8	4.9 4.9	4.9	4.9	13.9 14.4	14.2		11.5 11.3	11.4	
18-Aug-14	Sunny	Moderate	13:55	4.1	Surface	1.0	29.1 29.0	29.0	8.1 8.0	8.1	18.4 18.4	18.4	92.4 90.4	91.4	6.4 6.3	6.3	6.3	2.5 2.5	2.5	2.6	1.5 1.3	1.4	1.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	29.0 28.6	28.8	8.1 8.0	8.0	18.6 19.0	18.8	91.8 88.4	90.1	6.4 6.2	6.3	6.3	2.6 2.7	2.7		1.5 2.1	1.8	
20-Aug-14	Rainy	Moderate	17:18	3.9	Surface	1.0	28.4 28.4	28.4	8.1 8.1	8.1	14.2 14.2	14.2	95.5 95.3	95.4	6.9 6.8	6.9	6.9	2.9 2.9	2.9	2.9	3.2 2.7	3.0	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	28.5 28.5	28.5	8.1 8.1	8.1	16.6 16.3	16.5	94.6 94.9	94.8	6.7 6.7	6.7	6.7	2.8 3.0	2.9		4.1 4.0	4.1	

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*
22-Aug-14	Sunny	Moderate	18:21	4.1	Surface	1.0	29.4 29.3	29.4	8.0 8.0	8.0	12.6 13.1	12.8	80.6 81.2	80.9	5.7 5.8	5.8	5.8	4.1 4.3	4.2	3.7	4.2 4.2	4.2	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	29.1 28.9	29.0	7.9 8.0	8.0	14.8 14.9	14.9	80.1 81.9	81.0	5.7 5.8	5.7	5.7	3.3 3.1	3.2		4.5 5.6	5.1	
25-Aug-14	Sunny	Moderate	19:46	4.2	Surface	1.0	29.0 29.2	29.1	8.1 8.1	8.1	16.6 16.6	16.6	75.2 77.0	76.1	5.3 5.4	5.3	5.3	2.6 2.6	2.6	2.6	3.3 4.1	3.7	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	28.4 29.1	28.7	8.1 8.1	8.1	18.2 17.6	17.9	74.8 76.9	75.9	5.3 5.4	5.3	5.3	2.5 2.5	2.5		4.9 5.0	5.0	
27-Aug-14	Sunny	Moderate	06:59	4.0	Surface	1.0	27.4 27.4	27.4	8.1 8.1	8.1	23.4 23.4	23.4	71.9 77.7	74.8	5.1 5.4	5.3	5.3	5.2 5.7	5.5	5.5	5.7 5.1	5.4	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	27.3 27.3	27.3	8.1 8.1	8.1	23.6 23.7	23.7	73.6 70.9	72.3	5.1 5.1	5.1	5.1	5.3 5.5	5.4		5.6 5.7	5.7	
29-Aug-14	Sunny	Moderate	08:25	4.3	Surface	1.0	27.2 27.2	27.2	8.1 8.1	8.1	24.0 24.1	24.0	83.3 87.8	85.6	5.8 6.1	5.9	5.9	15.2 15.2	15.2	15.1	4.7 5.6	5.2	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	27.2 27.2	27.2	8.1 8.1	8.1	24.2 24.2	24.2	79.6 81.1	80.4	5.5 5.6	5.6	5.6	14.8 15.2	15.0		5.3 5.5	5.4	

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 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*
1-Aug-14	Sunny	Moderate	16:14	6.3	Surface	1.0	29.9 30.3	30.1	8.0 8.0	8.0	21.4 21.0	21.2	96.6 101.5	99.1	6.5 6.8	6.7	6.6	1.7 1.9	1.8	2.2	2.8 2.6	2.7	2.7
					Middle	3.2	30.0 29.6	29.8	7.9 7.9	7.9	21.3 21.9	21.6	99.0 93.8	96.4	6.7 6.3	6.5		2.4 2.3	2.4		2.5 2.6	2.6	
					Bottom	5.3	29.1 29.8	29.5	7.9 7.9	7.9	23.2 21.7	22.5	93.1 98.2	95.7	6.3 6.6	6.5	6.5	2.2 2.4	2.3		2.7 3.0	2.9	
4-Aug-14	Sunny	Moderate	19:12	6.4	Surface	1.0	30.1 29.7	29.9	8.5 8.4	8.5	20.1 20.4	20.3	126.3 116.1	121.2	8.5 7.9	8.2	8.0	1.7 1.7	1.7	1.7	3.6 3.7	3.7	3.7
					Middle	3.2	29.1 29.0	29.1	8.4 8.3	8.4	22.8 22.8	22.8	114.8 111.0	112.9	7.8 7.5	7.7		1.6 1.6	1.6		3.7 3.7	3.7	
					Bottom	5.4	29.4 28.8	29.1	8.4 8.3	8.4	22.8 23.4	23.1	119.4 110.4	114.9	8.0 7.5	7.8	7.8	1.7 1.7	1.7		3.8 3.8	3.8	
6-Aug-14	Sunny	Moderate	08:06	6.6	Surface	1.0	28.7 28.7	28.7	8.6 8.3	8.4	21.4 21.5	21.4	109.6 110.8	110.2	7.5 7.6	7.6	7.5	1.3 1.2	1.3	1.4	4.0 3.5	3.8	4.1
					Middle	3.3	28.3 28.4	28.4	8.5 8.5	8.5	23.2 22.6	22.9	103.6 109.5	106.6	7.1 7.5	7.3		1.5 1.5	1.5		4.1 4.0	4.1	
					Bottom	5.6	28.4 28.2	28.3	8.5 8.5	8.5	23.6 24.1	23.9	107.7 103.0	105.4	7.4 7.0	7.2	7.2	1.5 1.5	1.5		4.1 4.7	4.4	
8-Aug-14	Sunny	Moderate	09:54	6.7	Surface	1.0	28.8 28.9	28.9	8.1 8.0	8.0	19.7 19.5	19.6	96.6 97.3	97.0	6.7 6.7	6.7	6.7	1.8 2.0	1.9	1.9	1.7 1.5	1.6	2.8
					Middle	3.4	28.7 28.8	28.8	8.0 8.0	8.0	20.0 19.7	19.9	95.3 96.7	96.0	6.6 6.7	6.6		1.8 2.0	1.9		3.1 3.9	3.5	
					Bottom	5.7	28.6 28.6	28.6	7.9 8.0	7.9	20.2 20.5	20.4	96.4 95.5	96.0	6.7 6.6	6.6	6.6	1.8 1.8	1.8		3.6 3.2	3.4	
11-Aug-14	Sunny	Moderate	13:50	7.0	Surface	1.0	28.8 28.7	28.8	8.2 8.3	8.3	23.5 23.6	23.6	87.5 83.5	85.5	5.9 5.7	5.8	5.9	4.1 4.1	4.1	4.2	4.2 4.3	4.3	4.5
					Middle	3.5	28.4 28.5	28.5	8.3 8.2	8.2	24.2 24.0	24.1	83.2 90.2	86.7	5.7 6.1	5.9		4.3 4.2	4.3		4.3 4.4	4.4	
					Bottom	6.0	28.5 28.4	28.4	8.3 8.2	8.2	24.2 24.2	24.2	84.4 85.0	84.7	5.7 5.7	5.7	5.7	4.2 4.3	4.3		4.6 4.9	4.8	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	16:51	6.5	Surface	1.0	29.1 29.1	29.1	7.9 7.8	7.9	21.9 21.8	21.9	78.6 79.4	79.0	5.5 5.6	5.5	5.5	4.0 3.9	4.0	4.0	4.2 4.4	4.3	4.4
					Middle	3.3	28.8 28.9	28.8	7.8 7.9	7.9	22.6 22.4	22.5	78.8 78.2	78.5	5.5 5.5	5.5		4.0 4.0	4.0		4.3 4.2	4.3	
					Bottom	5.5	29.0 28.5	28.7	7.8 7.8	7.8	22.3 23.2	22.8	79.1 82.5	80.8	5.5 5.8	5.7	5.7	3.9 4.1	4.0		4.6 4.8	4.7	
18-Aug-14	Sunny	Moderate	06:16	6.8	Surface	1.0	29.2 29.2	29.2	7.7 7.7	7.7	17.1 17.2	17.1	86.0 85.8	85.9	6.0 6.0	6.0	6.0	2.6 2.4	2.5	2.4	2.4 2.3	2.4	2.6
					Middle	3.4	29.2 29.2	29.2	7.7 7.7	7.7	17.7 17.5	17.6	84.7 85.1	84.9	5.9 5.9	5.9		2.3 2.4	2.4		2.5 2.9	2.7	
					Bottom	5.8	29.1 29.1	29.1	7.7 7.7	7.7	18.8 18.1	18.5	84.8 84.8	84.8	5.9 5.9	5.9	5.9	2.3 2.3	2.3		2.6 2.6	2.6	
20-Aug-14	Rainy	Moderate	08:49	6.6	Surface	1.0	28.8 28.8	28.8	8.0 8.0	8.0	14.8 15.1	14.9	96.3 97.1	96.7	6.9 6.9	6.9	6.8	2.5 2.5	2.5	2.5	3.3 3.0	3.2	4.6
					Middle	3.3	28.7 28.7	28.7	8.0 7.9	8.0	17.0 16.9	16.9	96.0 95.3	95.7	6.8 6.7	6.7		2.5 2.6	2.6		4.8 5.7	5.3	
					Bottom	5.6	28.7 28.6	28.7	8.0 7.9	7.9	17.0 17.3	17.1	97.2 96.0	96.6	6.8 6.8	6.8	6.8	2.5 2.5	2.5		4.4 6.4	5.4	

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 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*
22-Aug-14	Sunny	Moderate	10:21	6.3	Surface	1.0	28.5 28.5	28.5	7.7 7.7	7.7	15.6 15.4	15.5	73.7 74.3	74.0	5.2 5.3	5.3	5.3	3.6 3.6	3.6	3.6	3.3 3.4	3.4	3.8
					Middle	3.2	28.1 28.1	28.1	7.7 7.8	7.8	18.4 18.3	18.3	72.5 73.5	73.0	5.1 5.2	5.2		3.5 3.5	3.5		3.0 3.8	3.4	
					Bottom	5.3	28.1 28.0	28.1	7.8 7.7	7.7	18.8 19.0	18.9	73.1 68.6	70.9	5.1 4.8	5.0	5.0	3.7 3.9	3.8		3.6 5.3	4.5	
25-Aug-14	Sunny	Moderate	11:56	6.8	Surface	1.0	28.5 28.5	28.5	7.9 7.9	7.9	21.2 20.5	20.8	88.2 87.3	87.8	6.1 6.0	6.1	6.0	2.3 2.1	2.2	2.4	2.1 2.2	2.2	2.3
					Middle	3.4	28.1 27.9	28.0	7.9 7.9	7.9	22.2 21.8	22.0	86.8 84.7	85.8	6.0 5.9	5.9		2.2 2.3	2.3		2.2 2.0	2.1	
					Bottom	5.8	27.7 28.0	27.8	7.9 7.9	7.9	23.0 22.4	22.7	83.9 86.8	85.4	5.8 6.0	5.9	5.9	2.6 2.5	2.6		2.7 2.2	2.5	
27-Aug-14	Sunny	Moderate	14:39	6.5	Surface	1.0	27.2 27.3	27.3	8.1 8.1	8.1	25.7 24.9	25.3	77.4 75.1	76.3	5.3 5.2	5.2	5.2	3.6 3.6	3.6	3.7	3.9 3.7	3.8	4.8
					Middle	3.3	26.3 26.9	26.6	8.0 8.1	8.0	28.5 26.3	27.4	74.3 74.1	74.2	5.1 5.1	5.1		3.6 3.6	3.6		3.6 4.0	3.8	
					Bottom	5.5	26.8 26.2	26.5	8.1 7.9	8.0	26.7 29.1	27.9	75.2 73.9	74.6	5.2 5.1	5.1	5.1	3.8 3.7	3.8		7.1 6.4	6.8	
29-Aug-14	Sunny	Moderate	15:42	6.5	Surface	1.0	28.3 27.5	27.9	8.0 7.9	7.9	25.7 27.3	26.5	73.6 73.5	73.6	5.0 5.0	5.0	5.0	3.9 3.8	3.9	4.1	3.1 2.2	2.7	2.6
					Middle	3.3	26.6 27.4	27.0	7.9 7.9	7.9	29.3 27.5	28.4	73.1 73.1	73.1	5.0 5.0	5.0		3.9 3.8	3.9		2.3 3.2	2.8	
					Bottom	5.5	27.4 27.1	27.2	7.9 7.9	7.9	27.7 29.2	28.4	73.6 71.5	72.6	5.0 4.8	4.9	4.9	4.3 4.4	4.4		2.4 2.1	2.3	

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 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*
1-Aug-14	Sunny	Moderate	08:21	6.6	Surface	1.0	29.4 29.6	29.5	7.9 7.9	7.9	18.6 18.2	18.4	83.2 84.8	84.0	5.7 5.9	5.8	5.7	1.5 1.5	1.5	1.5	2.1 2.2	2.2	2.8
					Middle	3.3	29.4 29.3	29.4	7.9 7.9	7.9	20.1 19.2	19.6	82.2 82.4	82.3	5.6 5.7	5.6		1.5 1.4	1.5		3.1 3.0	3.1	
					Bottom	5.6	29.0 29.0	29.0	7.9 7.9	7.9	21.0 21.3	21.2	82.8 80.5	81.7	5.7 5.5	5.6	5.6	1.5 1.5	1.5		2.7 3.4	3.1	
4-Aug-14	Sunny	Moderate	11:50	6.5	Surface	1.0	30.0 30.0	30.0	7.8 7.8	7.8	18.2 18.1	18.1	89.3 88.4	88.9	6.1 6.1	6.1	5.8	1.4 1.4	1.4	1.4	2.6 2.9	2.8	3.1
					Middle	3.3	28.9 28.8	28.8	7.7 7.7	7.7	21.9 22.6	22.3	79.4 77.9	78.7	5.4 5.3	5.4		1.5 1.4	1.5		3.2 3.3	3.3	
					Bottom	5.5	27.6 27.6	27.6	7.7 7.7	7.7	25.6 25.6	25.6	77.4 79.6	78.5	5.3 5.4	5.4	5.4	1.4 1.4	1.4		3.3 3.3	3.3	
6-Aug-14	Sunny	Moderate	17:10	6.7	Surface	1.0	28.0 28.2	28.1	8.2 8.3	8.2	25.2 24.9	25.1	102.8 108.4	105.6	7.0 7.4	7.2	7.1	2.1 2.1	2.1	2.1	3.3 3.4	3.4	4.3
					Middle	3.4	27.5 27.6	27.6	8.1 8.2	8.2	26.8 26.6	26.7	98.1 103.4	100.8	6.7 7.0	6.9		2.2 2.1	2.2		4.0 4.1	4.1	
					Bottom	5.7	27.5 27.8	27.6	8.1 8.2	8.1	26.9 26.6	26.8	100.2 105.9	103.1	6.8 7.2	7.0	7.0	2.1 2.1	2.1		5.2 5.3	5.3	
8-Aug-14	Sunny	Moderate	18:45	6.9	Surface	1.0	27.4 27.2	27.3	8.1 8.1	8.1	26.4 26.8	26.6	77.4 78.0	77.7	5.3 5.3	5.3	5.2	4.2 4.7	4.5	5.0	2.6 2.6	2.6	2.8
					Middle	3.5	26.8 27.0	26.9	8.1 8.1	8.1	27.8 27.5	27.7	76.1 75.5	75.8	5.2 5.1	5.1		5.2 5.4	5.3		2.6 2.6	2.6	
					Bottom	5.9	26.9 26.5	26.7	8.0 8.1	8.1	27.8 29.2	28.5	72.1 71.0	71.6	4.9 4.8	4.9	4.9	5.2 5.4	5.3		2.9 3.3	3.1	
11-Aug-14	Sunny	Moderate	05:26	6.8	Surface	1.0	27.2 27.1	27.1	8.2 8.2	8.2	26.2 26.3	26.3	75.5 74.9	75.2	5.2 5.1	5.2	5.1	5.9 6.4	6.2	6.8	2.5 2.6	2.6	3.2
					Middle	3.4	26.9 26.8	26.8	8.2 8.2	8.2	27.0 27.0	27.0	72.7 73.2	73.0	5.0 5.0	5.0		7.3 6.6	7.0		3.3 3.5	3.4	
					Bottom	5.8	26.6 26.6	26.6	8.2 8.2	8.2	27.9 28.0	28.0	73.8 72.4	73.1	5.1 5.0	5.0	5.0	7.1 7.3	7.2		3.5 3.6	3.6	
13-Aug-14	Rainy	Moderate	07:21	6.9	Surface	1.0	27.3 27.2	27.2	7.8 7.8	7.8	25.8 25.9	25.8	80.3 79.9	80.1	5.5 5.5	5.5	5.5	8.6 8.7	8.7	9.9	5.1 5.3	5.2	6.0
					Middle	3.5	26.8 26.8	26.8	7.8 7.8	7.8	27.4 27.2	27.3	79.0 77.7	78.4	5.4 5.3	5.4		10.2 10.8	10.5		5.1 5.9	5.5	
					Bottom	5.9	27.0 26.7	26.9	7.8 7.8	7.8	27.4 27.6	27.5	80.2 77.1	78.7	5.5 5.3	5.4	5.4	10.1 10.8	10.5		7.0 7.4	7.2	
15-Aug-14	Sunny	Moderate	08:59	6.5	Surface	1.0	28.2 28.3	28.2	7.7 7.7	7.7	21.6 21.4	21.5	72.7 74.1	73.4	5.2 5.3	5.2	5.2	5.8 5.6	5.7	5.8	6.2 6.0	6.1	6.1
					Middle	3.3	28.1 28.0	28.0	7.7 7.7	7.7	21.9 21.9	21.9	73.9 71.6	72.8	5.3 5.1	5.2		5.8 5.8	5.8		5.7 5.9	5.8	
					Bottom	5.5	27.9 27.9	27.9	7.7 7.7	7.7	22.6 23.3	22.9	77.4 72.7	75.1	5.5 5.2	5.3	5.3	5.8 5.8	5.8		6.2 6.5	6.4	
18-Aug-14	Sunny	Moderate	14:17	6.8	Surface	1.0	28.9 29.1	29.0	8.0 7.9	7.9	20.2 19.8	20.0	87.7 89.3	88.5	6.0 6.1	6.1	6.1	2.4 2.3	2.4	2.4	1.5 1.5	1.5	1.9
					Middle	3.4	28.3 28.3	28.3	7.8 7.9	7.9	22.4 22.4	22.4	89.6 88.3	89.0	6.2 6.1	6.1		2.5 2.3	2.4		1.7 1.9	1.8	
					Bottom	5.8	28.3 28.3	28.3	8.0 7.9	7.9	23.5 23.2	23.4	89.3 92.0	90.7	6.1 6.3	6.2	6.2	2.4 2.3	2.4		2.5 2.2	2.4	
20-Aug-14	Rainy	Moderate	17:50	6.5	Surface	1.0	28.1 27.9	28.0	7.9 8.0	7.9	19.0 20.4	19.7	80.4 78.6	79.5	5.7 5.5	5.6	5.5	2.8 2.7	2.8	2.8	3.2 3.8	3.5	3.4
					Middle	3.3	27.1 27.0	27.1	7.9 7.8	7.8	24.4 24.4	24.4	76.0 80.7	78.4	5.2 5.6	5.4		2.9 2.8	2.9		3.9 2.5	3.2	
					Bottom	5.5	27.1 26.9	27.0	7.8 7.7	7.8	25.3 25.5	25.4	70.6 80.1	75.4	4.9 5.5	5.2	5.2	2.8 2.8	2.8		2.7 4.1	3.4	

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 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*
22-Aug-14	Sunny	Moderate	19:06	6.4	Surface	1.0	27.7 28.5	28.1	7.9 7.9	7.9	23.0 20.5	21.8	74.8 74.2	74.5	5.2 5.2	5.2	5.2	2.9 2.9	2.9	3.3	2.3 2.3	2.3	2.3
					Middle	3.2	26.5 27.1	26.8	8.0 7.9	7.9	26.5 25.3	25.9	73.1 73.7	73.4	5.1 5.1	5.1		3.4 3.4	3.4		2.2 2.4	2.3	
					Bottom	5.4	26.4 26.5	26.5	7.9 8.0	7.9	26.7 26.6	26.7	68.1 68.6	68.4	4.7 4.8	4.7	4.7	3.4 3.5	3.5		2.4 2.3	2.4	
25-Aug-14	Sunny	Moderate	20:29	6.9	Surface	1.0	26.5 26.7	26.6	7.9 8.0	8.0	28.1 27.5	27.8	80.3 74.1	77.2	5.5 5.1	5.3	5.2	9.8 10.6	10.2	11.4	8.9 8.3	8.6	10.1
					Middle	3.5	26.2 26.2	26.2	7.9 8.0	7.9	28.7 29.4	29.0	75.2 73.5	74.4	5.2 5.0	5.1		11.5 11.2	11.4		9.8 10.3	10.1	
					Bottom	5.9	26.3 26.1	26.2	7.9 7.9	7.9	29.6 29.7	29.7	72.0 76.5	74.3	4.9 5.3	5.1	5.1	12.3 12.6	12.5		11.2 11.9	11.6	
27-Aug-14	Sunny	Moderate	06:06	6.4	Surface	1.0	27.1 27.1	27.1	7.9 7.9	7.9	25.2 25.4	25.3	74.8 75.4	75.1	5.2 5.2	5.2	5.2	5.7 5.5	5.6	6.2	2.9 3.9	3.4	4.2
					Middle	3.2	26.7 26.7	26.7	7.9 7.9	7.9	26.4 26.3	26.4	74.5 74.6	74.6	5.1 5.1	5.1		6.6 6.2	6.4		4.3 4.8	4.6	
					Bottom	5.4	26.6 26.6	26.6	7.9 7.9	7.9	26.9 26.8	26.8	73.4 74.1	73.8	5.1 5.1	5.1	5.1	6.5 6.5	6.5		4.7 4.4	4.6	
29-Aug-14	Sunny	Moderate	07:50	6.6	Surface	1.0	27.4 27.1	27.2	7.8 7.8	7.8	24.6 25.4	25.0	81.3 80.3	80.8	5.7 5.6	5.7	5.7	5.4 5.2	5.3	5.3	5.5 5.2	5.4	5.2
					Middle	3.3	26.8 26.8	26.8	7.8 7.8	7.8	26.7 26.7	26.7	79.0 79.8	79.4	5.6 5.6	5.6		5.4 5.1	5.3		5.1 5.5	5.3	
					Bottom	5.6	26.9 26.7	26.8	7.8 7.8	7.8	26.6 26.7	26.7	78.2 78.1	78.2	5.5 5.5	5.5	5.5	5.2 5.3	5.3		4.7 5.2	5.0	

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 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*
1-Aug-14	Sunny	Moderate	16:31	5.0	Surface	1.0	30.2 30.2	30.2	8.0 8.0	8.0	21.0 21.1	21.0	101.9 102.6	102.3	6.9 6.9	6.9	6.9	1.7 1.6	1.7	1.6	2.3 2.4	2.4	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	29.7 29.9	29.8	8.0 8.0	8.0	21.7 21.5	21.6	99.6 102.0	100.8	6.7 6.9	6.8	6.8	1.5 1.5	1.5		2.4 2.8	2.6	
4-Aug-14	Sunny	Moderate	19:21	5.1	Surface	1.0	29.9 29.7	29.8	8.5 8.4	8.4	20.9 21.1	21.0	126.1 125.3	125.7	8.5 8.5	8.5	8.5	1.5 1.5	1.5	1.5	3.4 3.0	3.2	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	29.7 29.7	29.7	8.3 8.4	8.4	21.5 21.3	21.4	126.1 125.4	125.8	8.5 8.5	8.5	8.5	1.5 1.4	1.5		6.2 6.5	6.4	
6-Aug-14	Sunny	Moderate	08:00	5.3	Surface	1.0	27.8 27.6	27.7	8.1 8.0	8.0	23.2 24.2	23.7	93.2 89.5	91.4	6.4 6.2	6.3	6.3	2.1 2.1	2.1	2.1	3.4 3.8	3.6	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.4 27.6	27.5	7.9 8.0	8.0	25.7 23.8	24.8	90.6 91.5	91.1	6.2 6.3	6.3	6.3	2.0 2.0	2.0		4.6 4.6	4.6	
8-Aug-14	Sunny	Moderate	09:41	4.7	Surface	1.0	28.3 28.2	28.2	7.8 7.8	7.8	20.9 21.2	21.0	85.9 85.4	85.7	6.0 5.9	5.9	5.9	3.0 3.1	3.1	3.2	2.8 2.5	2.7	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	27.9 28.1	28.0	7.7 7.8	7.8	22.1 22.4	22.3	85.5 85.8	85.7	5.9 5.9	5.9	5.9	3.2 3.3	3.3		3.0 4.2	3.6	
11-Aug-14	Sunny	Moderate	14:07	5.4	Surface	1.0	28.7 28.6	28.7	8.2 8.3	8.3	23.7 23.8	23.8	82.3 81.4	81.9	5.6 5.5	5.6	5.6	4.0 3.8	3.9	4.0	4.1 4.4	4.3	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	28.3 28.7	28.5	8.3 8.2	8.2	24.3 23.9	24.1	81.0 81.7	81.4	5.5 5.5	5.5	5.5	4.1 4.0	4.1		4.6 4.3	4.5	
13-Aug-14***	-	-	-	-	Surface	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-	-	- -	-	-
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	-	- -	-	- -	-	- -	-	- -	-	- -	-	-	- -	-		- -	-	
15-Aug-14	Sunny	Moderate	17:00	5.1	Surface	1.0	29.1 29.1	29.1	7.9 7.9	7.9	21.7 21.8	21.8	77.5 78.0	77.8	5.4 5.5	5.5	5.5	4.2 4.2	4.2	4.2	3.5 3.5	3.5	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	28.9 28.7	28.8	7.9 7.9	7.9	22.4 22.8	22.6	77.7 76.4	77.1	5.5 5.4	5.4	5.4	4.2 4.1	4.2		3.7 4.1	3.9	
18-Aug-14	Sunny	Moderate	06:01	4.9	Surface	1.0	28.0 28.1	28.1	7.7 7.7	7.7	20.6 20.9	20.8	74.7 74.1	74.4	5.2 5.2	5.2	5.2	3.6 3.6	3.6	4.0	3.2 3.5	3.4	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	27.7 27.9	27.8	7.7 7.7	7.7	21.8 21.7	21.8	75.5 74.1	74.8	5.3 5.2	5.2	5.2	4.4 4.2	4.3		4.8 4.3	4.6	
20-Aug-14	Rainy	Moderate	08:42	5.0	Surface	1.0	27.8 28.2	28.0	7.9 7.8	7.8	18.6 19.2	18.9	79.8 84.3	82.1	5.7 5.9	5.8	5.8	3.4 3.3	3.4	3.4	3.9 5.0	4.5	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	27.0 26.7	26.9	7.8 7.7	7.8	22.6 22.9	22.8	77.0 77.2	77.1	5.4 5.4	5.4	5.4	3.4 3.3	3.4		3.6 4.2	3.9	

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 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*
22-Aug-14	Sunny	Moderate	10:13	4.7	Surface	1.0	28.5 28.4	28.4	7.6 7.7	7.7	15.5 15.5	15.5	74.3 74.1	74.2	5.3 5.3	5.3	5.3	3.8 3.8	3.8	3.8	5.6 5.8	5.7	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	28.0 28.2	28.1	7.7 7.7	7.7	18.6 18.5	18.5	73.4 73.6	73.5	5.2 5.2	5.2	5.2	3.7 3.7	3.7		5.8 5.5	5.7	
25-Aug-14	Sunny	Moderate	11:39	5.2	Surface	1.0	27.2 27.3	27.3	7.8 7.8	7.8	24.6 23.9	24.3	76.4 77.9	77.2	5.3 5.4	5.3	5.3	3.7 3.4	3.6	3.8	4.3 4.3	4.3	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	27.1 27.3	27.2	7.8 7.8	7.8	24.8 23.7	24.3	76.8 79.1	78.0	5.3 5.5	5.4	5.4	3.9 4.0	4.0		4.4 5.0	4.7	
27-Aug-14	Sunny	Moderate	14:49	5.1	Surface	1.0	27.0 26.9	27.0	8.1 8.1	8.1	26.2 26.3	26.2	74.0 73.1	73.6	5.1 5.0	5.1	5.1	3.4 3.5	3.5	3.5	3.5 3.6	3.6	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	26.9 26.9	26.9	8.0 8.1	8.1	26.4 26.5	26.5	74.0 73.6	73.8	5.1 5.1	5.1	5.1	3.5 3.5	3.5		3.4 4.4	3.9	
29-Aug-14	Sunny	Moderate	15:50	5.1	Surface	1.0	28.3 28.1	28.2	8.0 8.0	8.0	25.4 25.6	25.5	78.5 79.3	78.9	5.3 5.4	5.3	5.3	3.1 3.2	3.2	3.2	2.4 4.2	3.3	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	27.5 28.3	27.9	8.0 8.0	8.0	27.5 26.9	27.2	76.9 79.5	78.2	5.2 5.3	5.3	5.3	3.2 3.1	3.2		3.5 3.3	3.4	

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 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*
1-Aug-14	Sunny	Moderate	08:06	5.1	Surface	1.0	28.7 28.5	28.6	8.0 8.0	8.0	20.6 20.8	20.7	74.2 73.3	73.8	5.1 5.1	5.1	5.1	2.0 2.0	2.0	2.2	4.3 4.2	4.3	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	28.1 28.3	28.2	7.9 8.0	7.9	23.9 24.7	24.3	72.1 73.4	72.8	4.9 5.0	5.0	5.0	2.3 2.3	2.3		3.6 4.3	4.0	
4-Aug-14	Sunny	Moderate	11:45	4.9	Surface	1.0	28.8 28.9	28.9	7.7 7.7	7.7	20.8 20.4	20.6	87.0 89.7	88.4	6.0 6.2	6.1	6.1	1.7 1.6	1.7	1.7	3.4 3.4	3.4	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	28.4 28.9	28.6	7.7 7.7	7.7	22.7 22.8	22.8	87.4 88.8	88.1	6.0 6.0	6.0	6.0	1.6 1.7	1.7		3.5 2.8	3.2	
6-Aug-14	Sunny	Moderate	17:21	5.3	Surface	1.0	27.8 27.8	27.8	8.3 8.2	8.2	25.6 26.1	25.8	104.8 103.0	103.9	7.1 7.0	7.1	7.1	1.7 1.8	1.8	1.8	3.6 3.7	3.7	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	27.4 27.7	27.5	8.1 8.2	8.2	27.1 26.8	26.9	103.6 104.9	104.3	7.1 7.1	7.1	7.1	1.8 1.8	1.8		4.0 3.9	4.0	
8-Aug-14	Sunny	Moderate	18:55	4.7	Surface	1.0	27.2 27.3	27.3	8.1 8.1	8.1	26.9 26.4	26.6	76.8 77.5	77.2	5.2 5.3	5.3	5.3	4.2 4.0	4.1	4.8	2.8 2.7	2.8	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	27.1 27.2	27.2	8.1 8.1	8.1	27.5 27.5	27.5	77.9 76.8	77.4	5.3 5.2	5.3	5.3	5.6 5.4	5.5		3.2 3.1	3.2	
11-Aug-14	Sunny	Moderate	05:15	5.4	Surface	1.0	27.2 27.2	27.2	8.2 8.2	8.2	26.1 26.1	26.1	75.6 79.4	77.5	5.2 5.5	5.3	5.3	6.0 5.6	5.8	6.3	3.5 3.8	3.7	4.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	27.0 27.0	27.0	8.2 8.2	8.2	26.6 26.8	26.7	76.3 76.5	76.4	5.2 5.3	5.2	5.2	6.7 6.9	6.8		4.3 4.8	4.6	
13-Aug-14	Rainy	Moderate	07:06	5.4	Surface	1.0	27.3 27.0	27.2	7.8 7.7	7.7	25.0 25.7	25.4	82.8 82.4	82.6	5.7 5.7	5.7	5.7	7.5 7.7	7.6	8.5	8.4 8.2	8.3	8.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	26.8 26.9	26.9	7.8 7.7	7.8	26.9 24.9	25.9	82.7 78.1	80.4	5.7 5.4	5.6	5.6	9.5 9.0	9.3		9.5 9.0	9.3	
15-Aug-14	Sunny	Moderate	08:53	5.0	Surface	1.0	26.5 26.3	26.4	7.7 7.7	7.7	26.8 27.2	27.0	74.4 72.3	73.4	5.3 5.2	5.2	5.2	13.4 13.7	13.6	13.6	13.4 13.8	13.6	14.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	26.3 26.2	26.3	7.7 7.6	7.7	28.2 27.0	27.6	73.2 79.5	76.4	5.2 5.7	5.4	5.4	13.3 13.9	13.6		14.8 14.2	14.5	
18-Aug-14	Sunny	Moderate	14:31	5.2	Surface	1.0	29.4 29.2	29.3	8.0 8.0	8.0	18.9 18.9	18.9	90.4 89.4	89.9	6.2 6.2	6.2	6.2	2.2 2.4	2.3	2.5	1.4 1.3	1.4	1.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	28.7 28.3	28.5	8.0 8.0	8.0	22.2 22.6	22.4	88.8 86.4	87.6	6.1 5.9	6.0	6.0	2.7 2.6	2.7		1.5 2.2	1.9	
20-Aug-14	Rainy	Moderate	17:59	5.1	Surface	1.0	27.2 27.4	27.3	8.0 8.0	8.0	23.5 23.0	23.2	73.6 74.2	73.9	5.1 5.2	5.1	5.1	2.5 2.6	2.6	2.6	4.8 4.7	4.8	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	26.9 27.2	27.1	7.9 8.0	8.0	25.5 24.9	25.2	72.3 72.9	72.6	5.0 5.1	5.1	5.1	2.5 2.6	2.6		5.0 4.8	4.9	

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

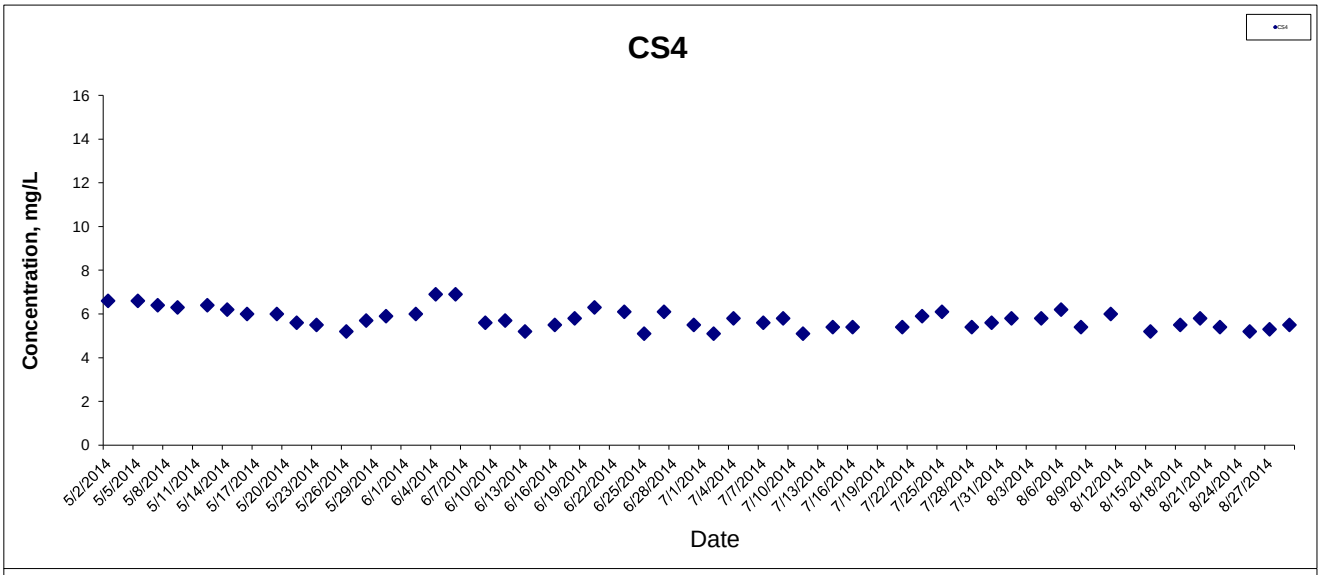
Water Quality Monitoring Results at SR10B(N) - Mid-FloodTide

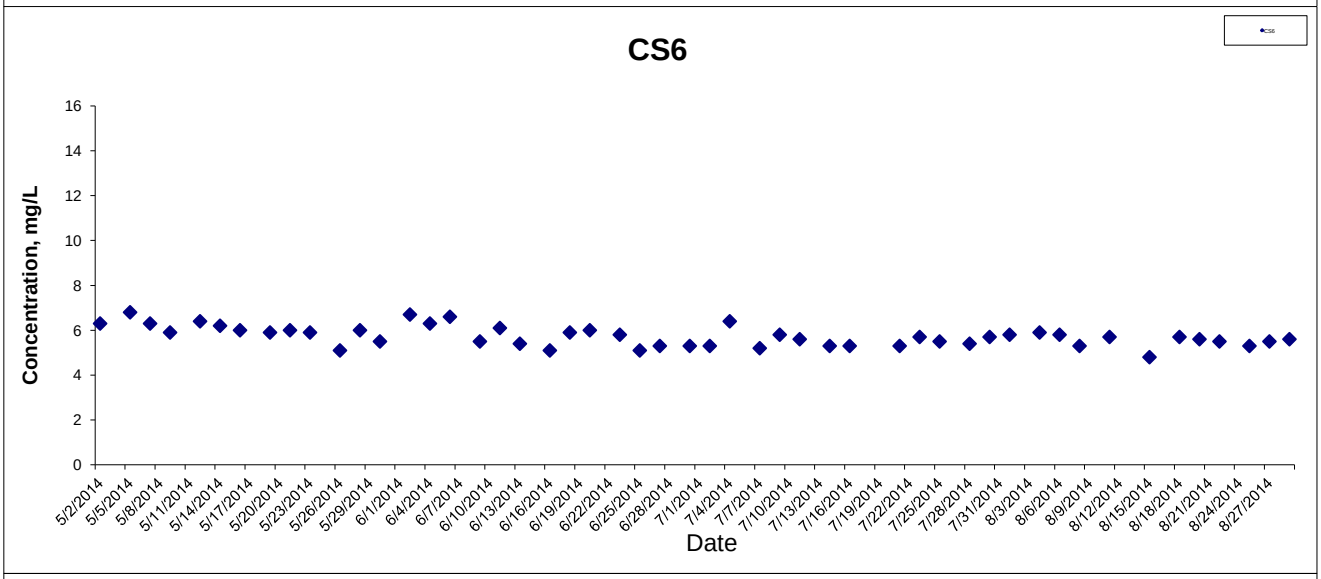
Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Aug-14	Sunny	Moderate	19:16	5.0	Surface	1.0	27.3 27.5	27.4	8.0 8.0	8.0	22.6 22.9	22.8	74.3 74.9	74.6	5.1 5.2	5.2	5.2	4.0 4.1	4.1	4.2	2.8 2.3	2.6	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	26.5 26.6	26.5	8.0 8.0	8.0	26.7 26.7	26.7	73.9 73.5	73.7	5.1 5.1	5.1	5.1	4.3 4.2	4.3		2.8 2.8	2.8	
25-Aug-14	Sunny	Moderate	20:43	5.2	Surface	1.0	26.6 26.5	26.6	8.1 8.1	8.1	28.0 28.2	28.1	73.7 73.3	73.5	5.1 5.0	5.0	5.0	10.1 10.7	10.4	10.8	11.2 10.6	10.9	10.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	26.5 26.3	26.4	8.1 8.1	8.1	28.5 28.9	28.7	73.7 72.9	73.3	5.1 5.0	5.0	5.0	11.2 11.0	11.1		10.3 11.5	10.9	
27-Aug-14	Sunny	Moderate	05:56	5.1	Surface	1.0	26.6 26.6	26.6	7.8 7.9	7.9	26.9 27.0	27.0	73.9 73.6	73.8	5.2 5.1	5.1	5.1	7.8 7.9	7.9	7.8	17.3 16.1	16.7	16.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	26.6 26.5	26.6	7.8 7.8	7.8	27.1 26.7	26.9	72.8 73.5	73.2	5.0 5.1	5.1	5.1	7.6 7.7	7.7		16.7 17.1	16.9	
29-Aug-14	Sunny	Moderate	07:44	5.3	Surface	1.0	26.1 26.1	26.1	7.8 7.8	7.8	28.5 28.3	28.4	72.2 78.3	75.3	5.1 5.5	5.3	5.3	8.8 8.5	8.7	8.7	6.6 6.2	6.4	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	26.1 26.1	26.1	7.8 7.8	7.8	28.0 28.4	28.2	72.8 73.8	73.3	5.1 5.2	5.2	5.2	8.5 8.9	8.7		5.7 5.7	5.7	

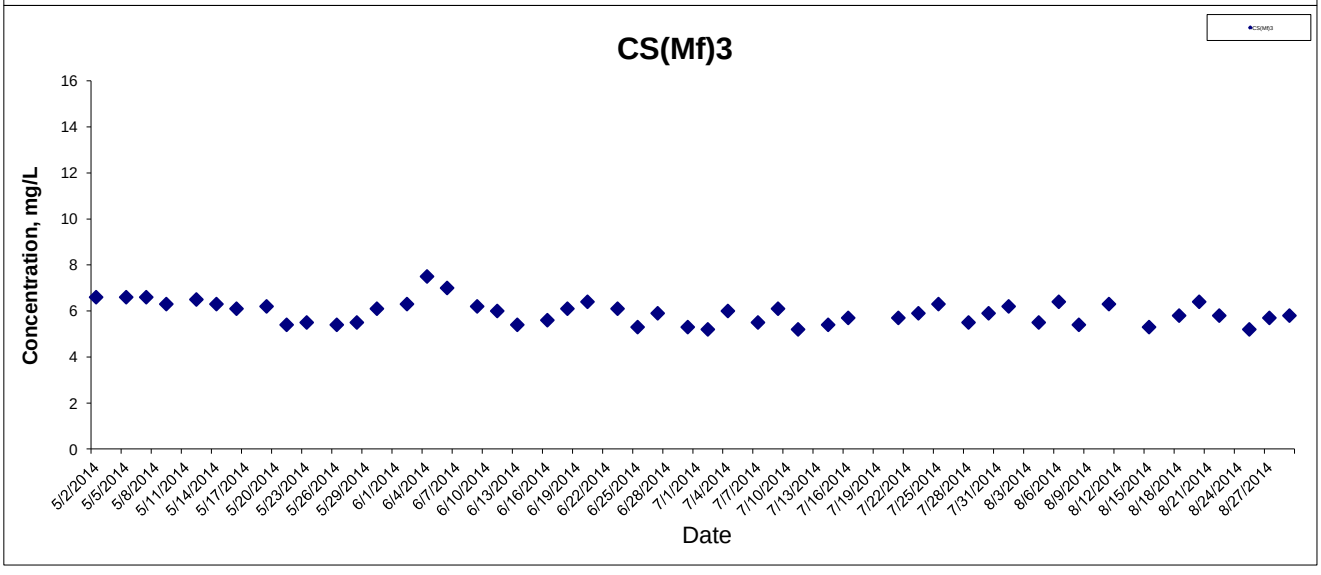
Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

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.

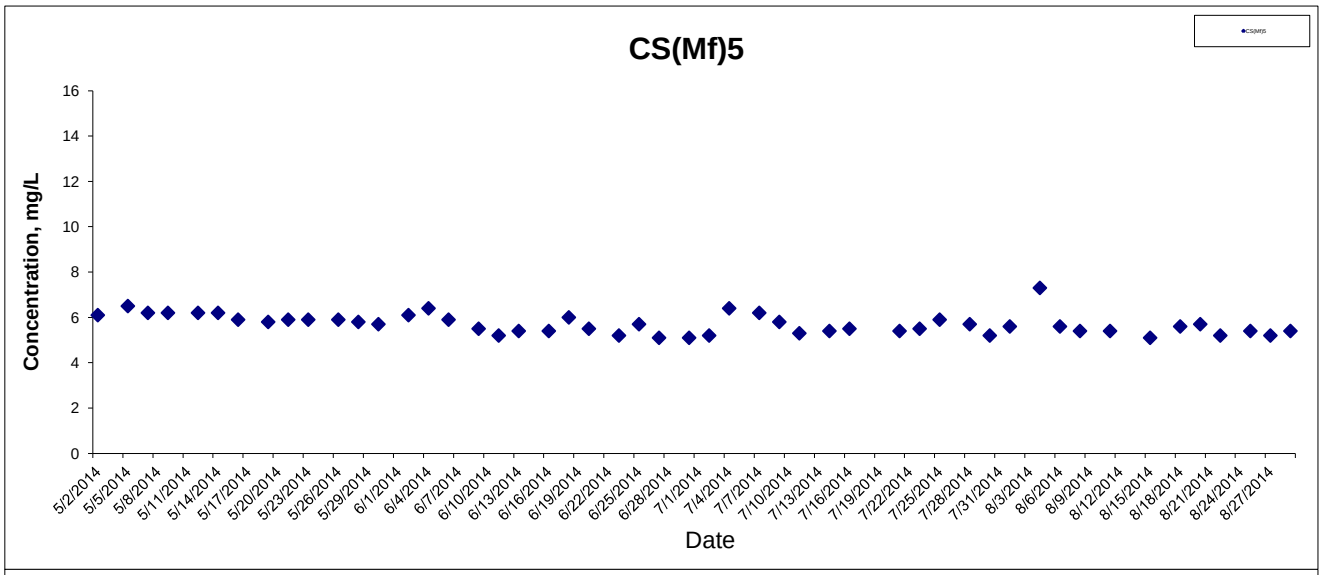
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

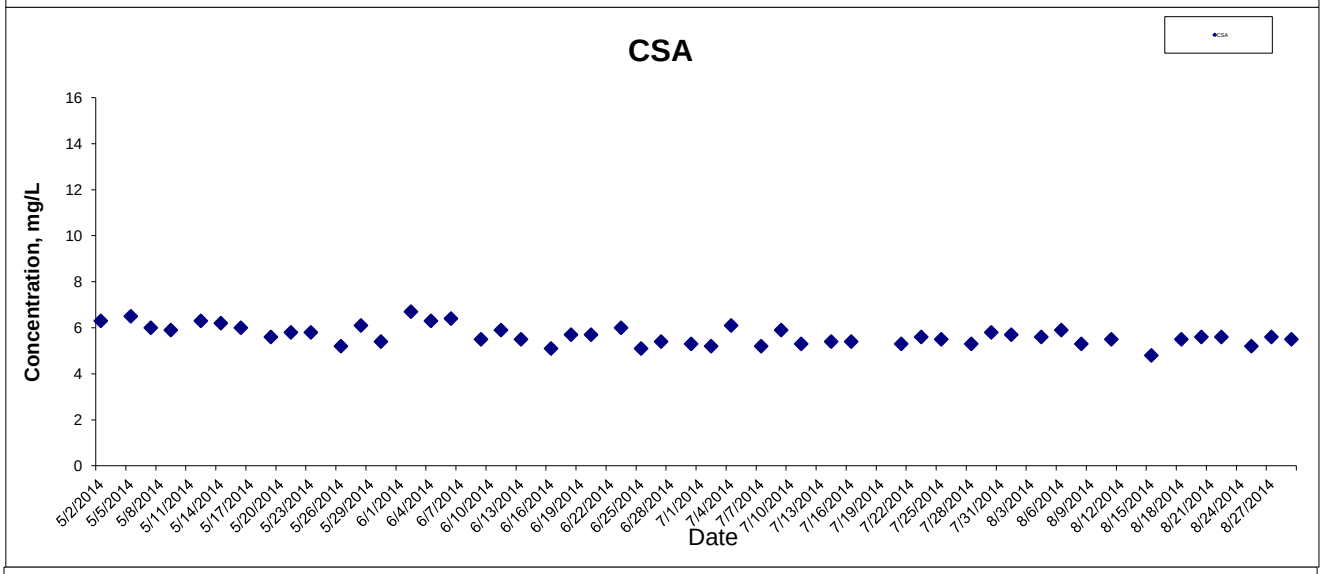


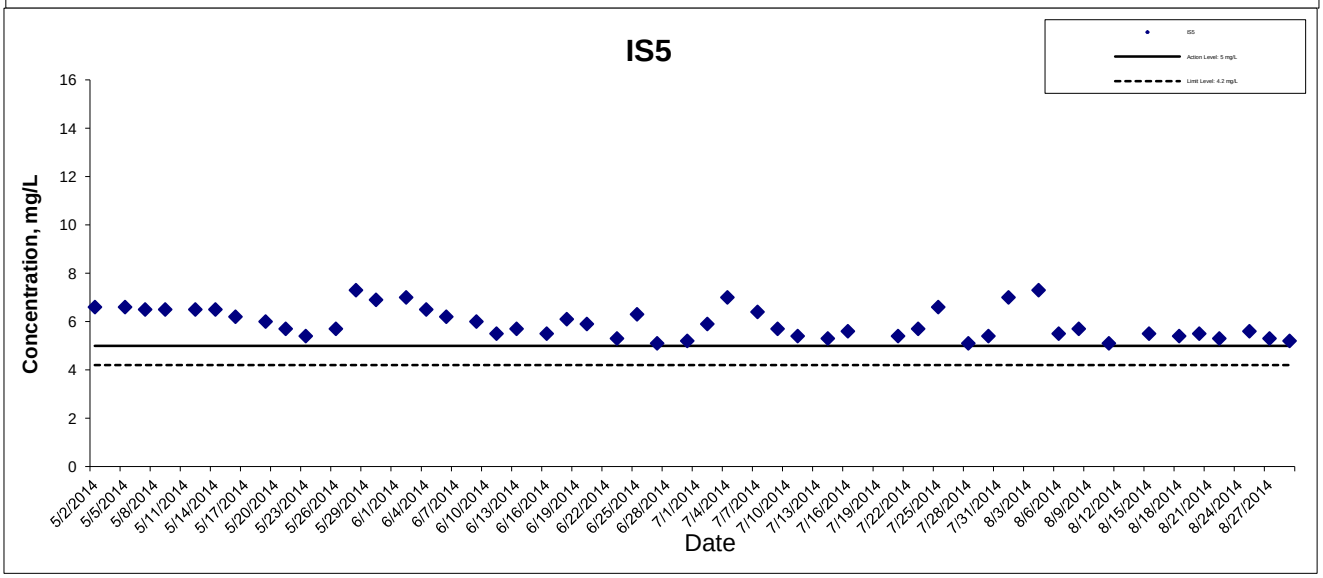




Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide







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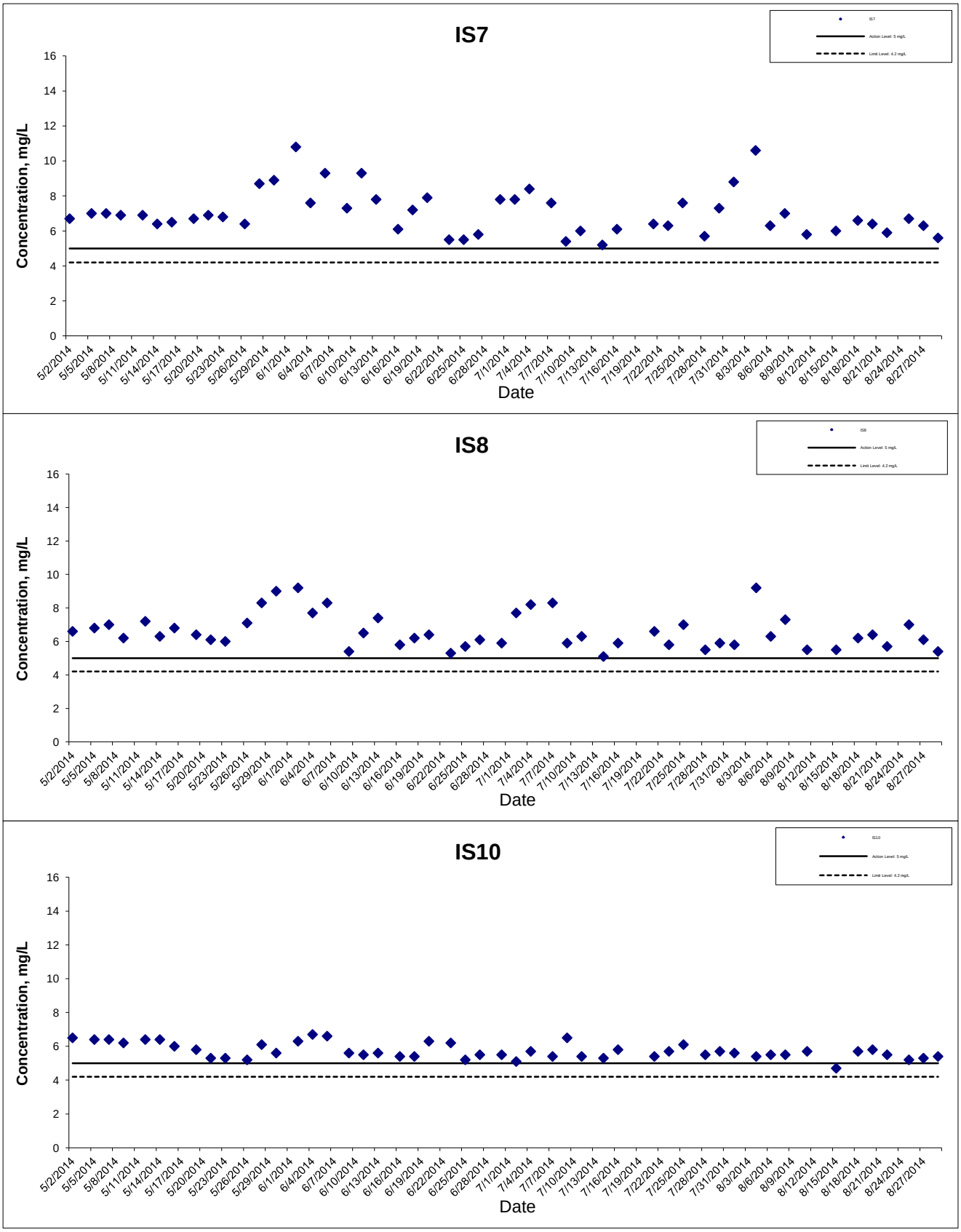
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

Graphical Presentation of Impact Water Quality Monitoring Results

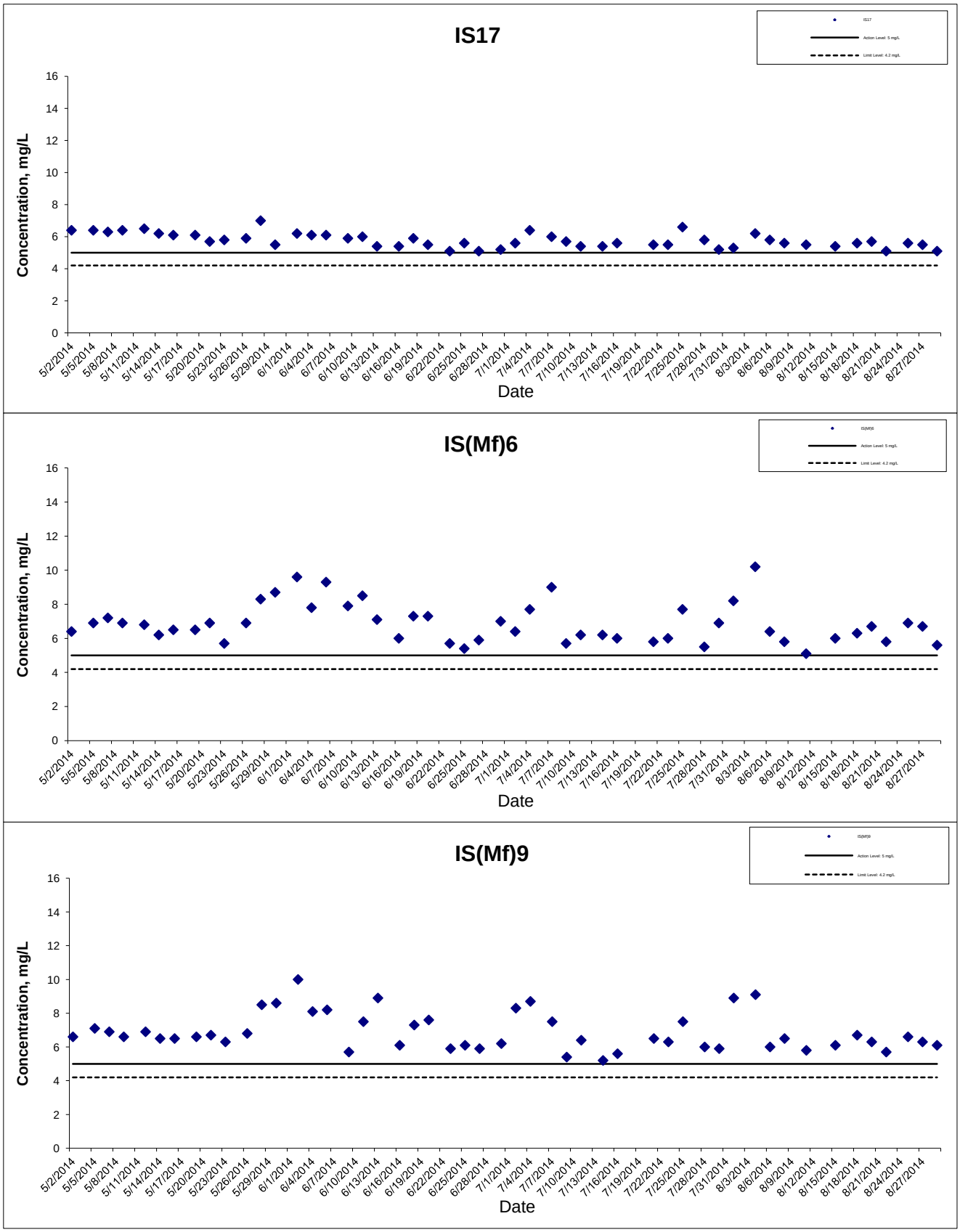
Project No.: 60249820 **Date: Sep 2014**

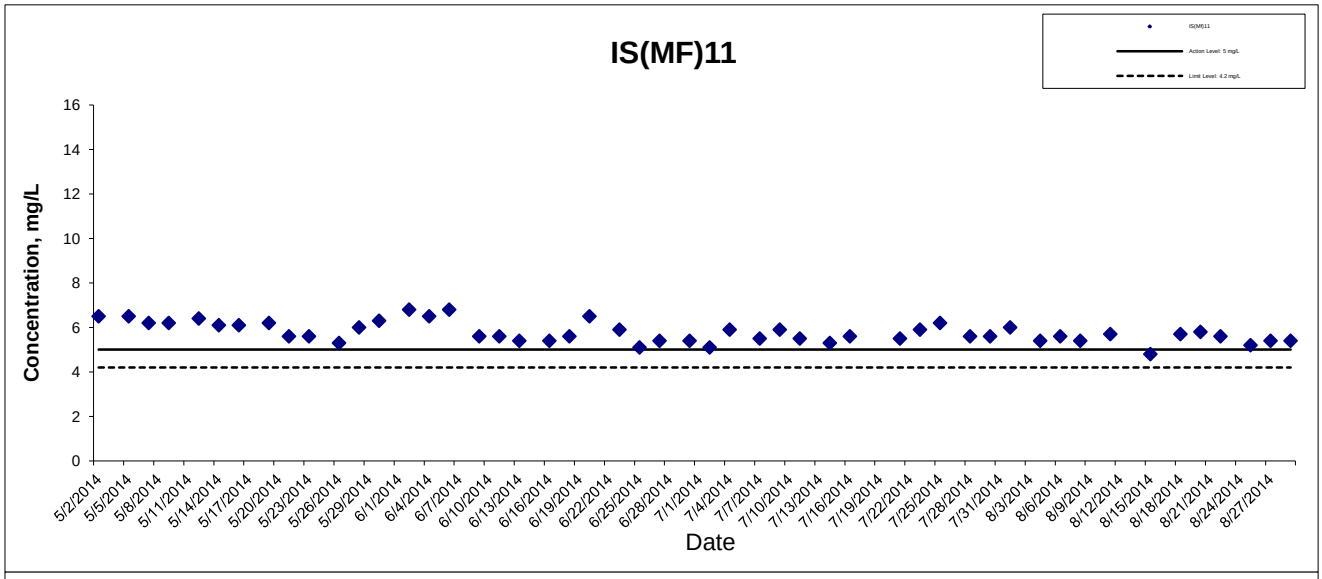
Appendix J

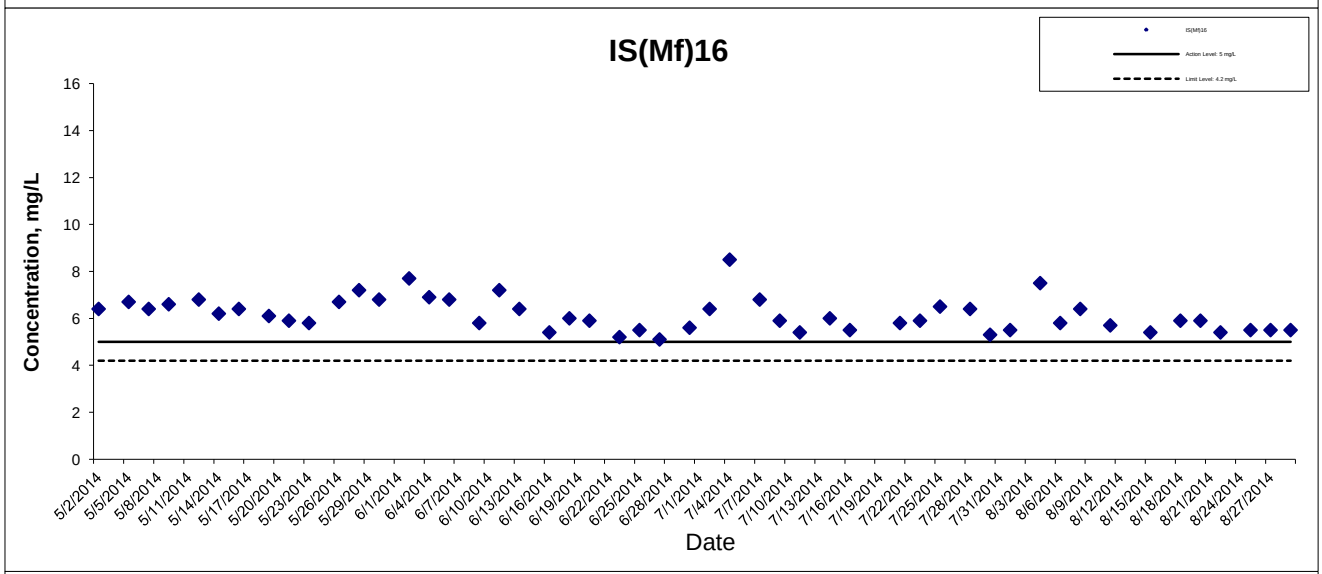
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

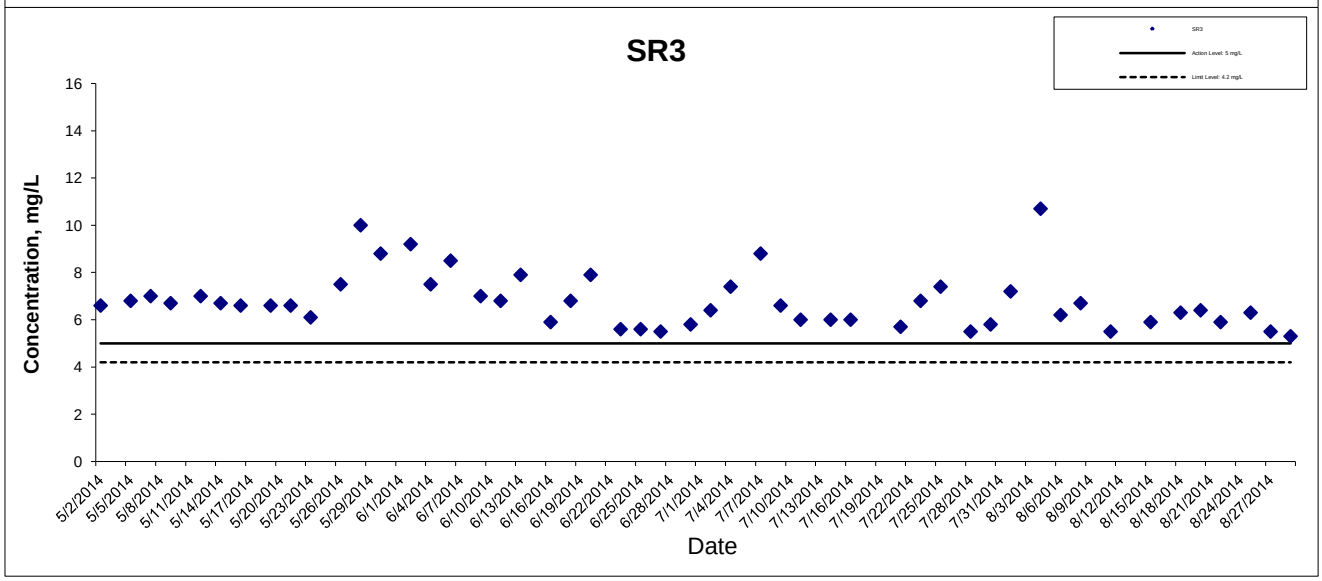


Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide









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HONG KONG BOUNDARY CROSSING FACILITIES
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AECOM

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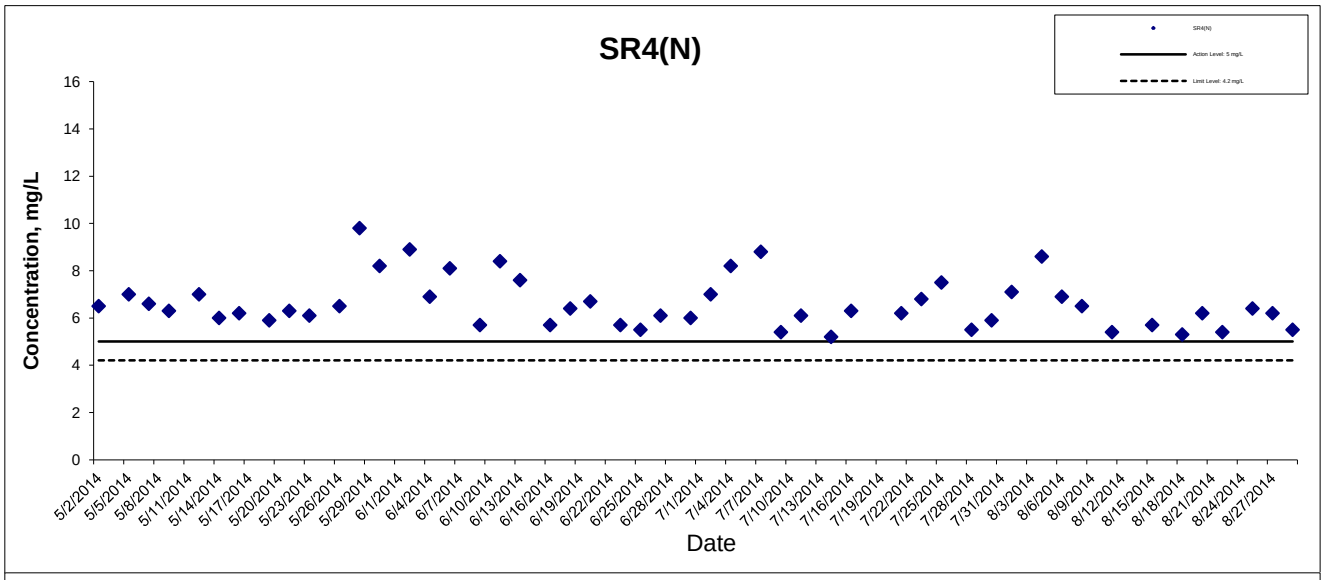

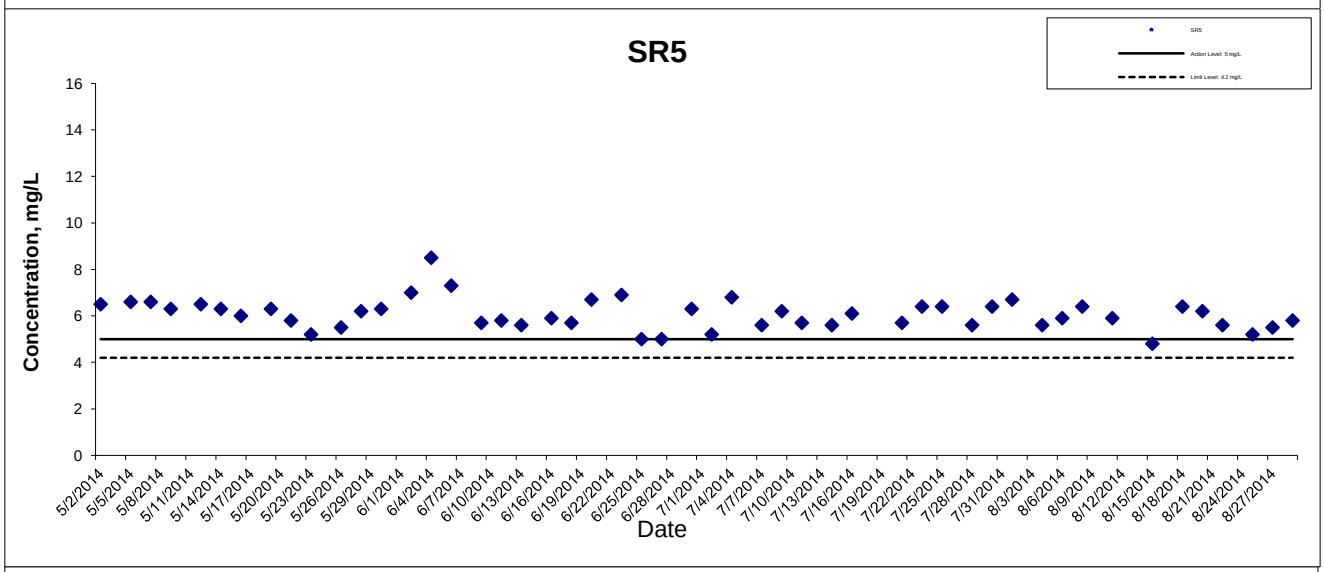

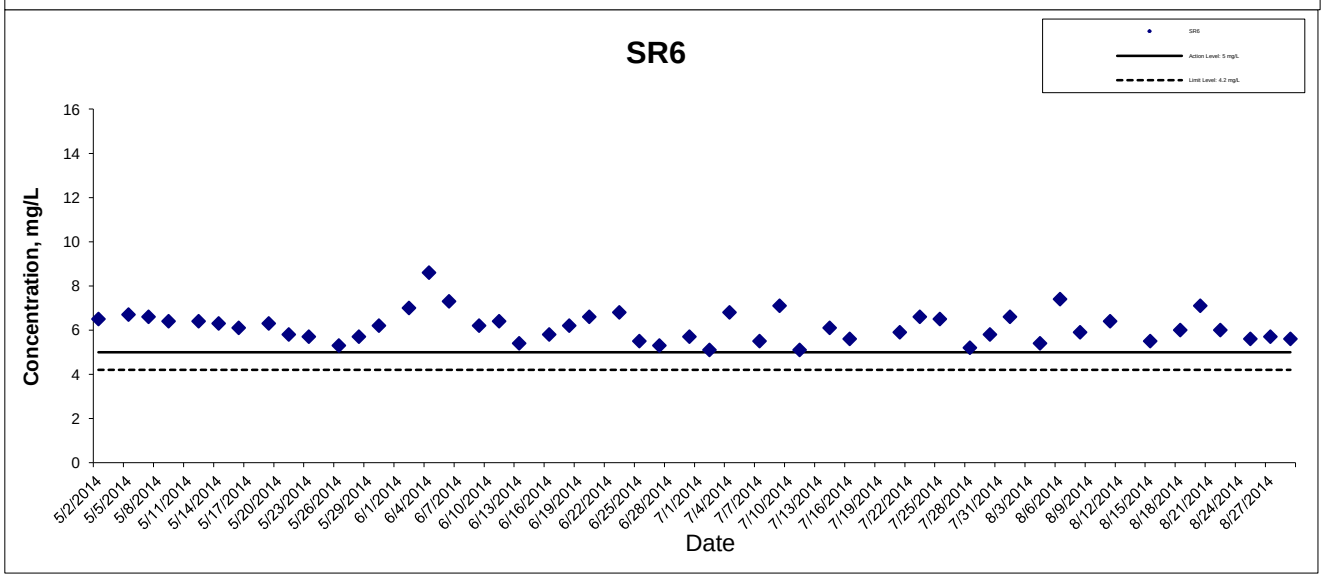

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HONG KONG BOUNDARY CROSSING FACILITIES
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AECOM

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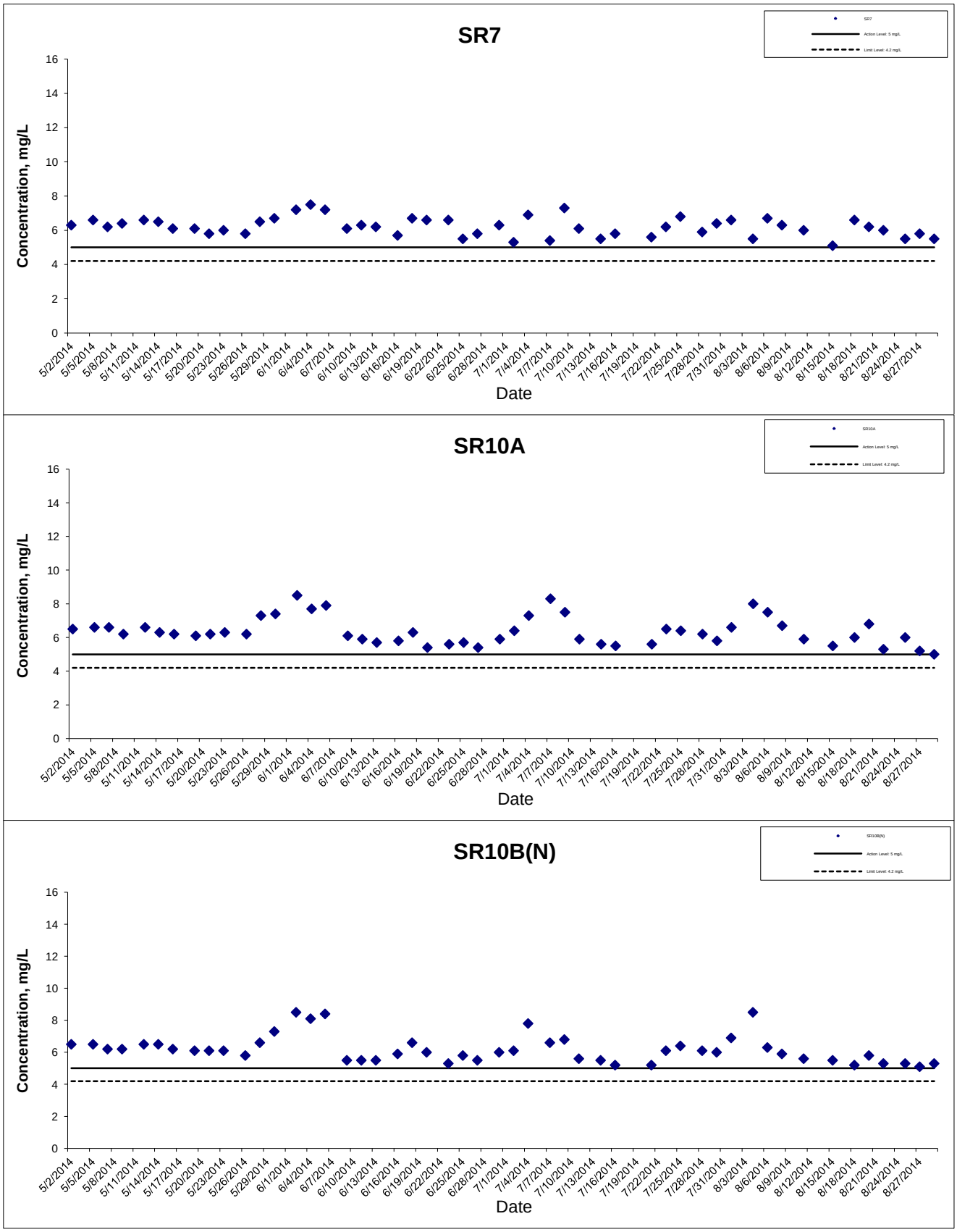
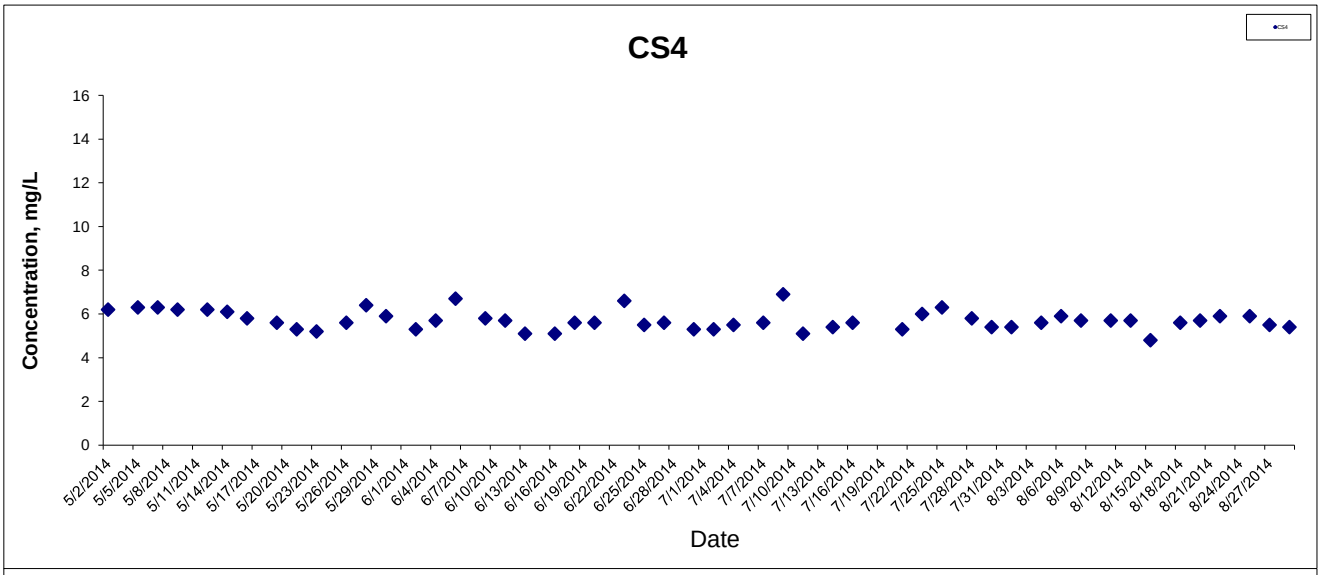
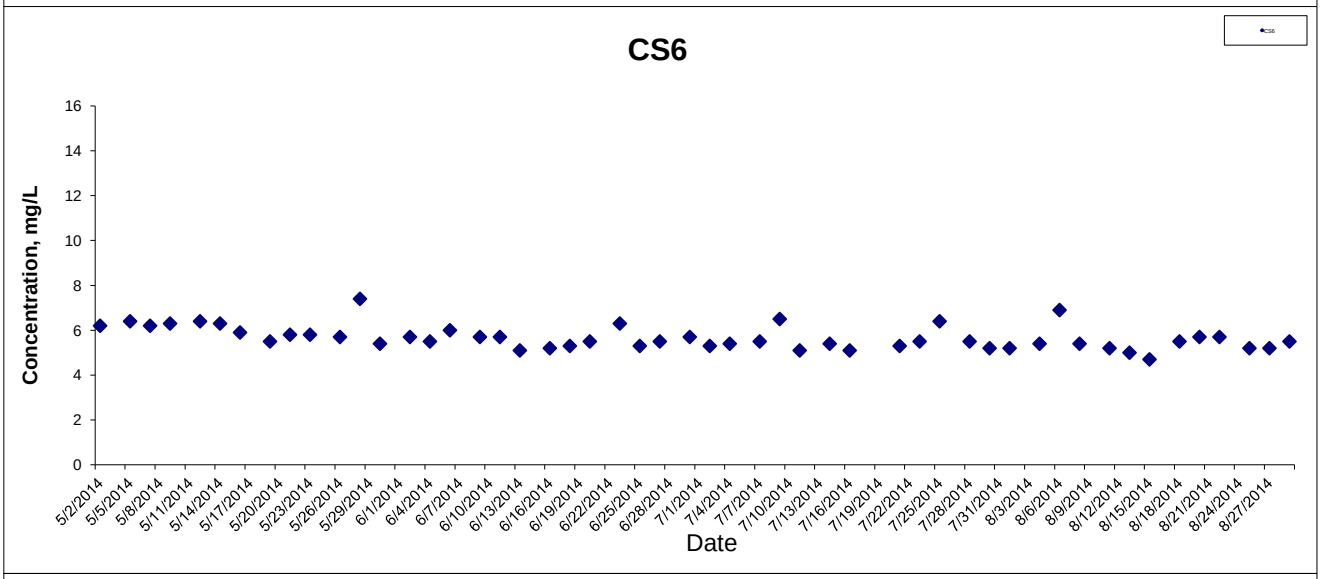
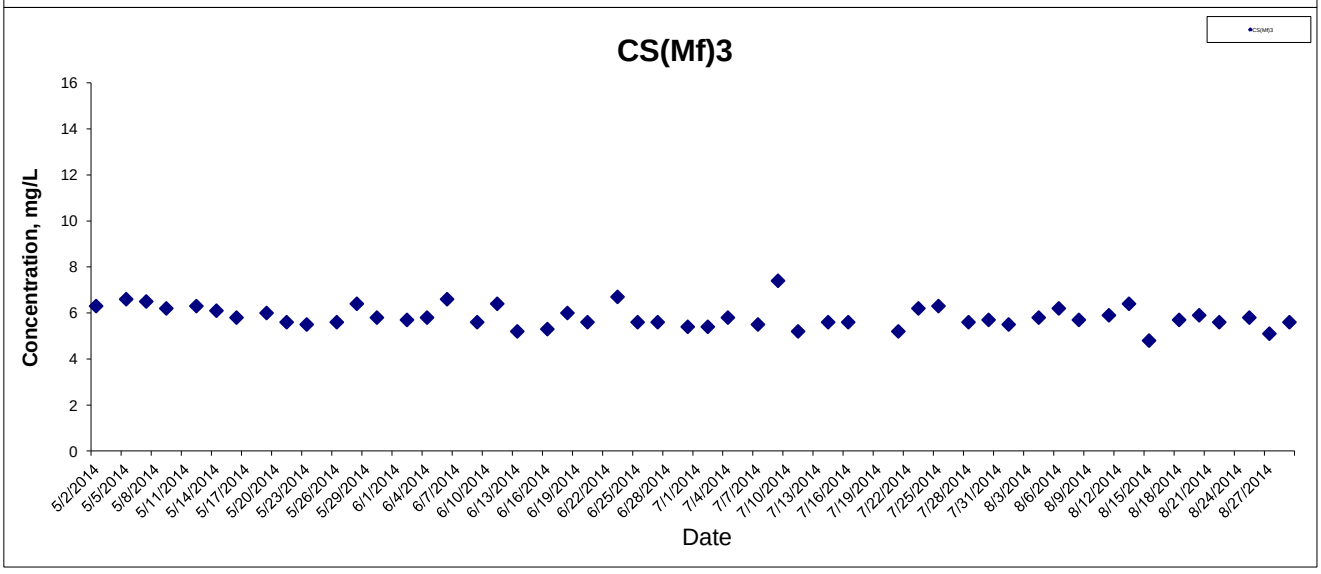


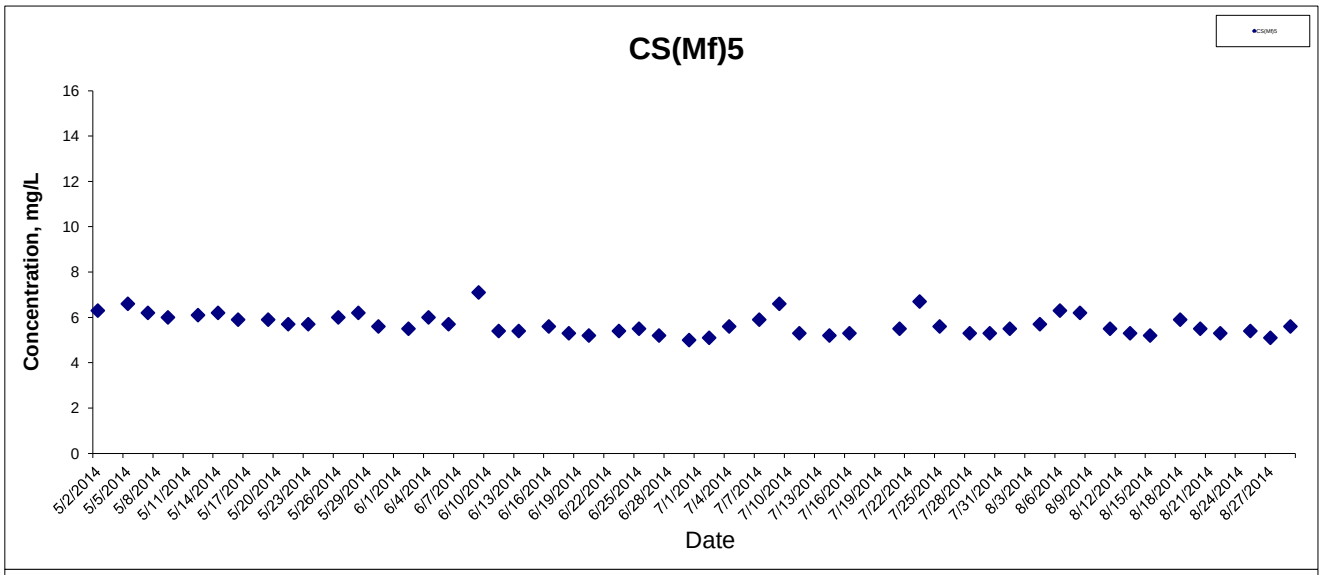
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

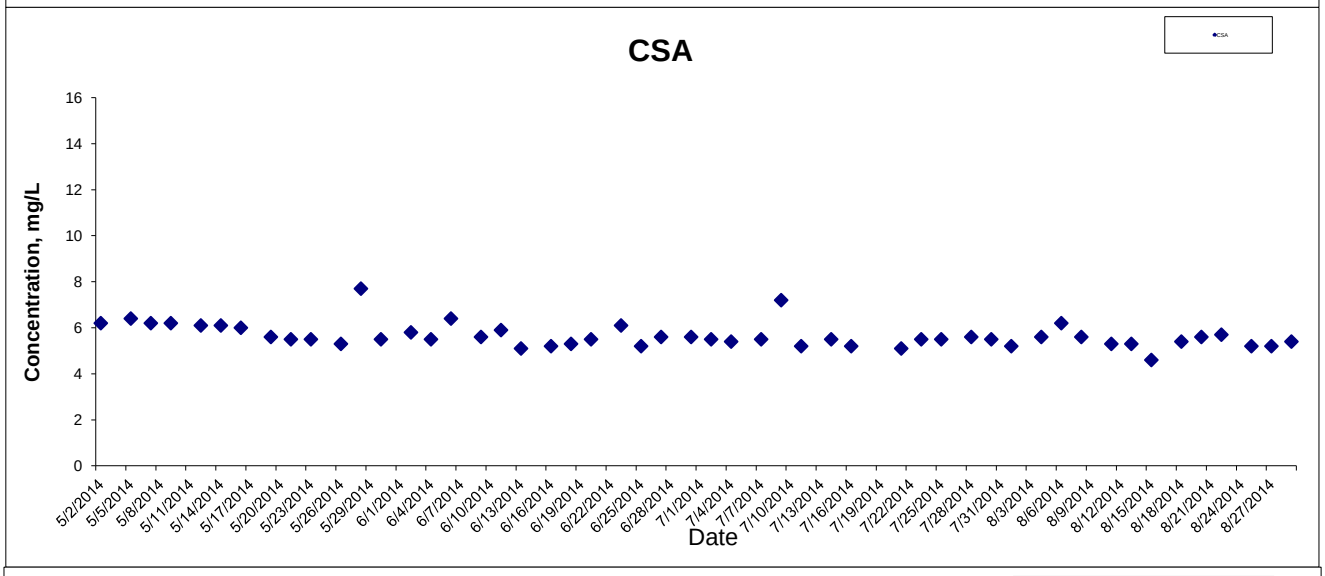


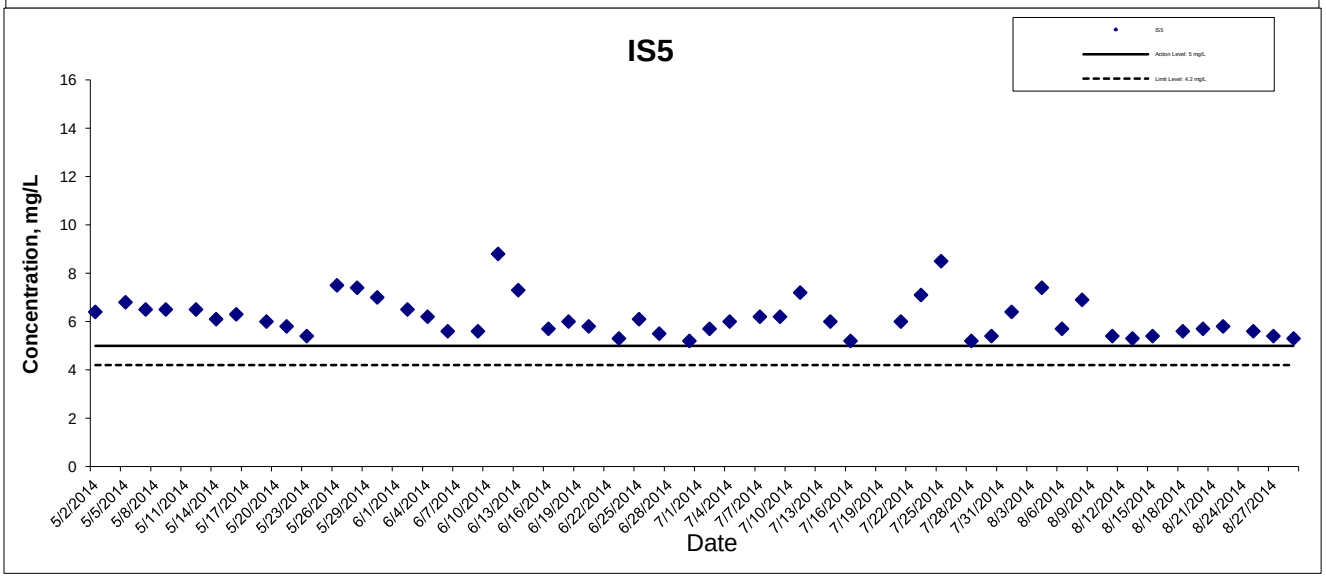




Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide







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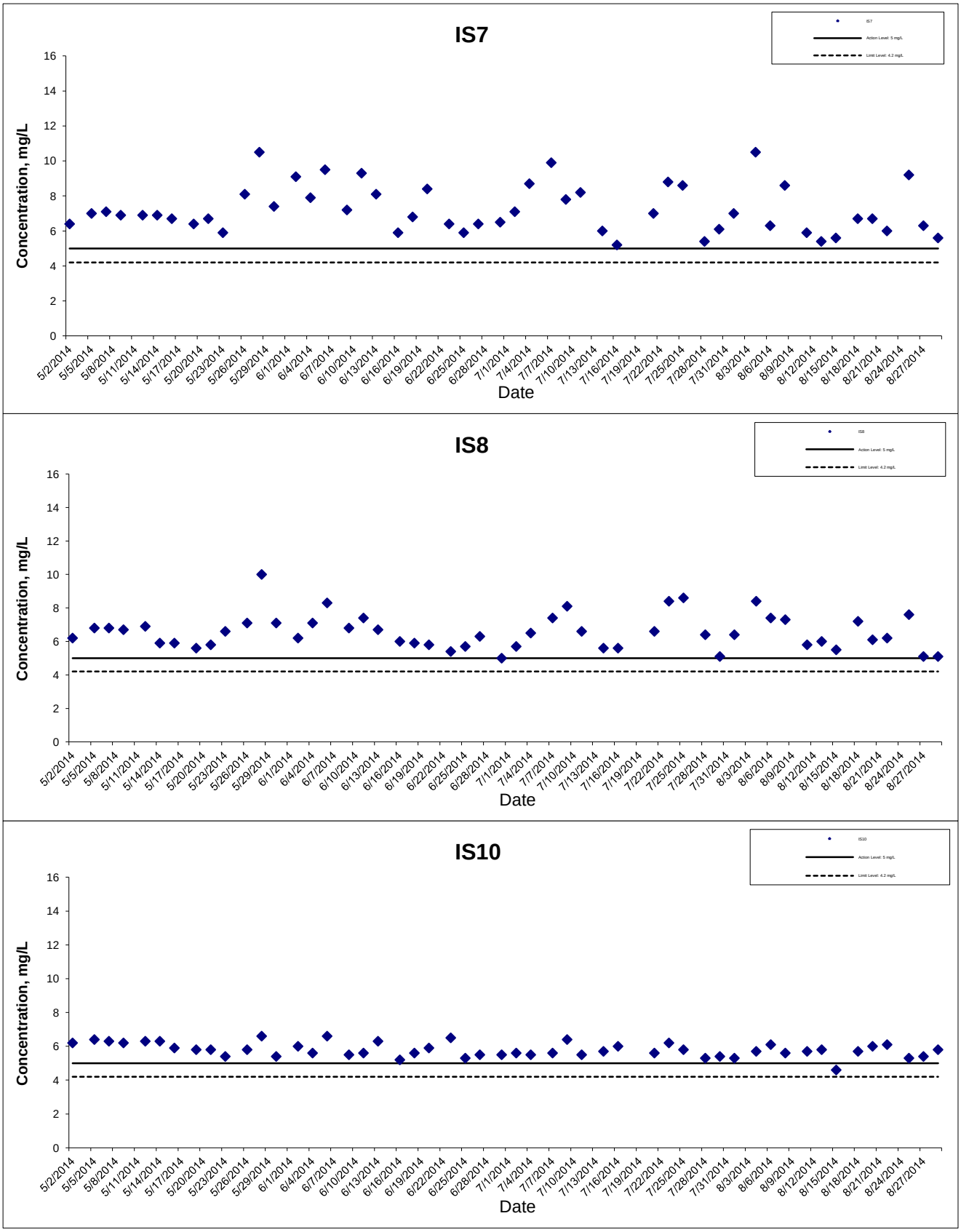
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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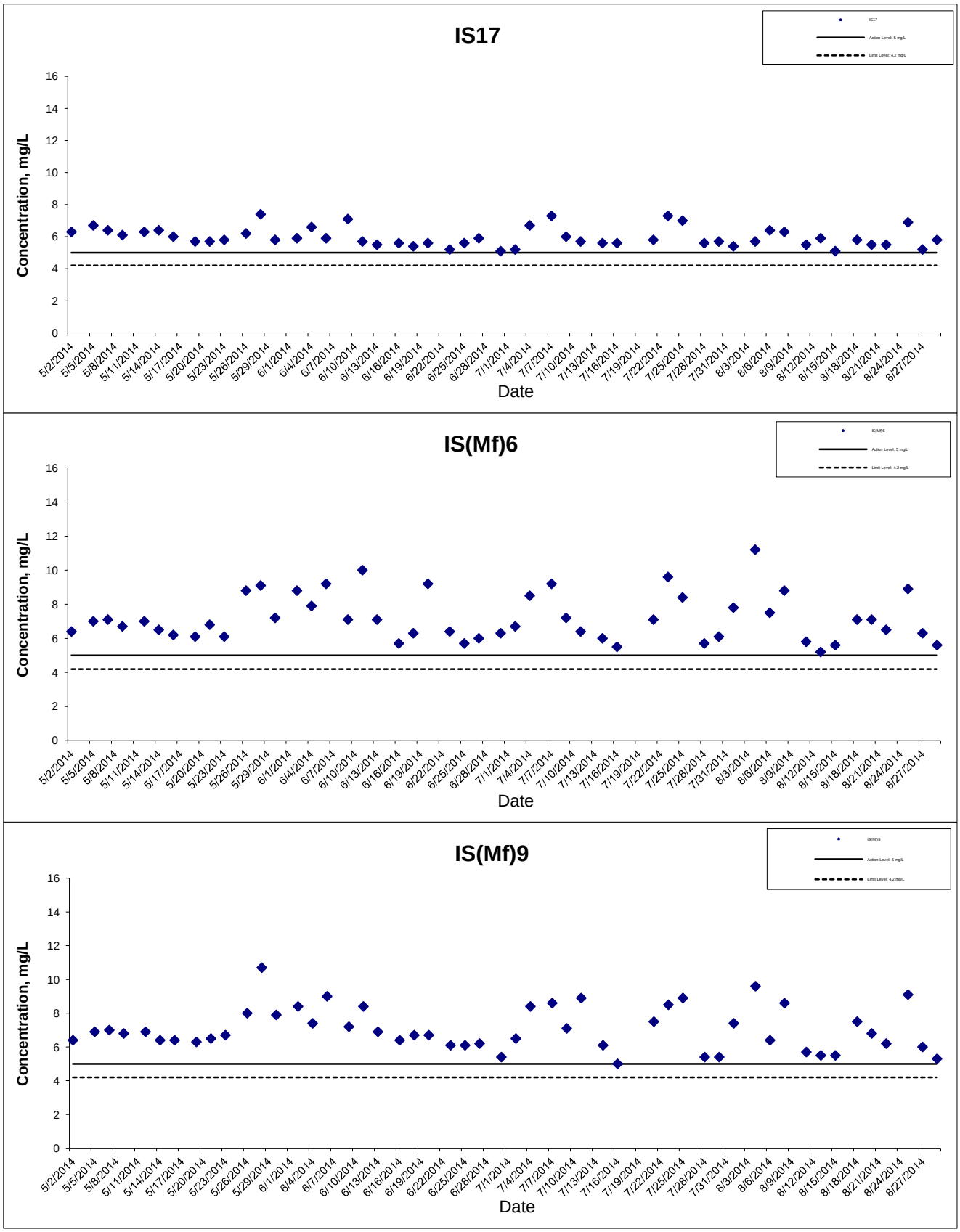
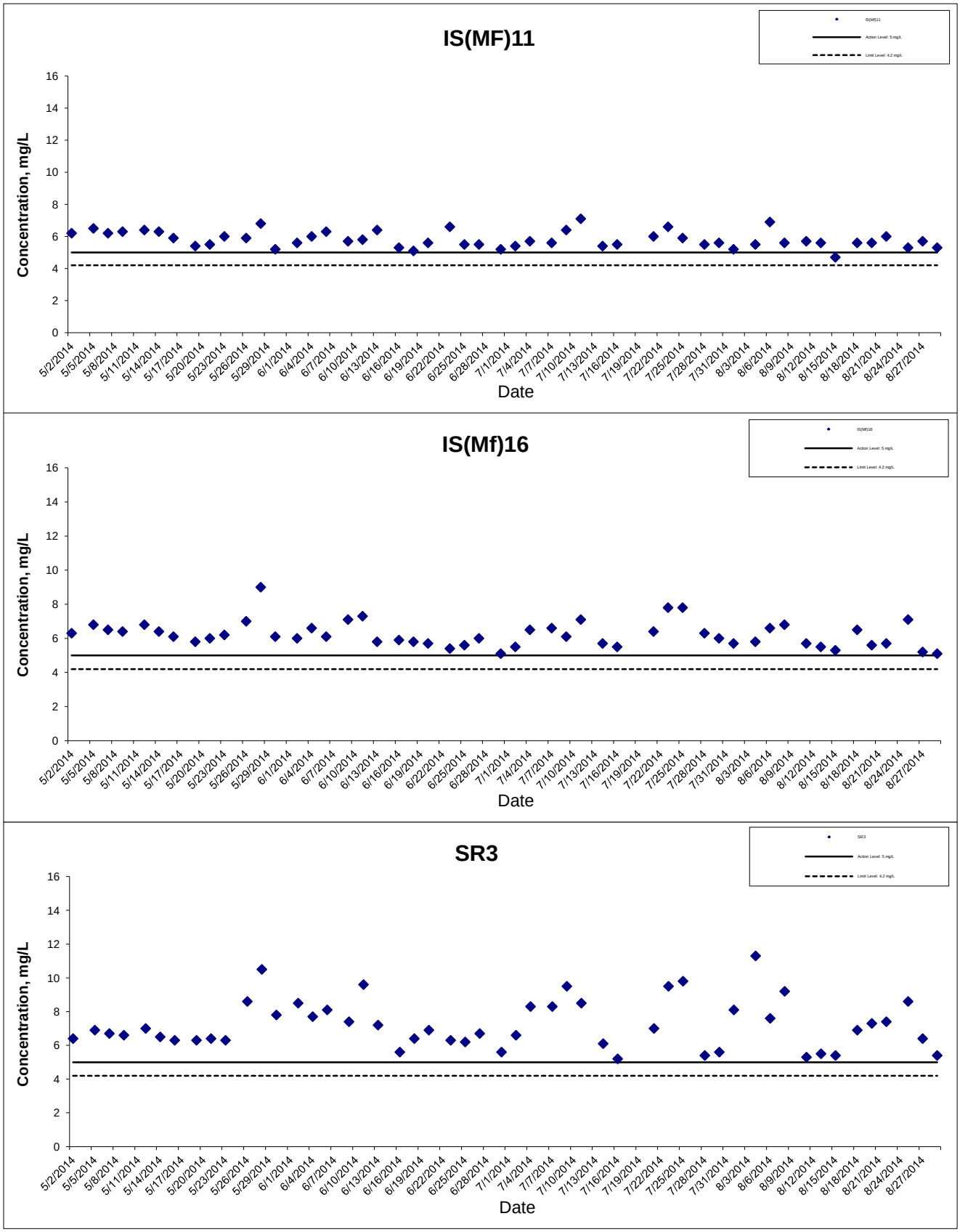
Appendix J

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



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



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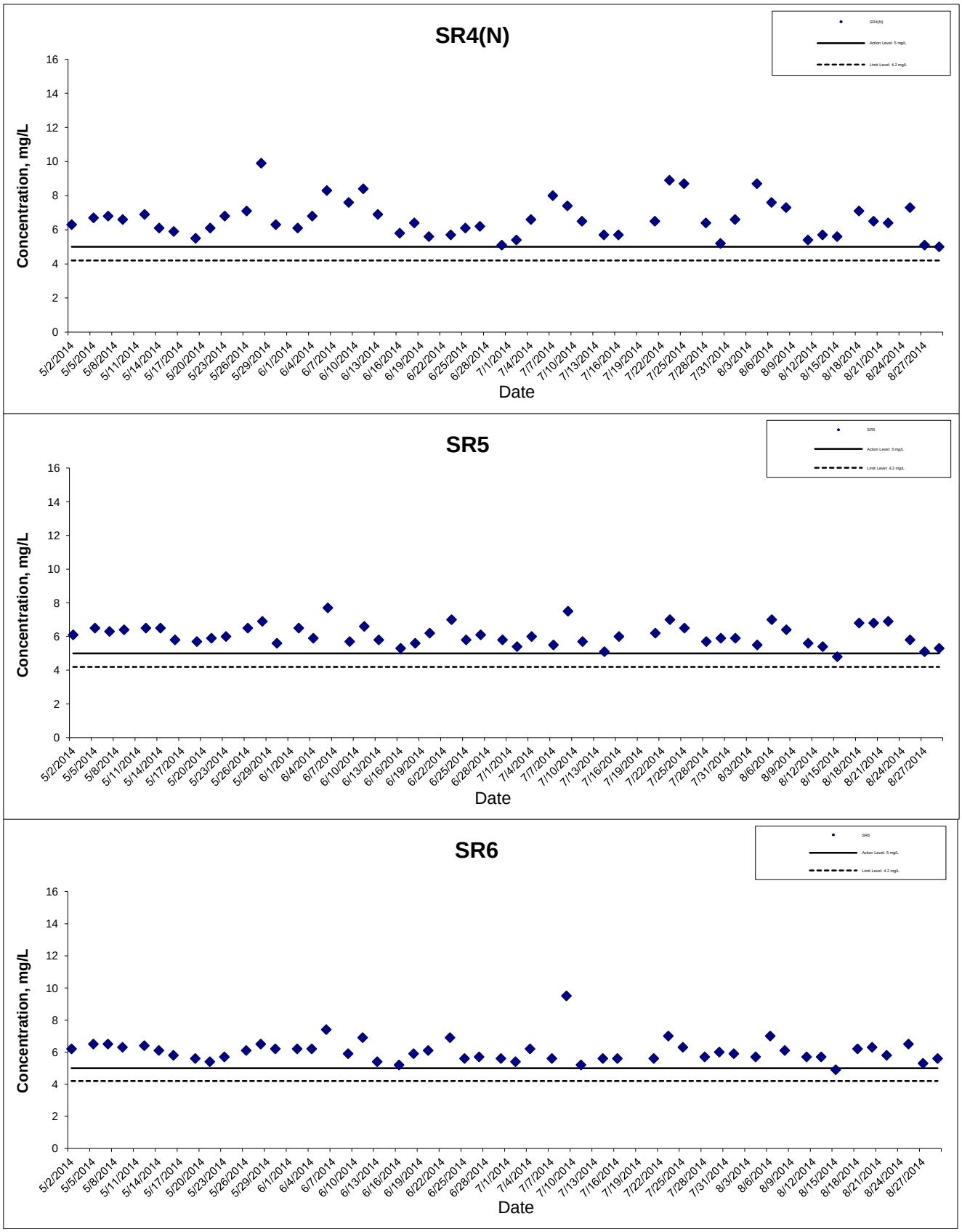

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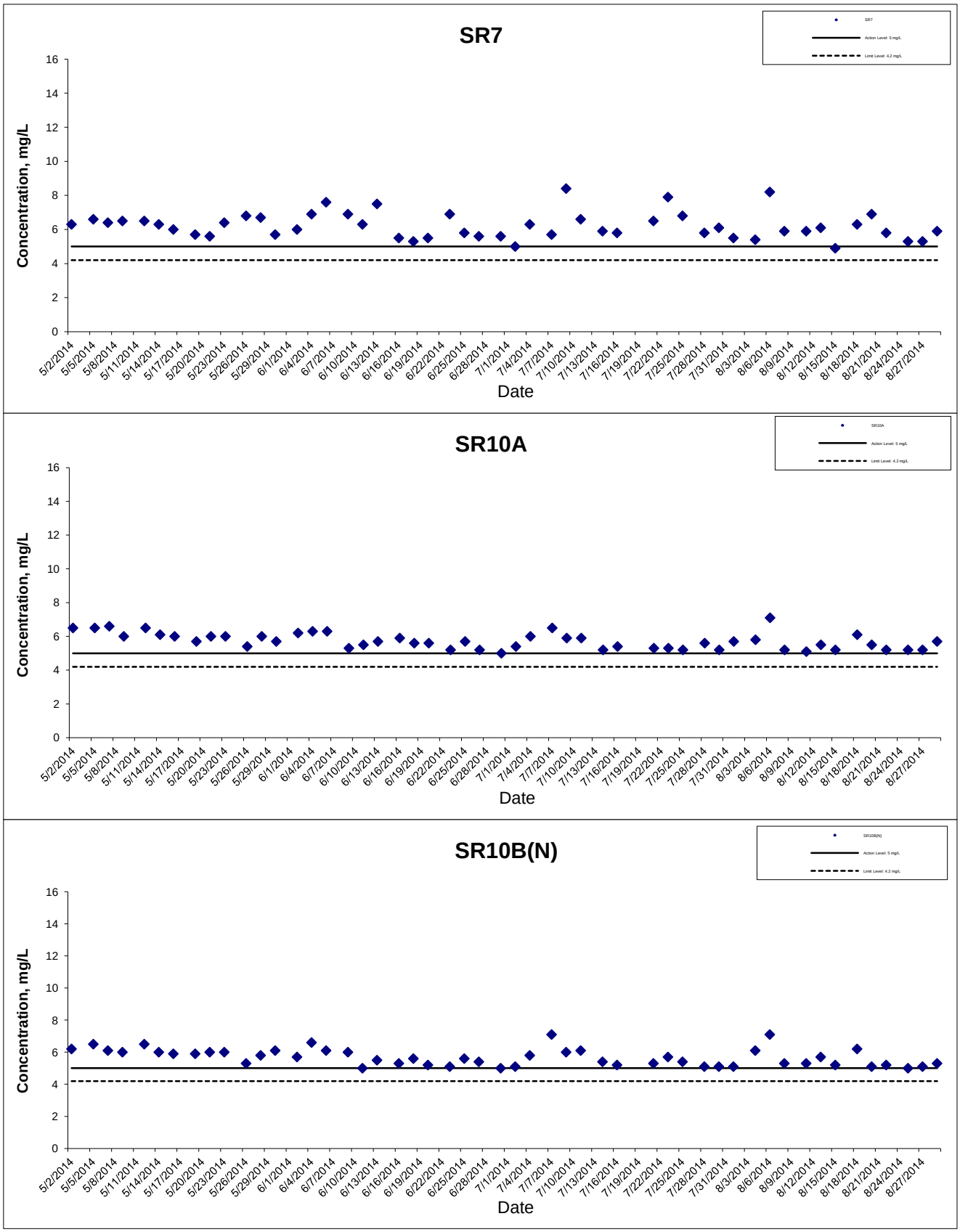
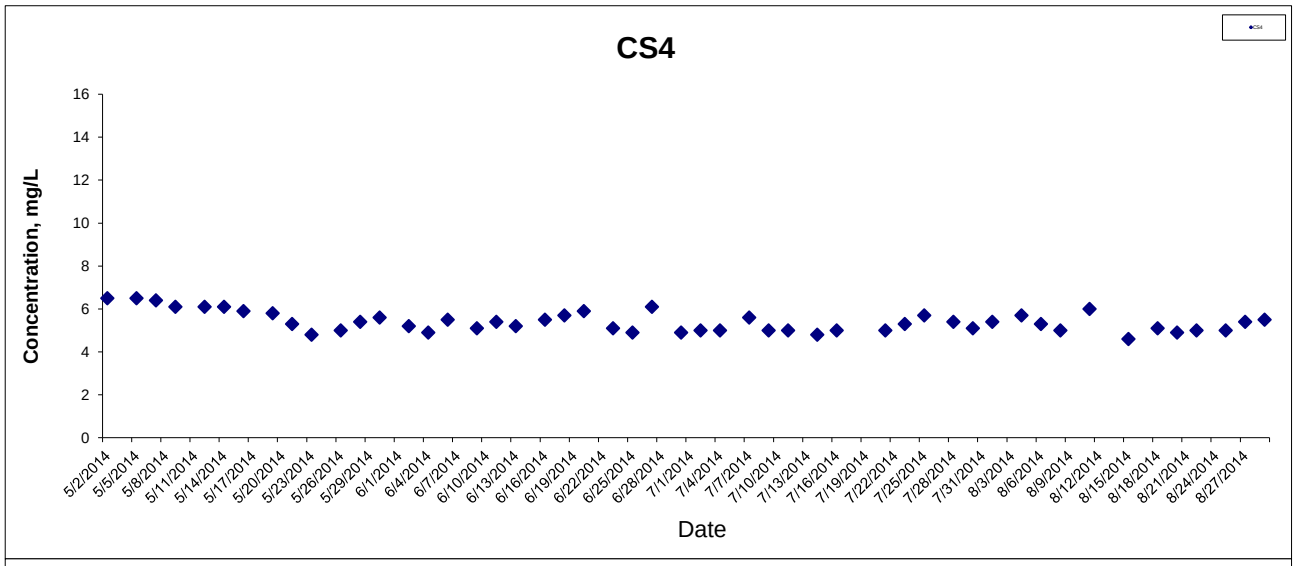
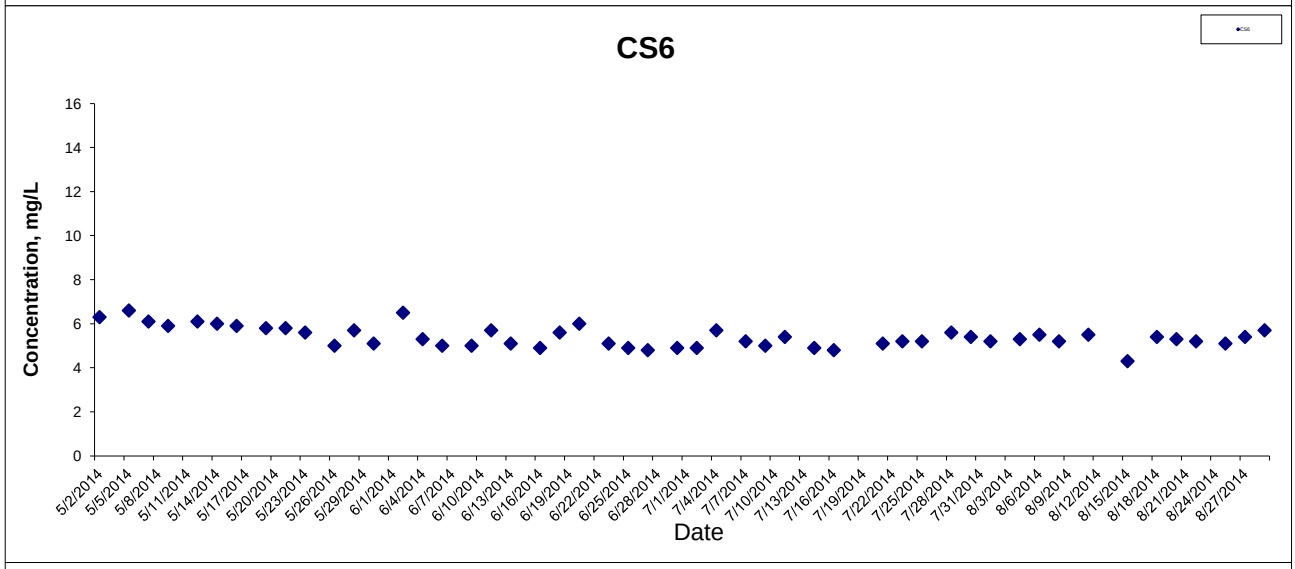
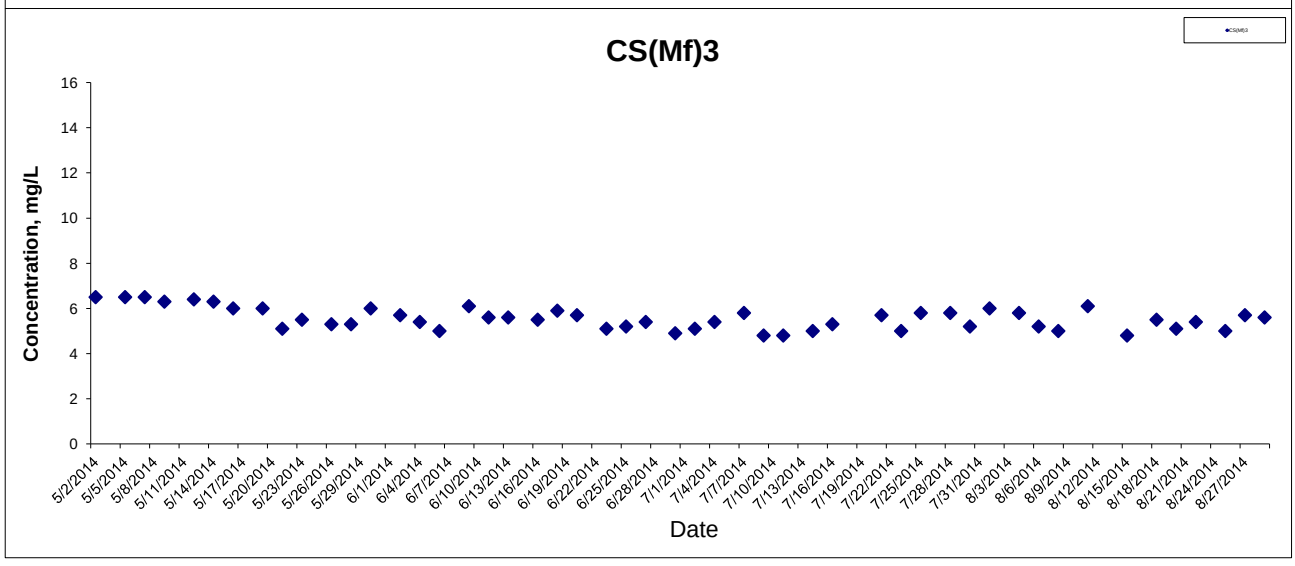


Dissolved Oxygen (Bottom) at Mid-Ebb Tide







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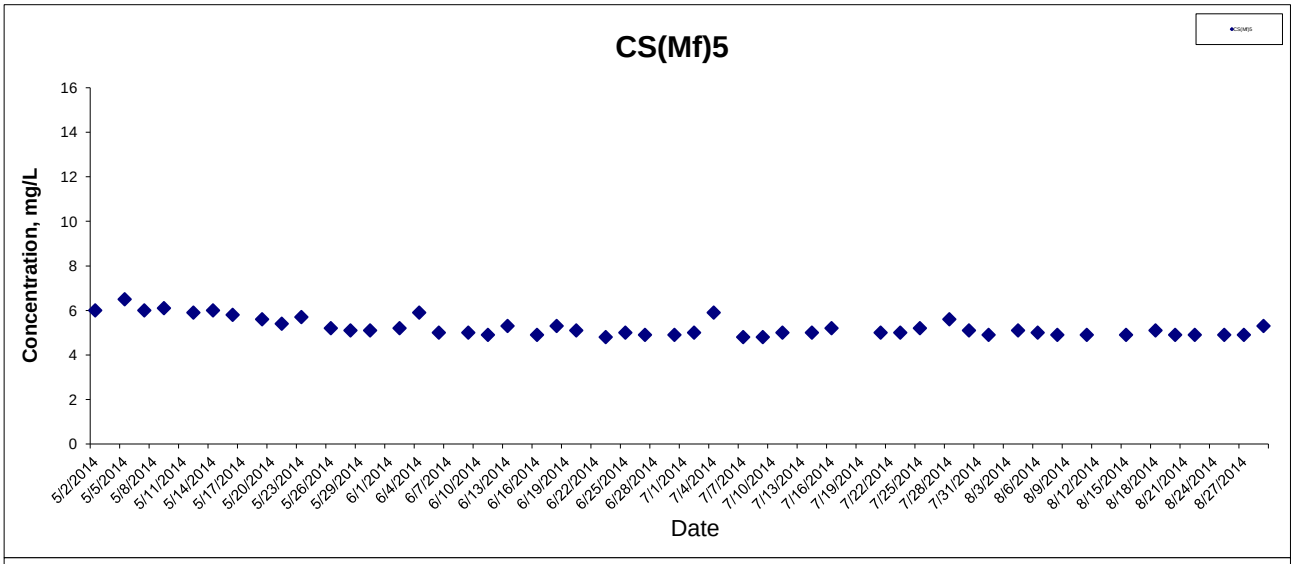
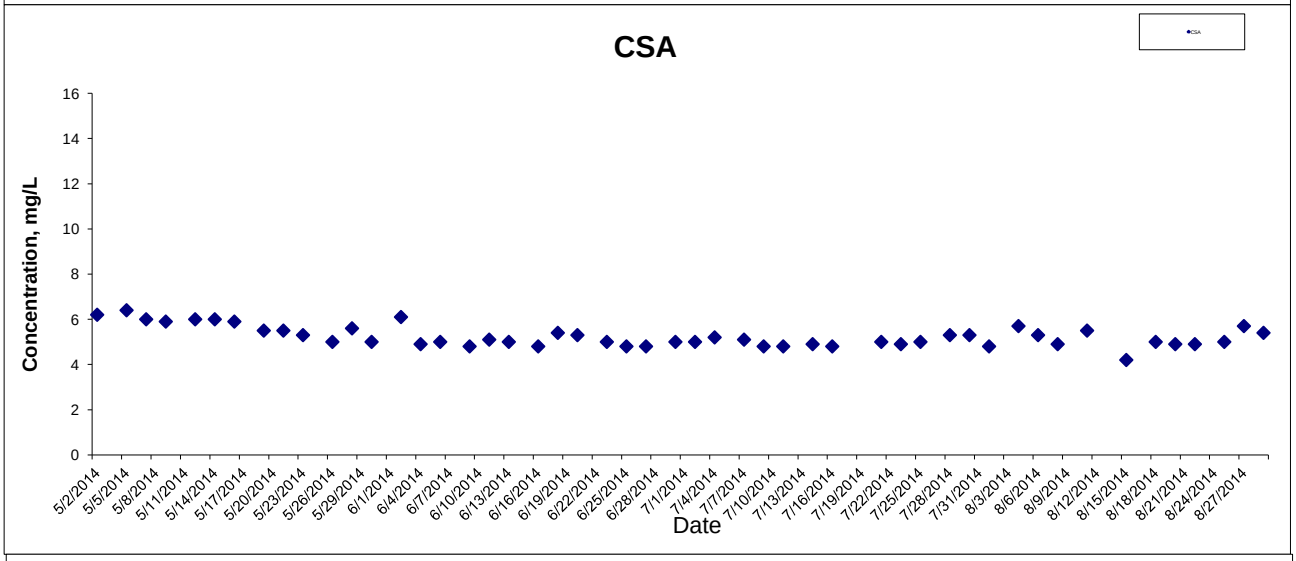
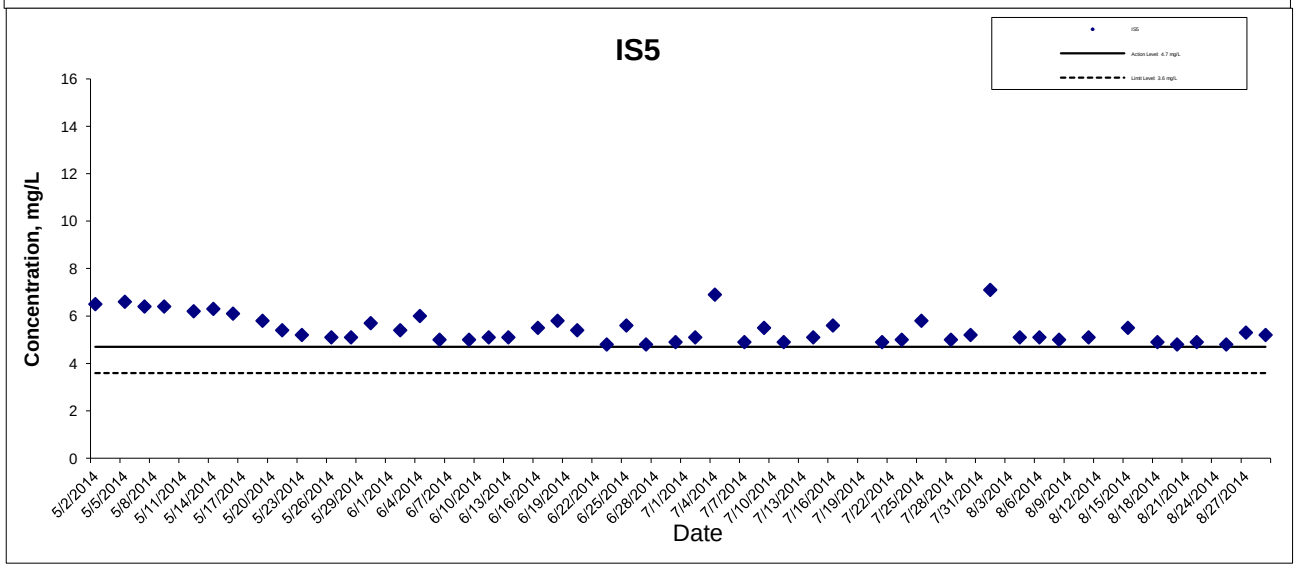
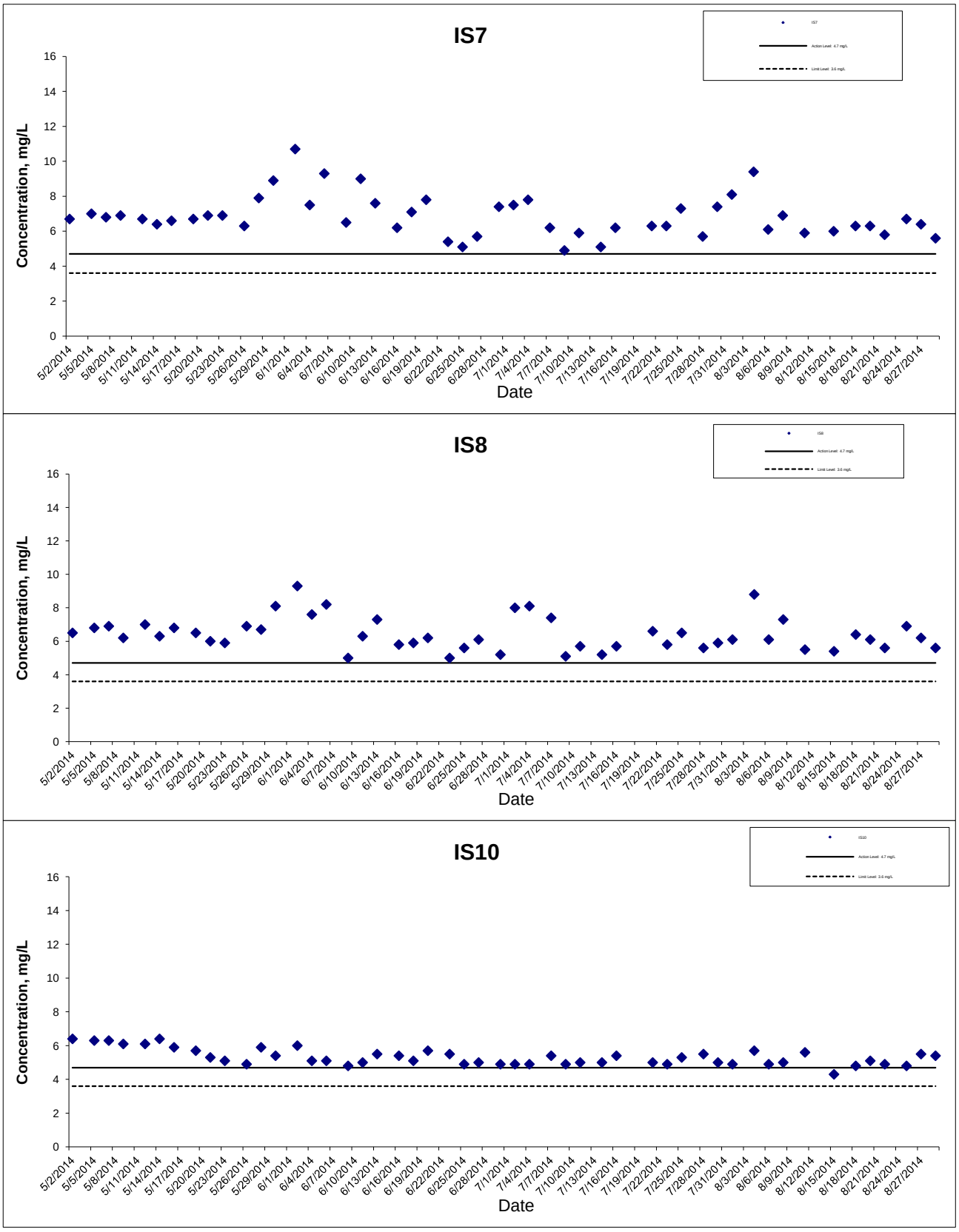


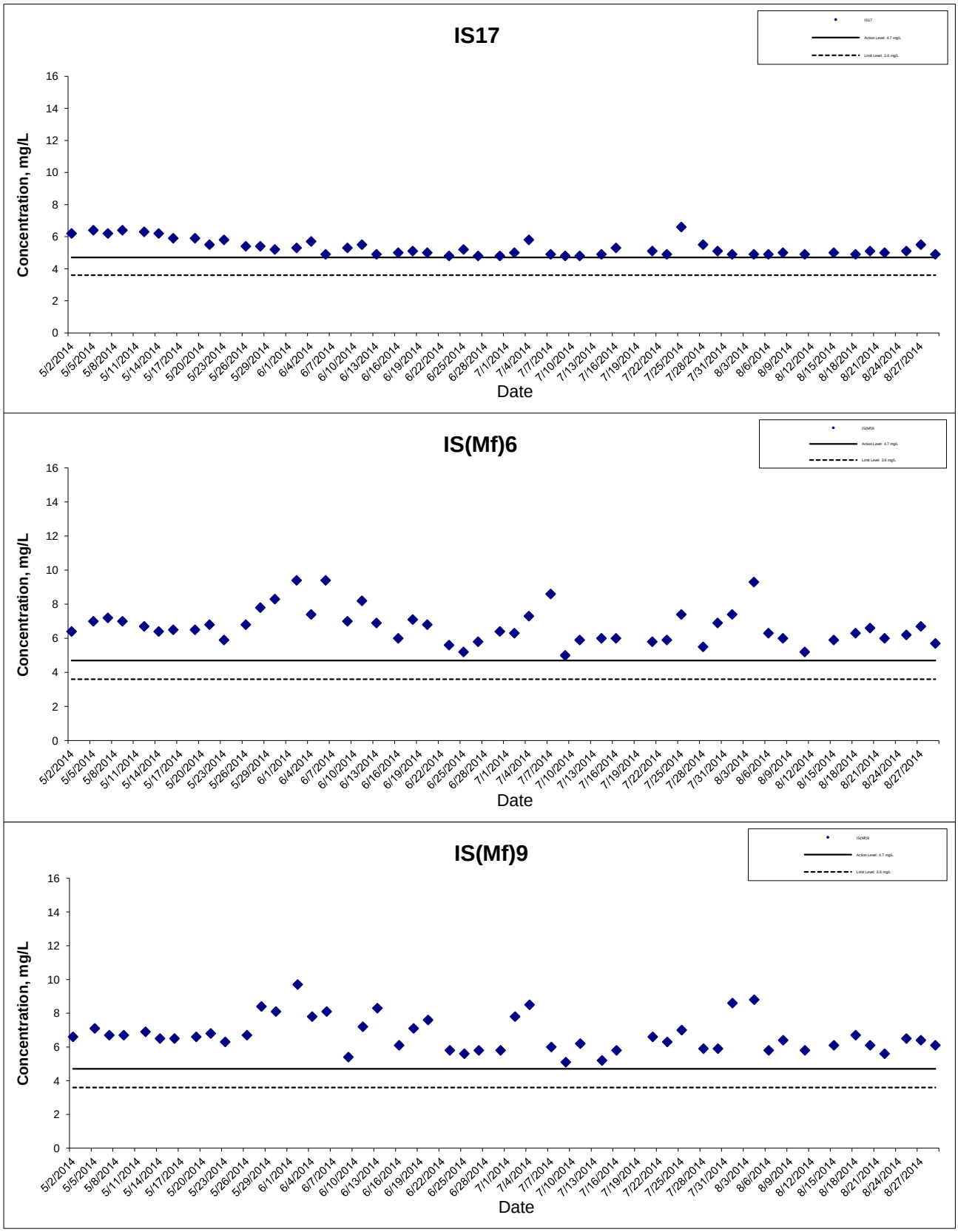




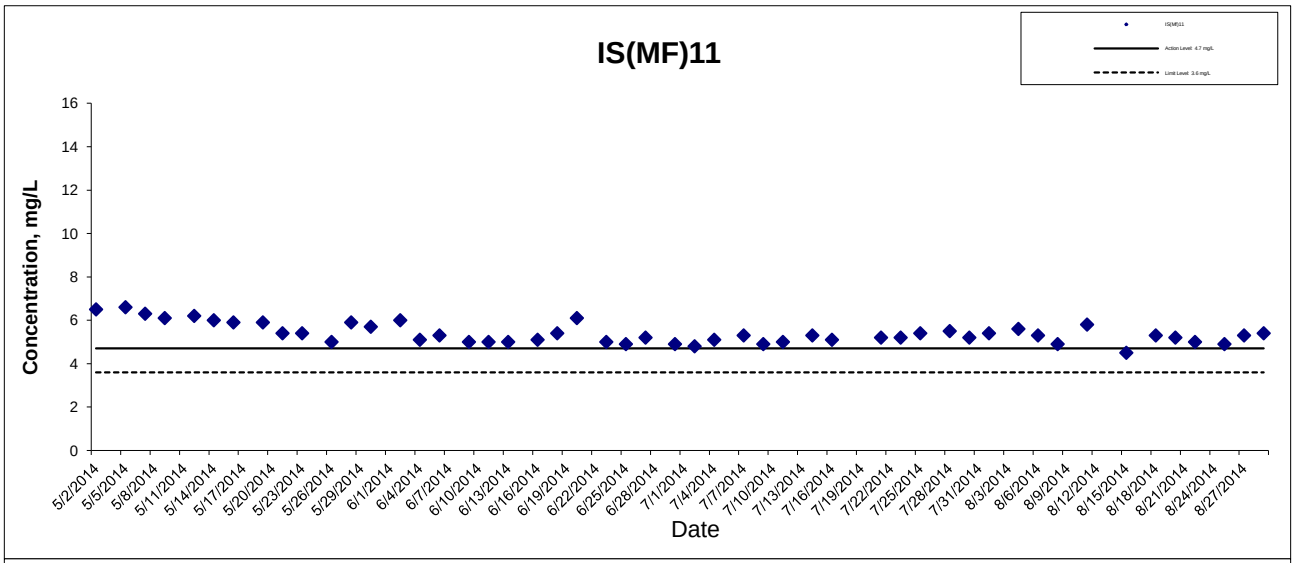
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

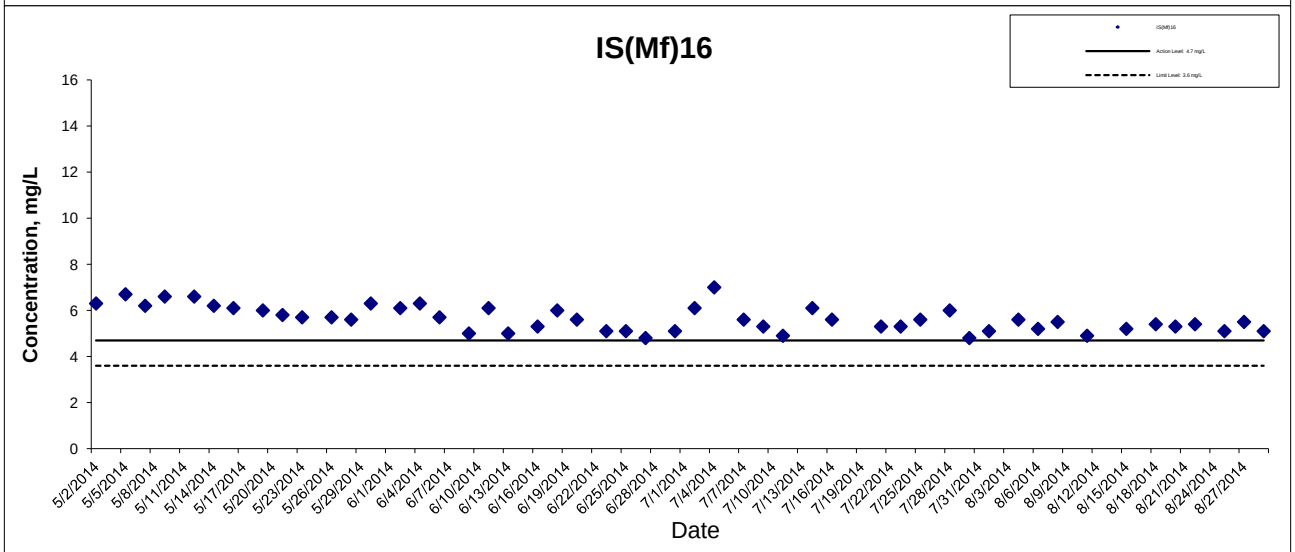


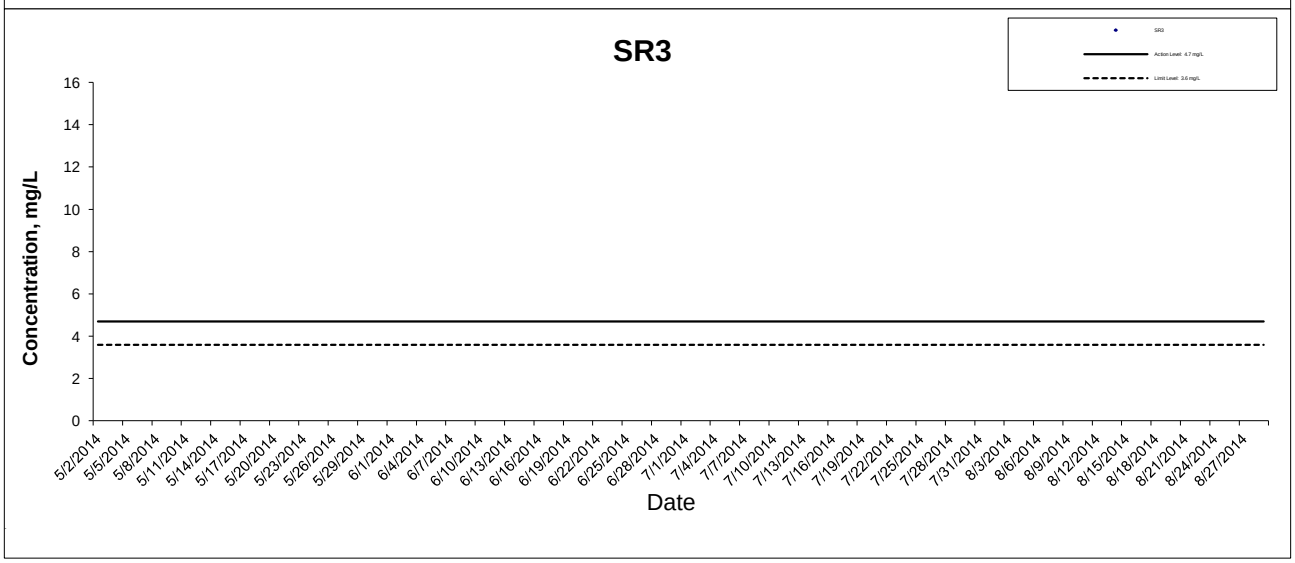
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



Dissolved Oxygen (Bottom) at Mid-Ebb Tide







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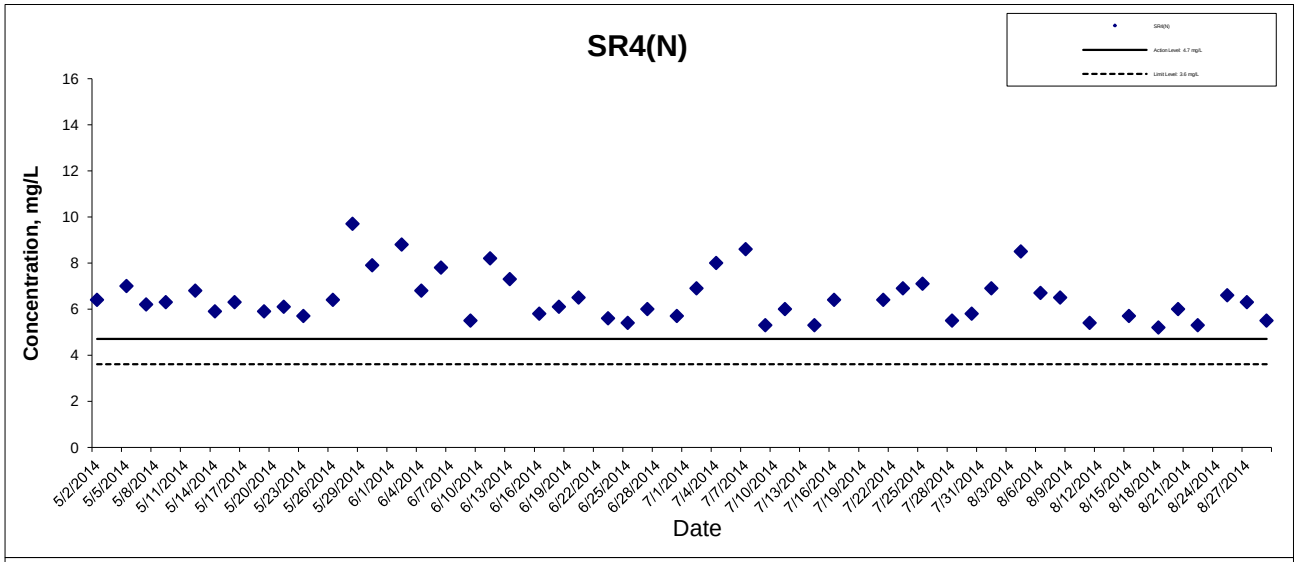

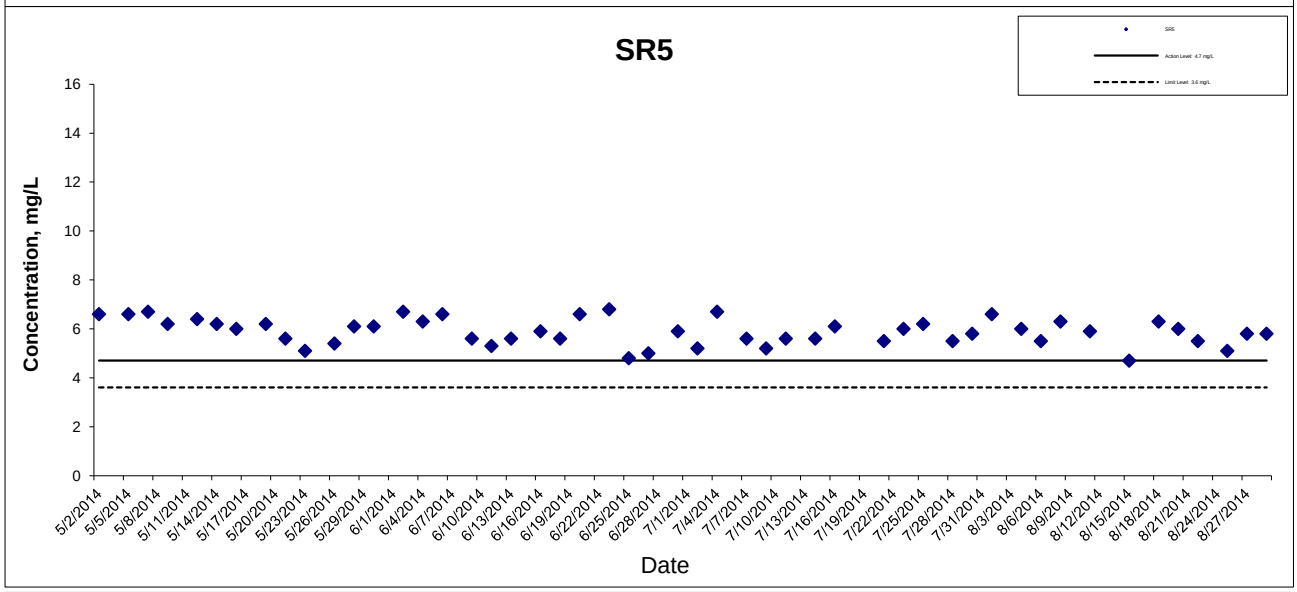

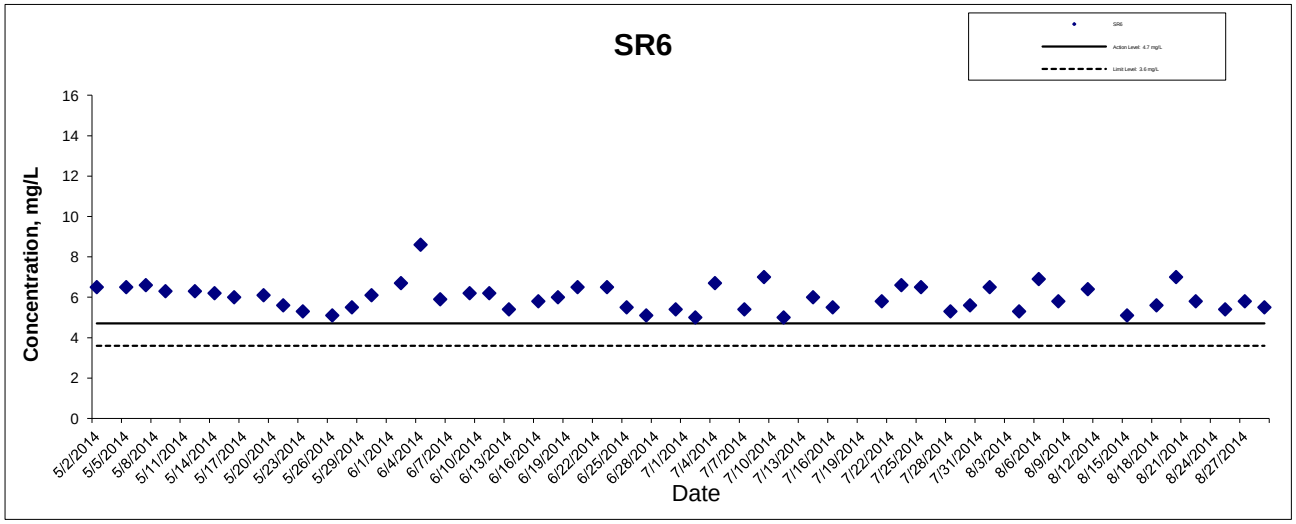

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Project No.: 60249820 **Date: Sep 2014** **Appendix J**

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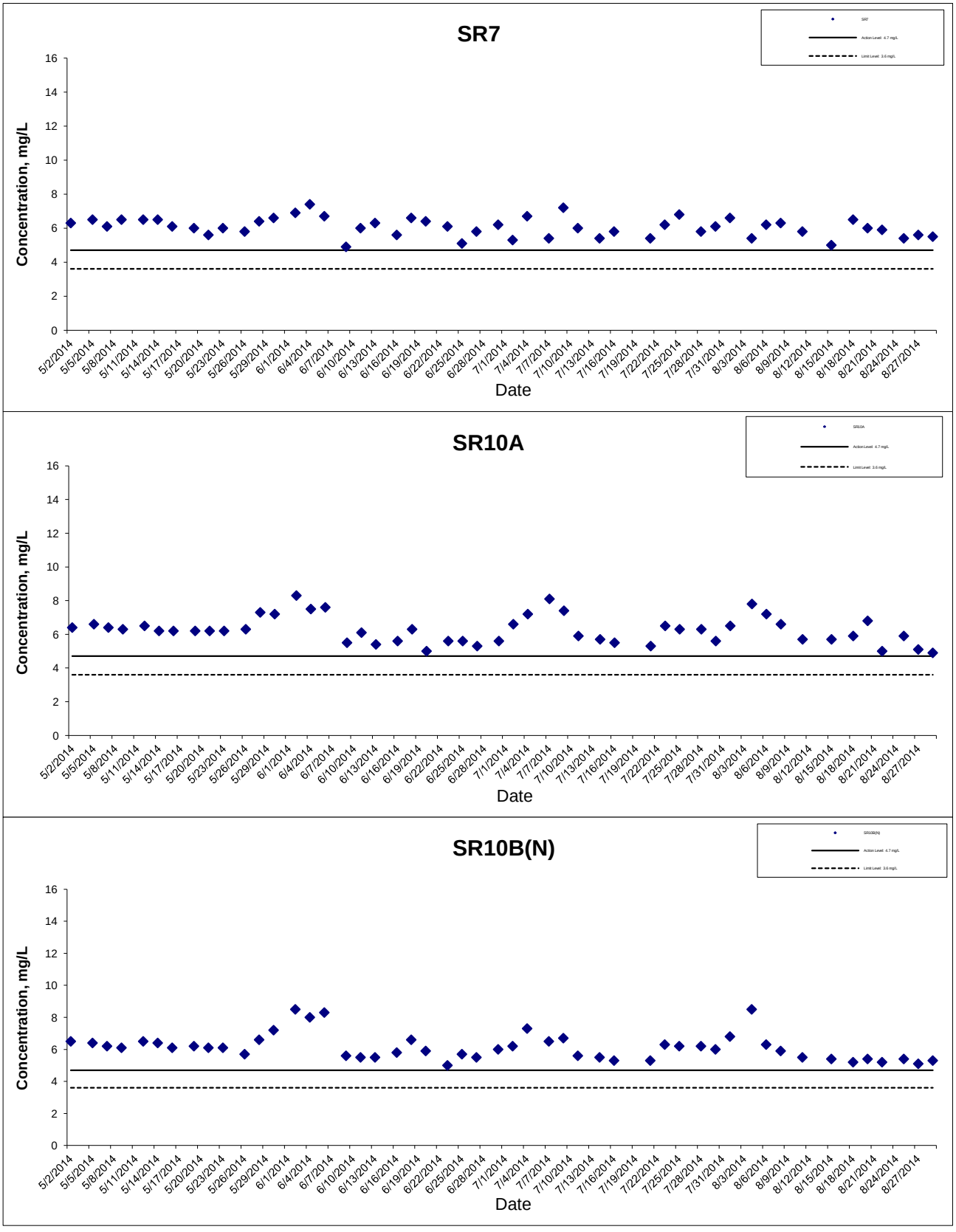

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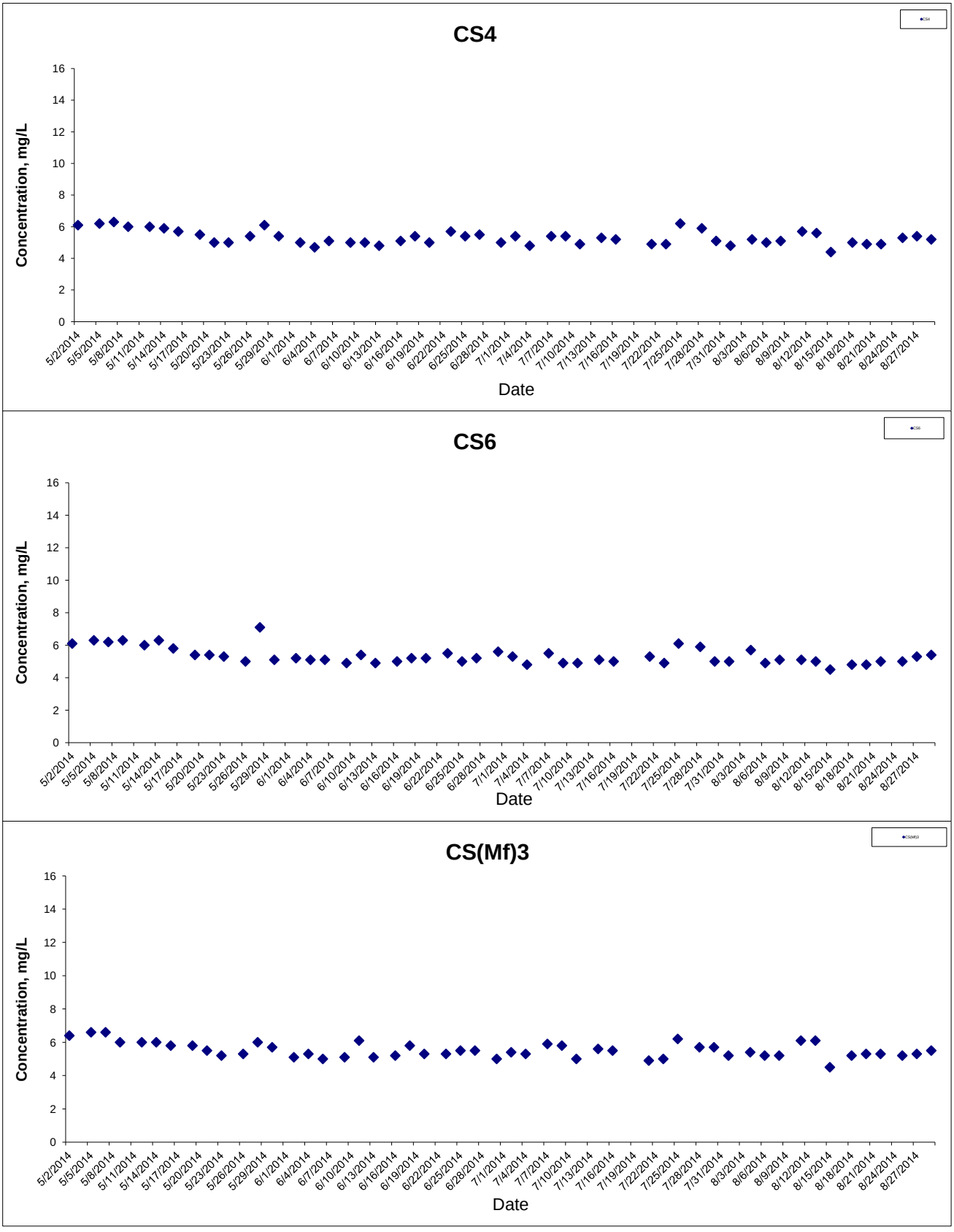
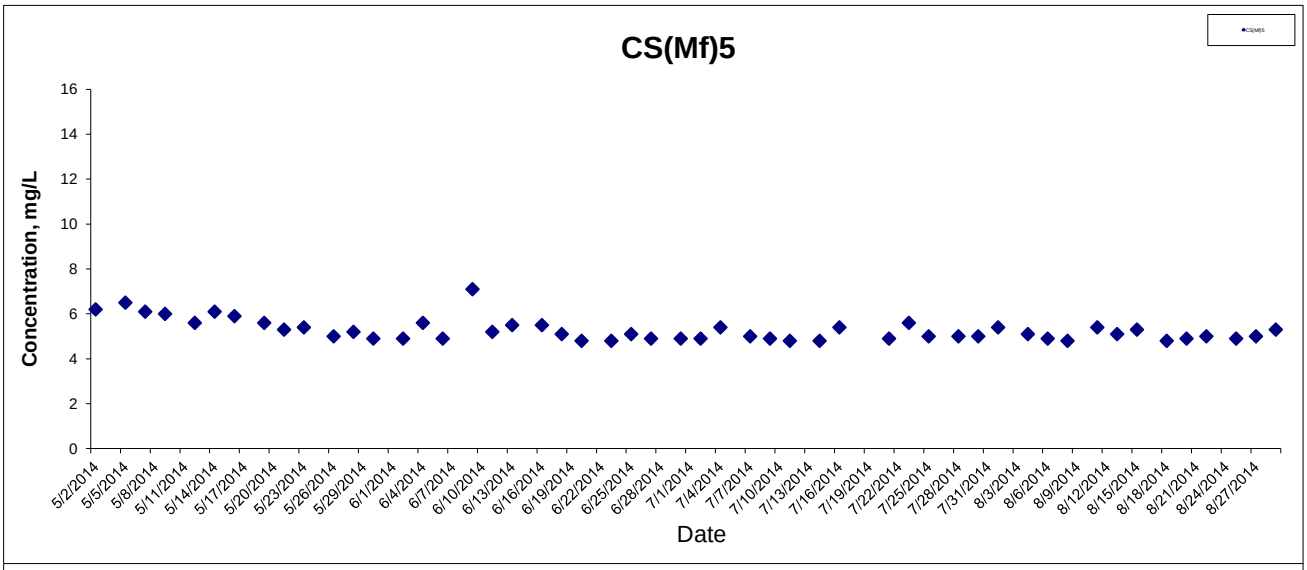
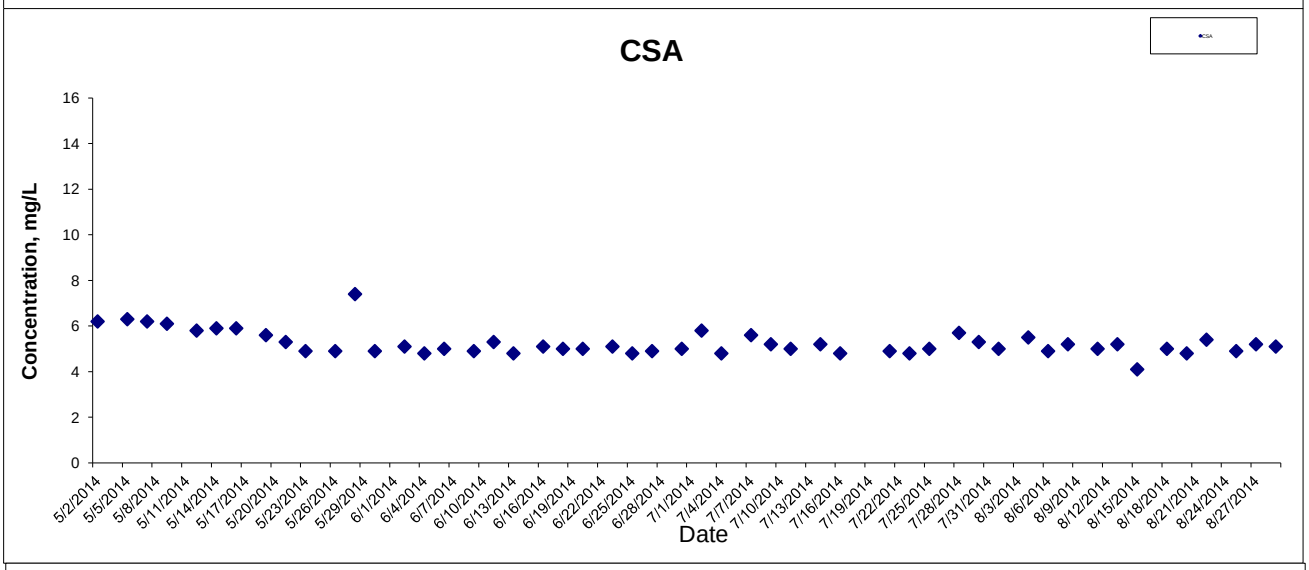
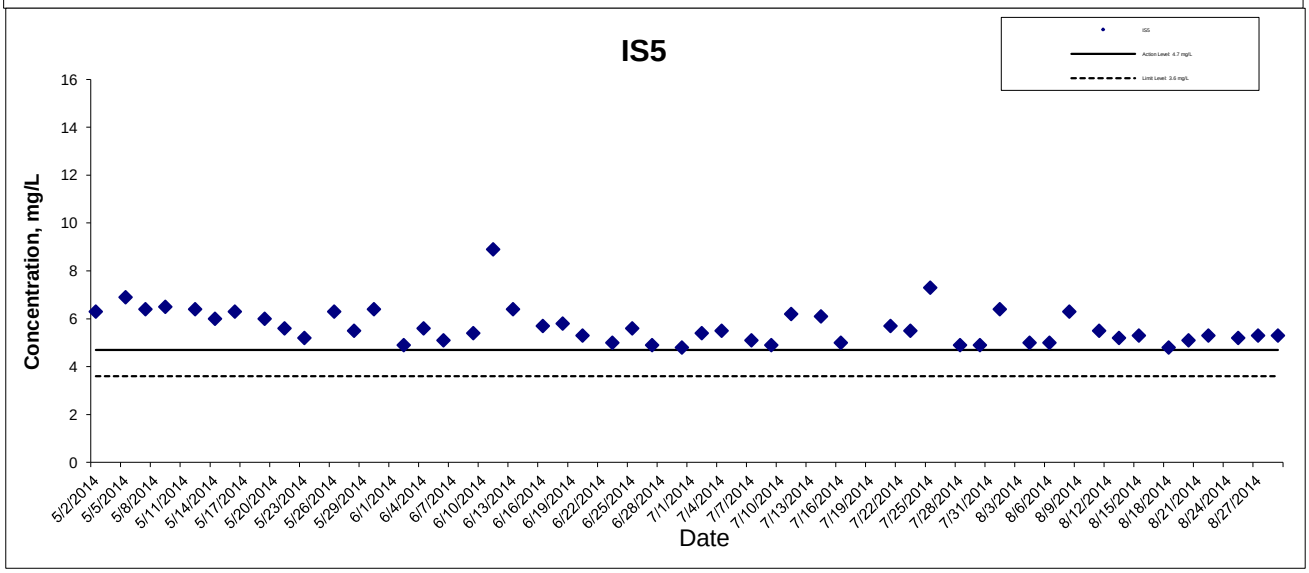


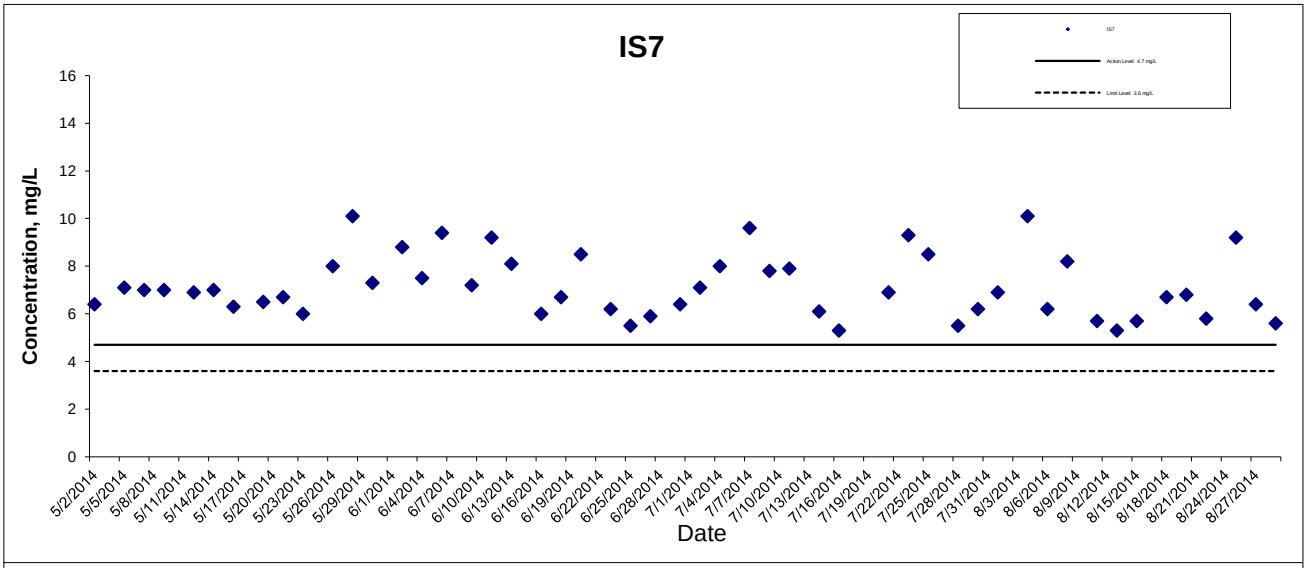
Dissolved Oxygen (Bottom) at Mid-Flood Tide

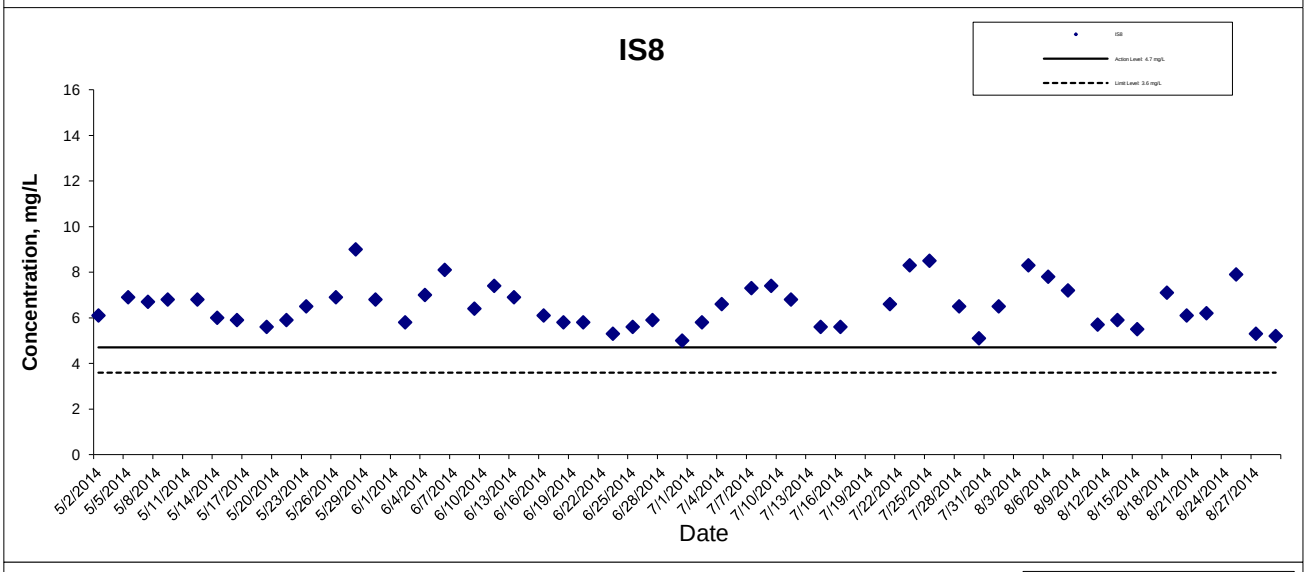


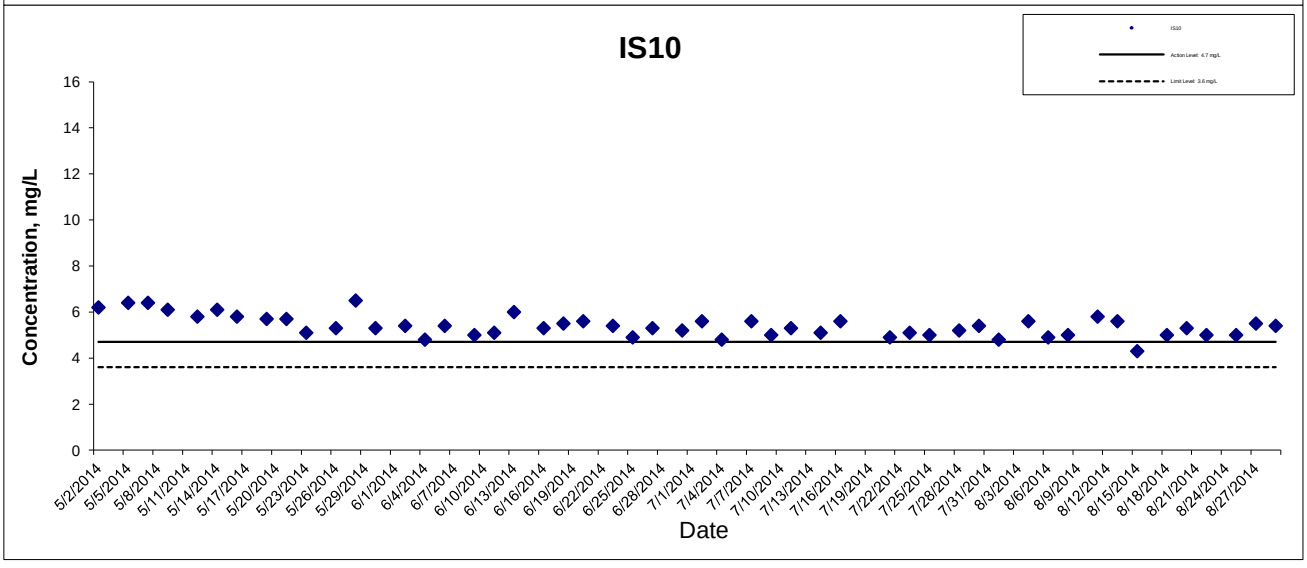




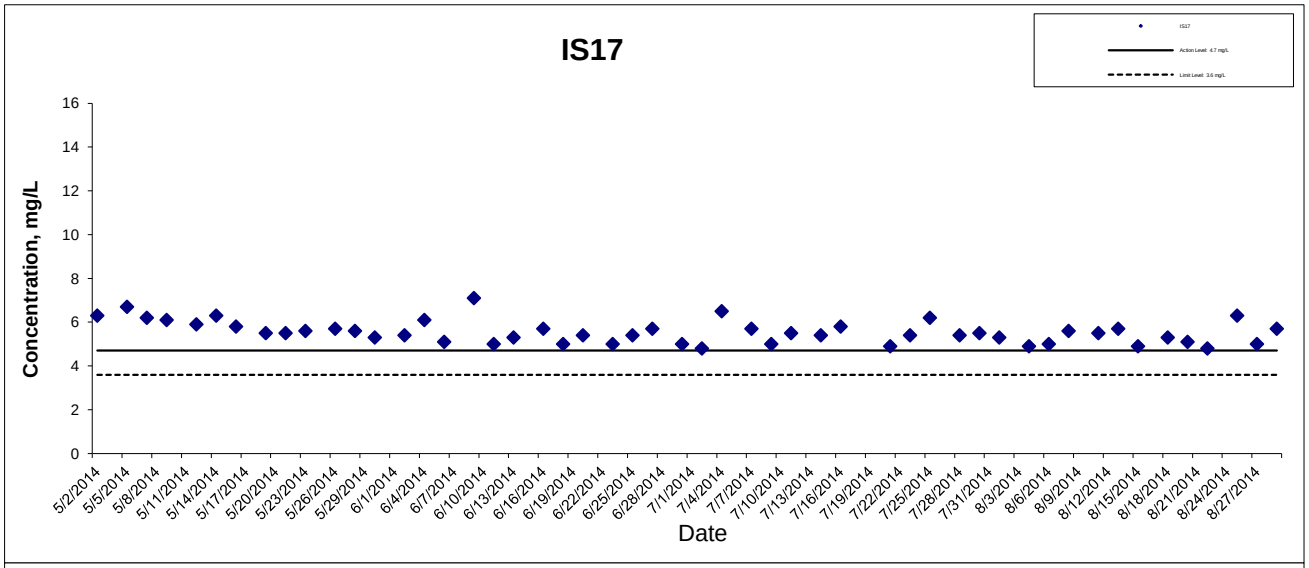
Dissolved Oxygen (Bottom) at Mid-Flood Tide

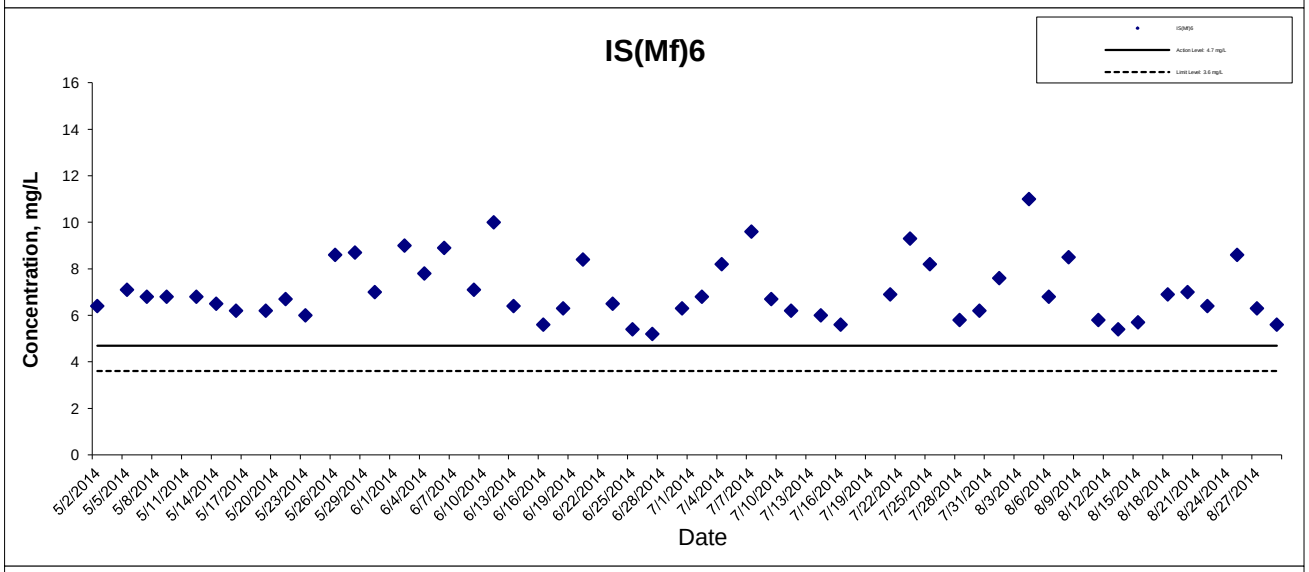


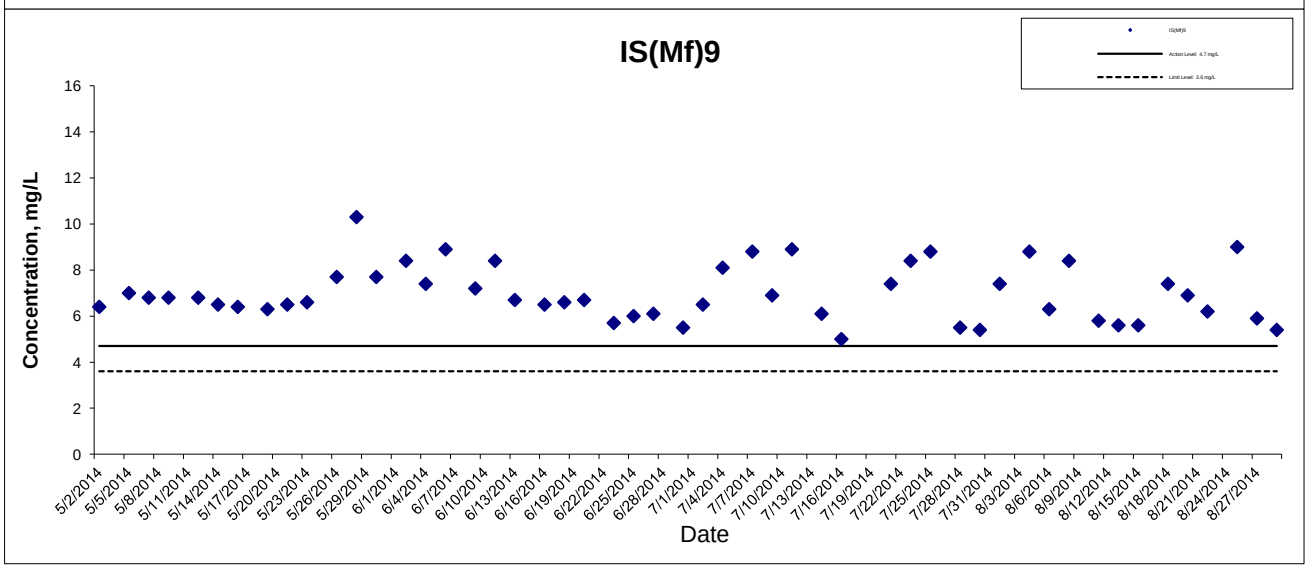




Dissolved Oxygen (Bottom) at Mid-Flood Tide







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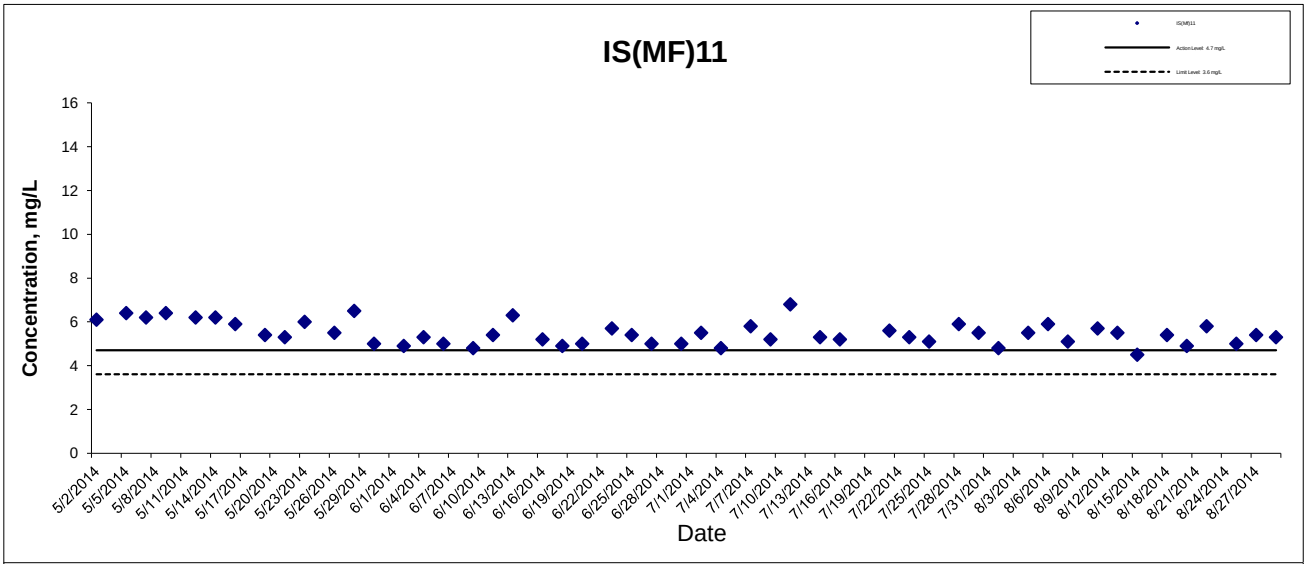
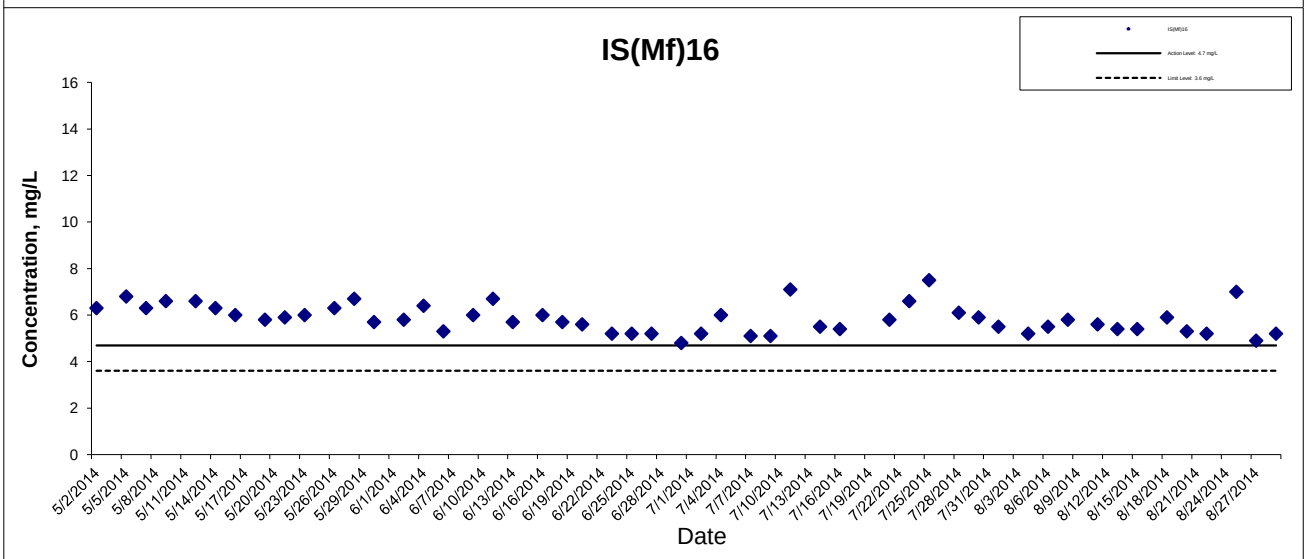
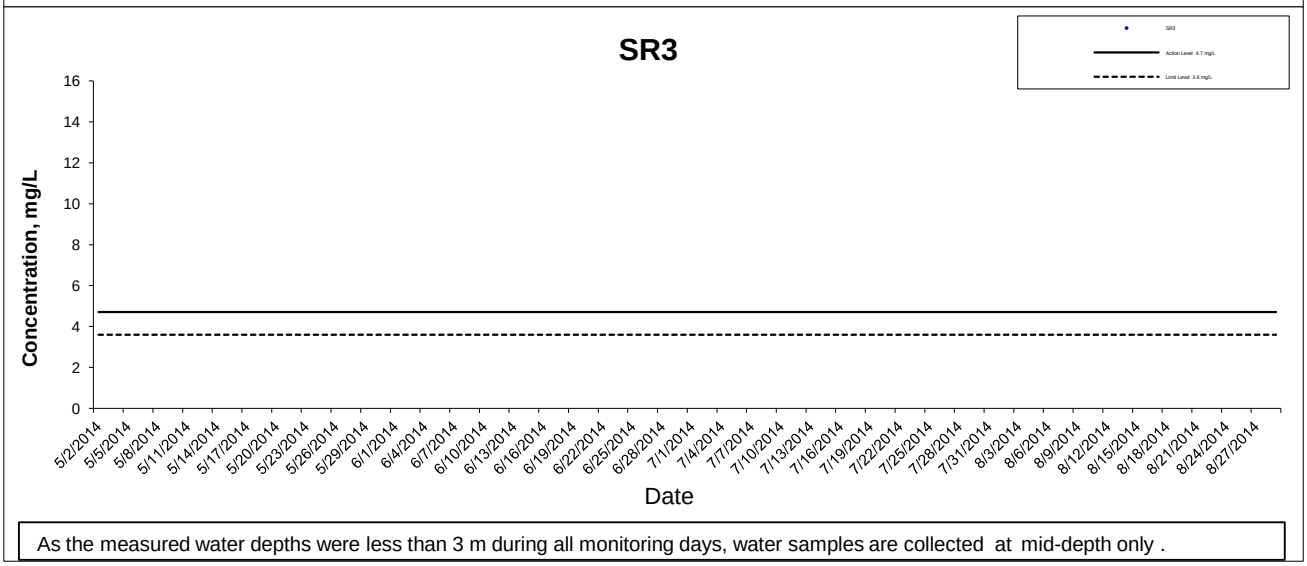
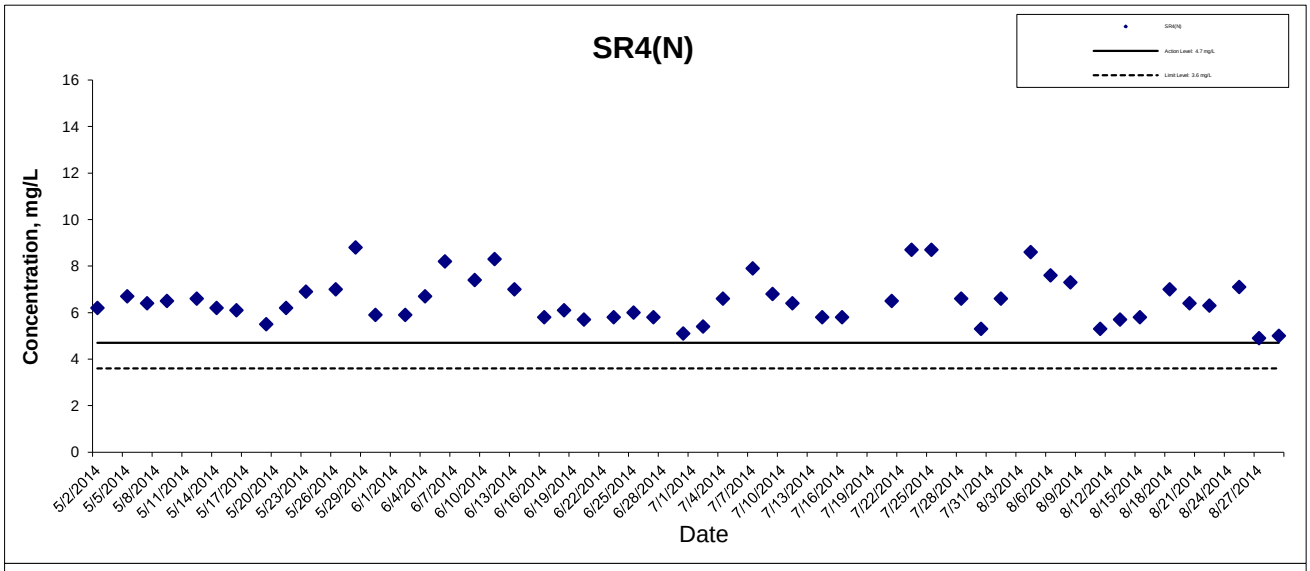


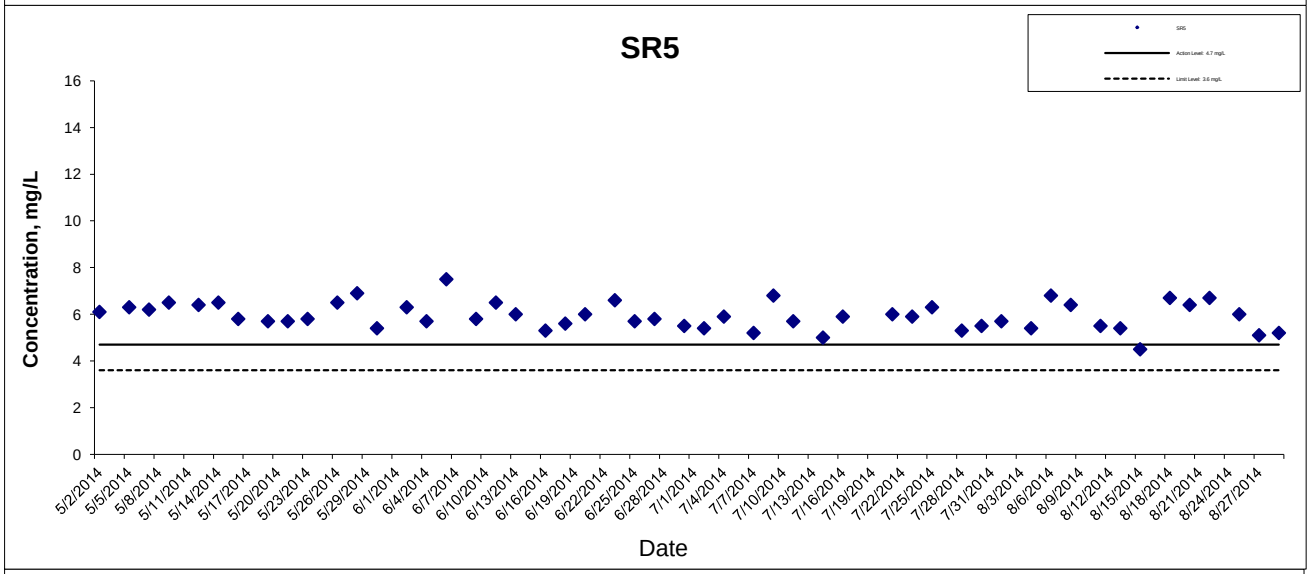


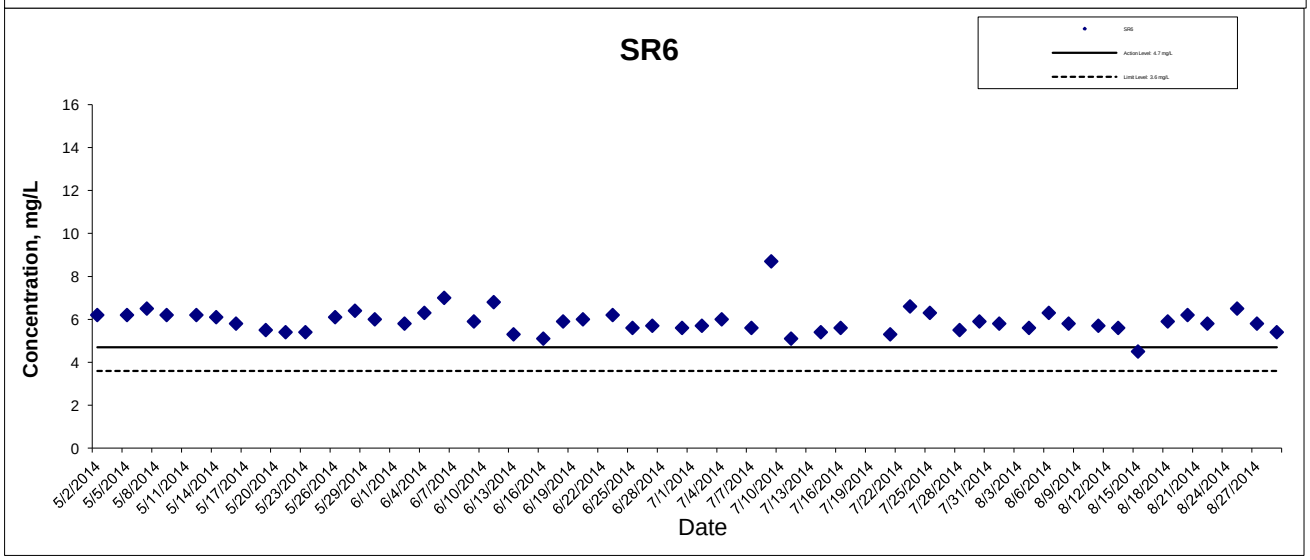


As the measured water depths were less than 3 m during all monitoring days, water samples are collected at mid-depth only .

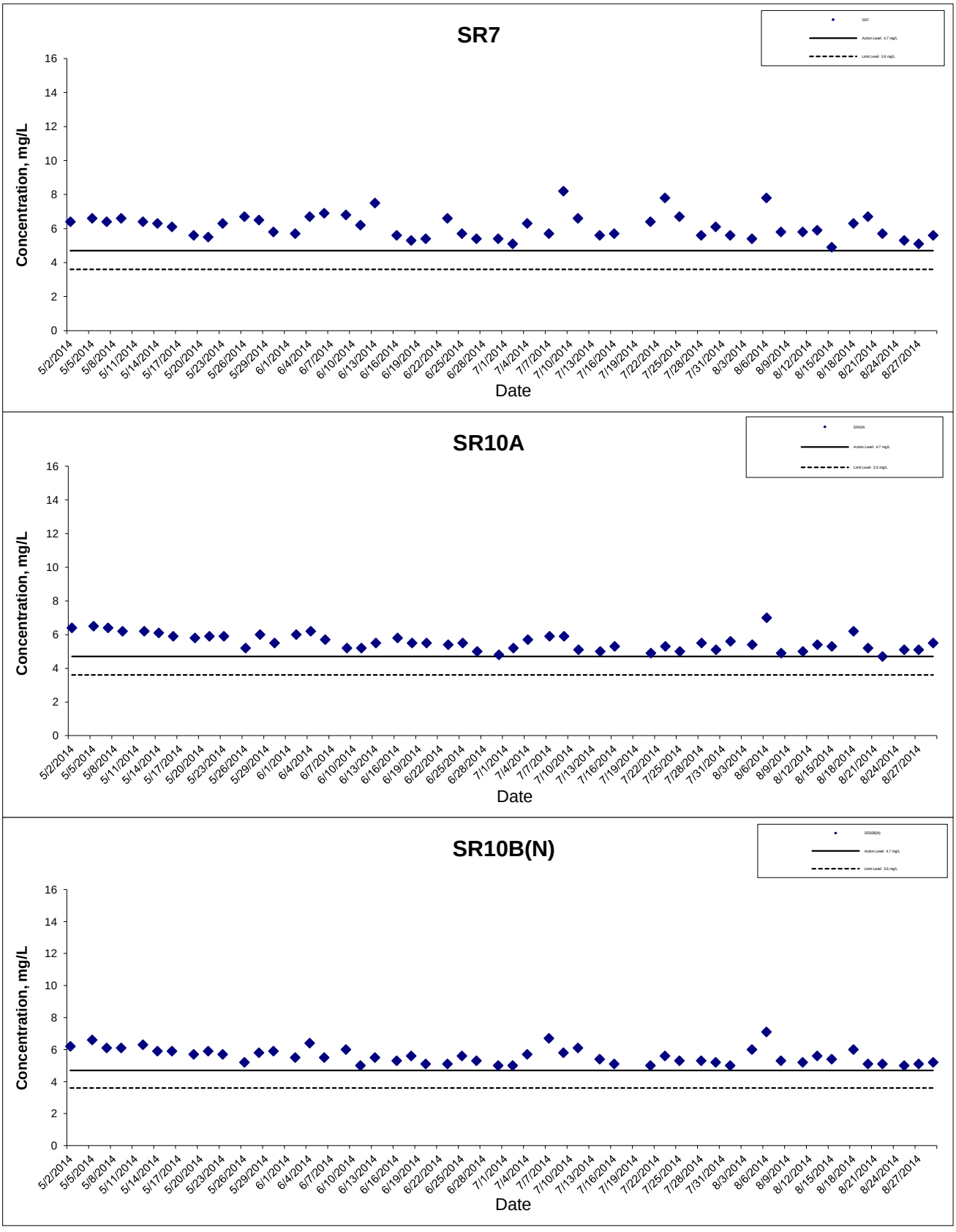
Dissolved Oxygen (Bottom) at Mid-Flood Tide







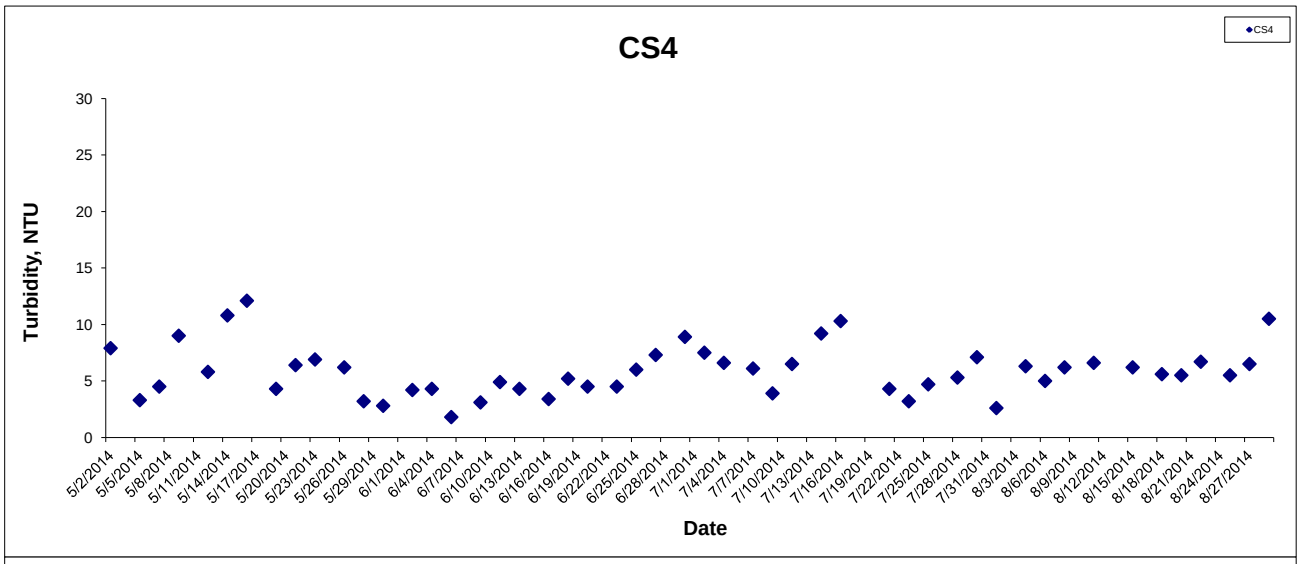
Dissolved Oxygen (Bottom) at Mid-Flood Tide

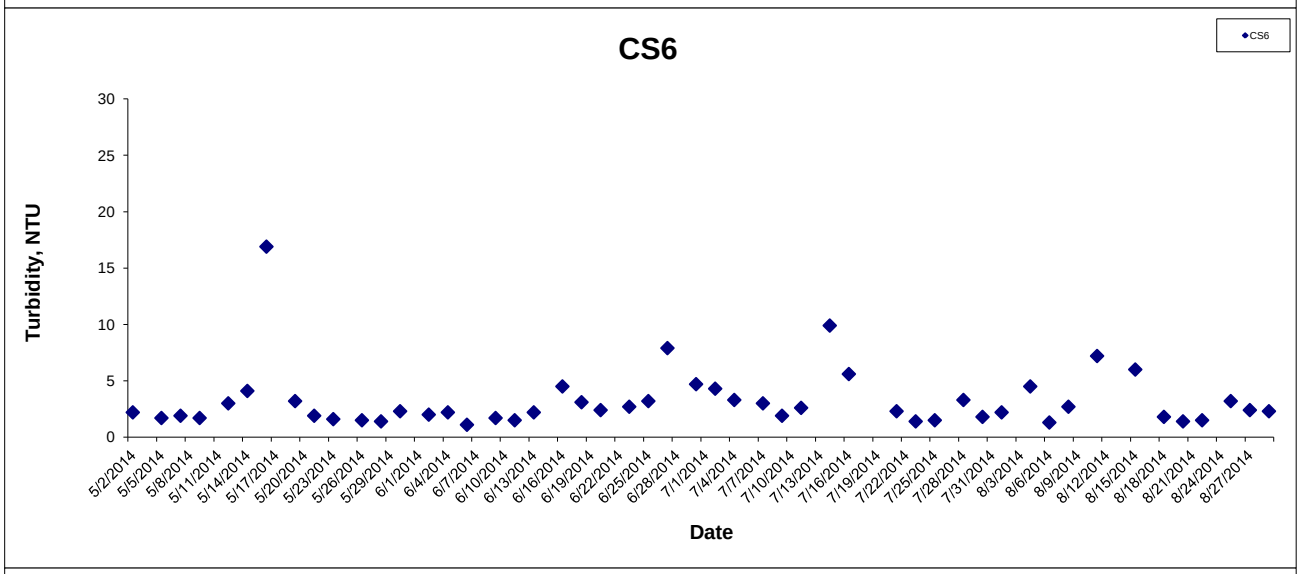


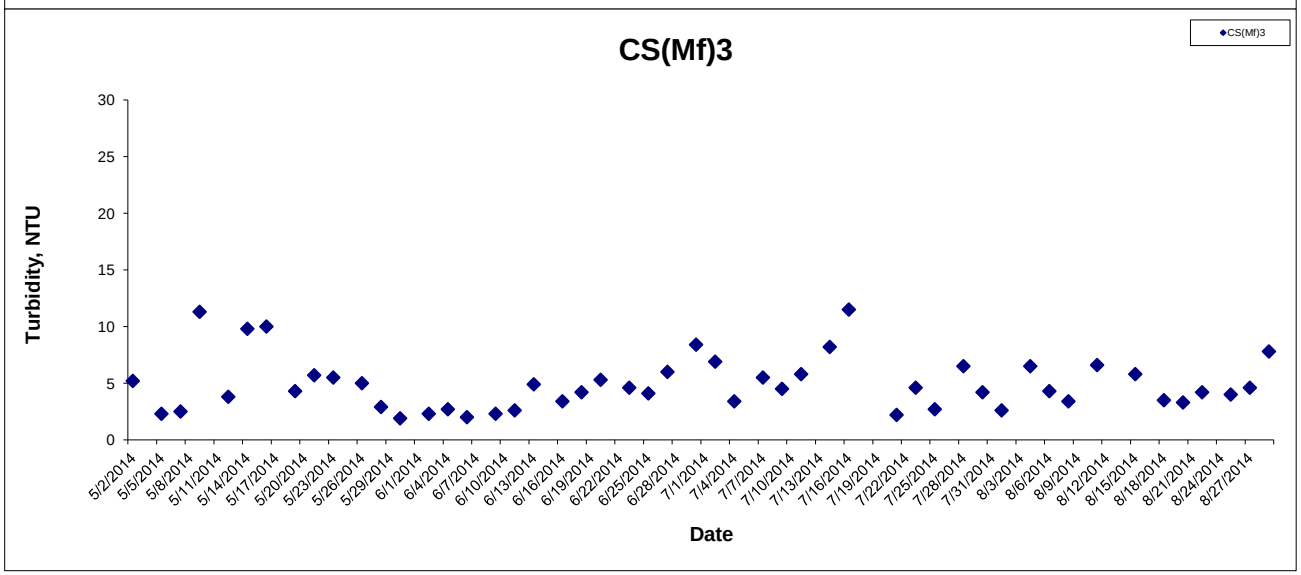
SR10A

SR10B(N)

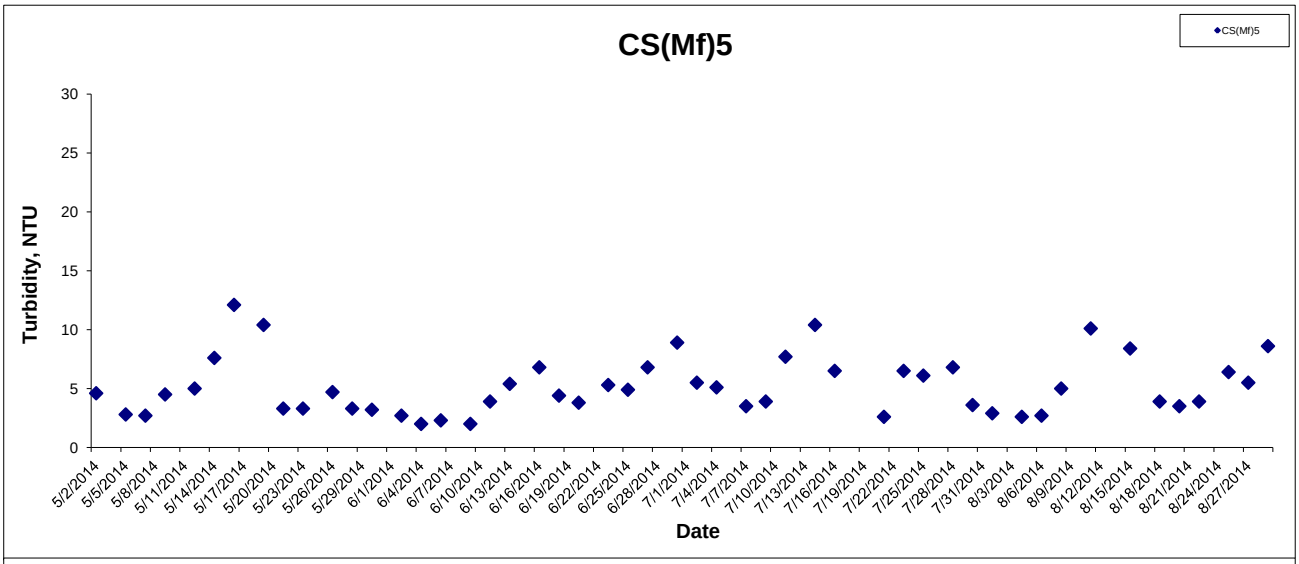
Turbidity at Mid-Ebb Tide

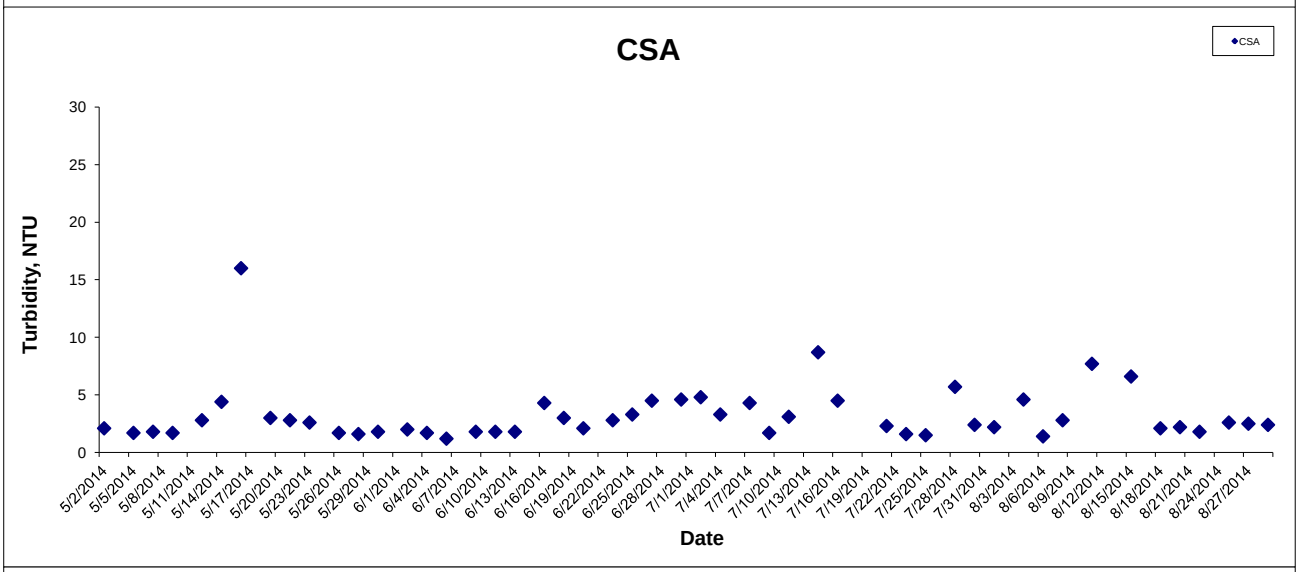


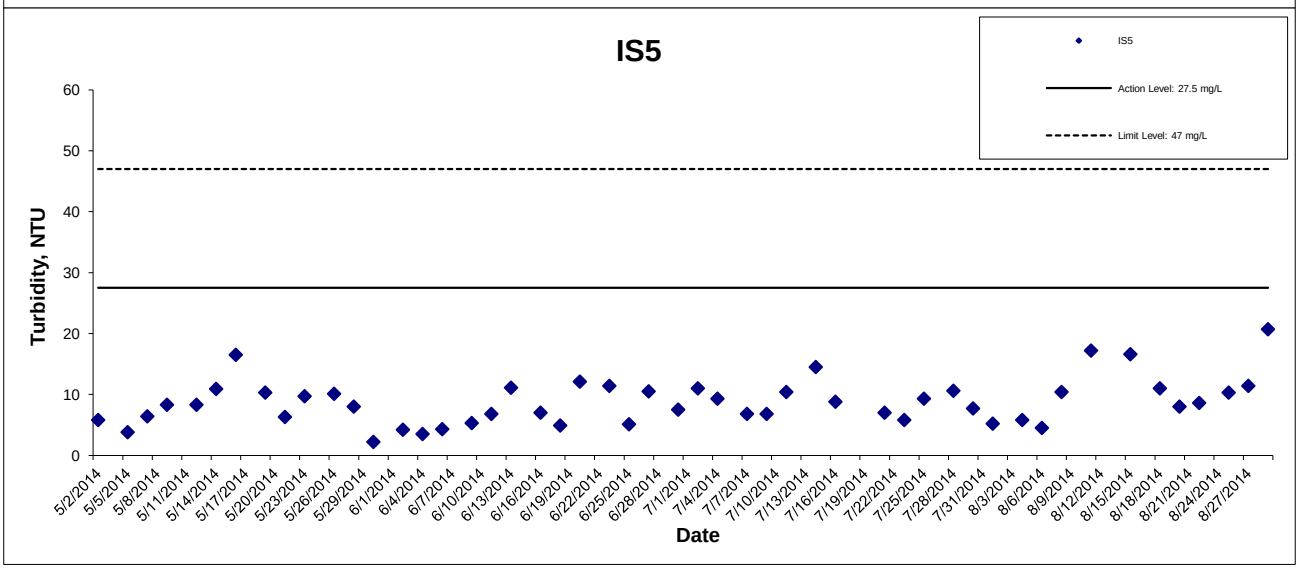




Turbidity at Mid-Ebb Tide







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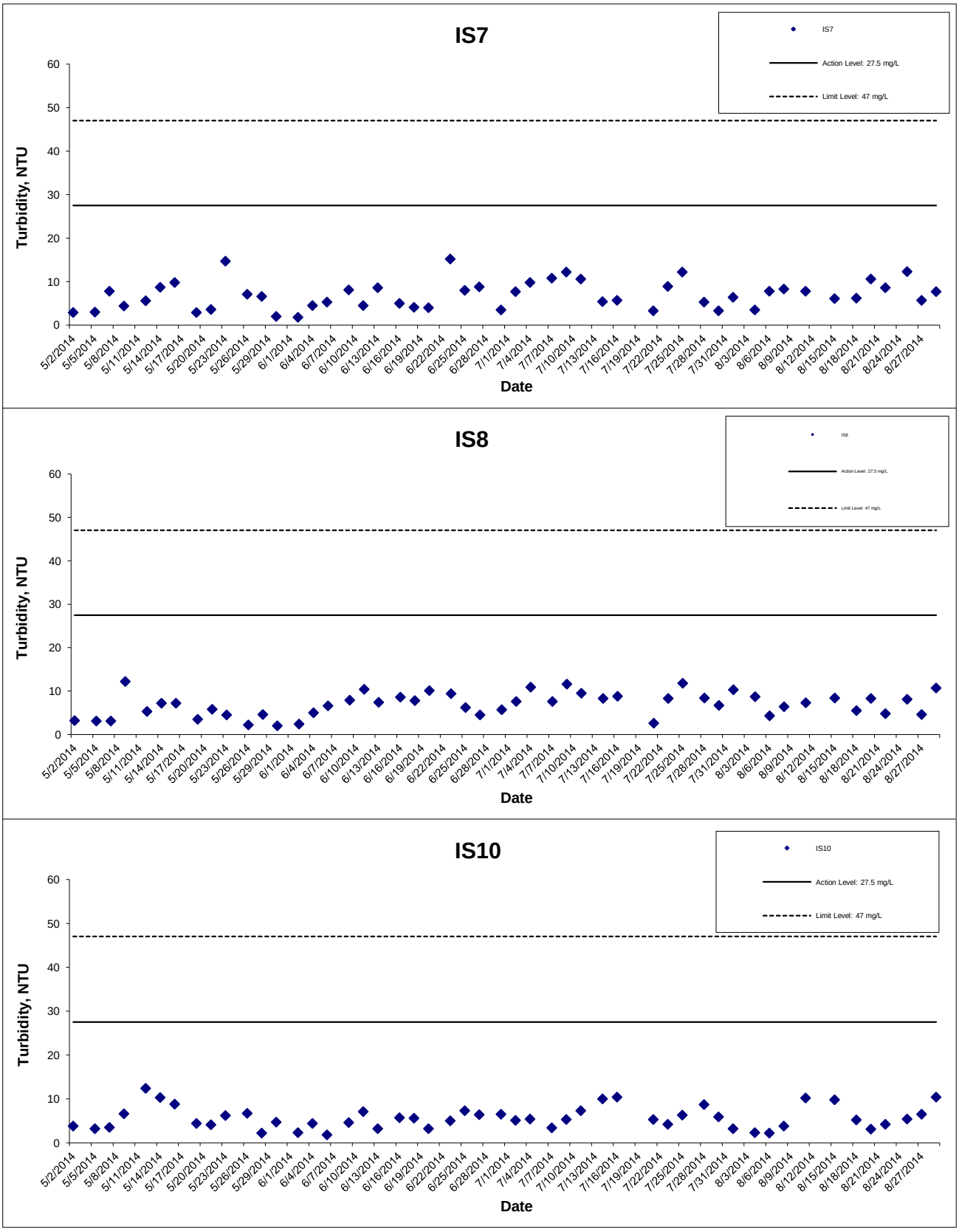

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AECOM

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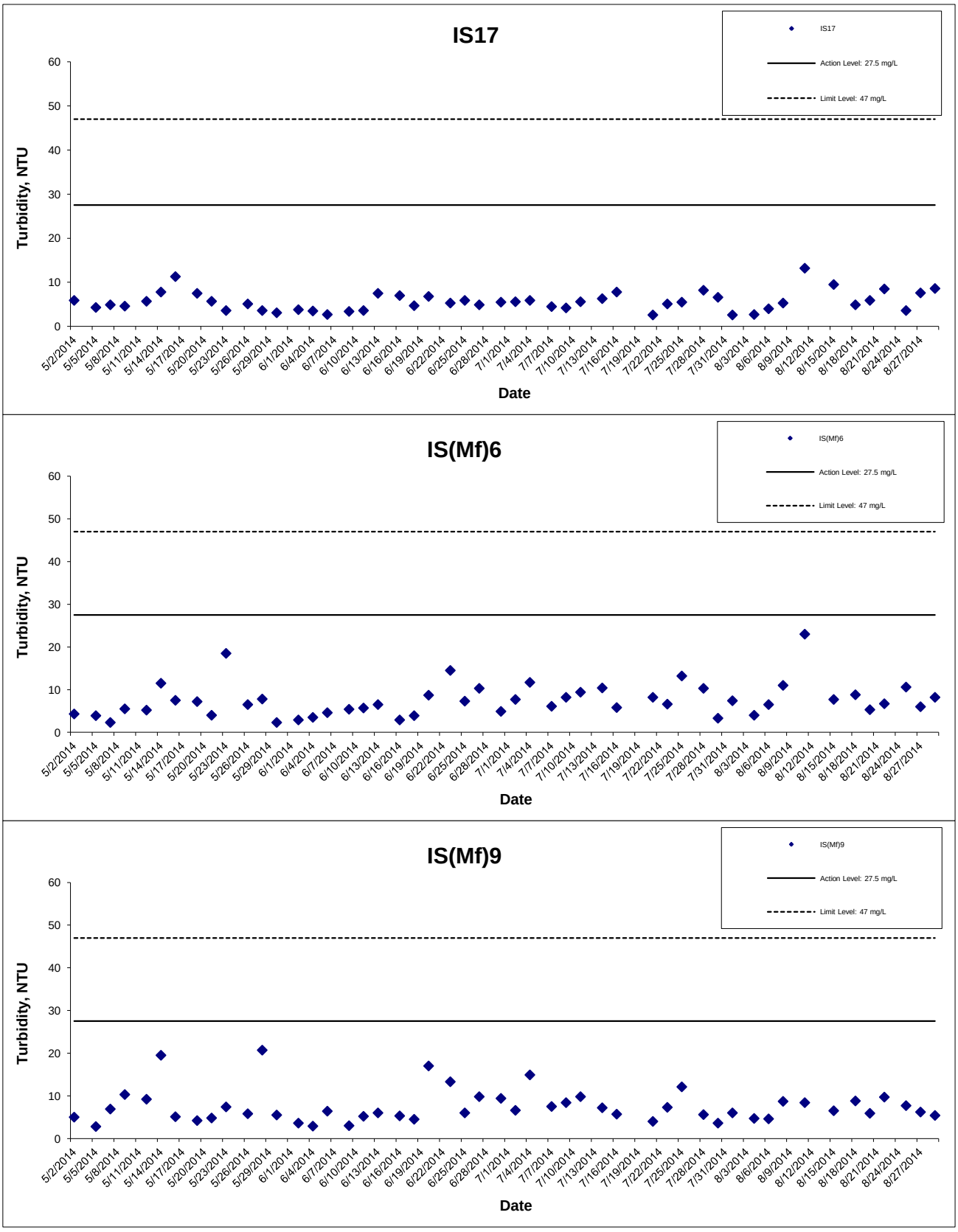
Turbidity at Mid-Ebb Tide



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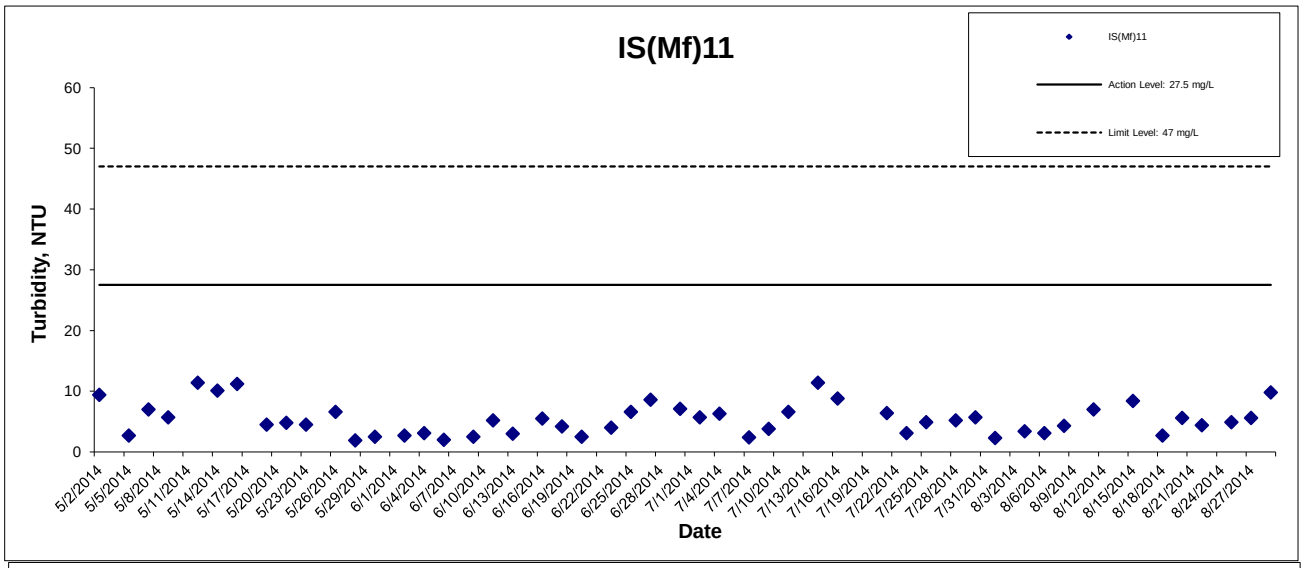

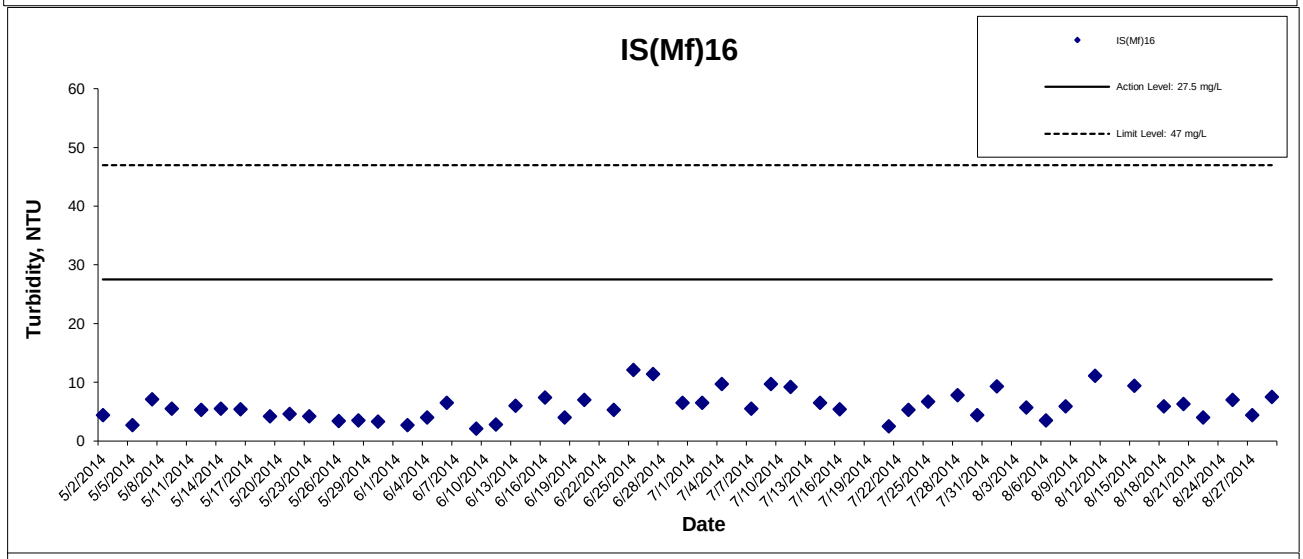

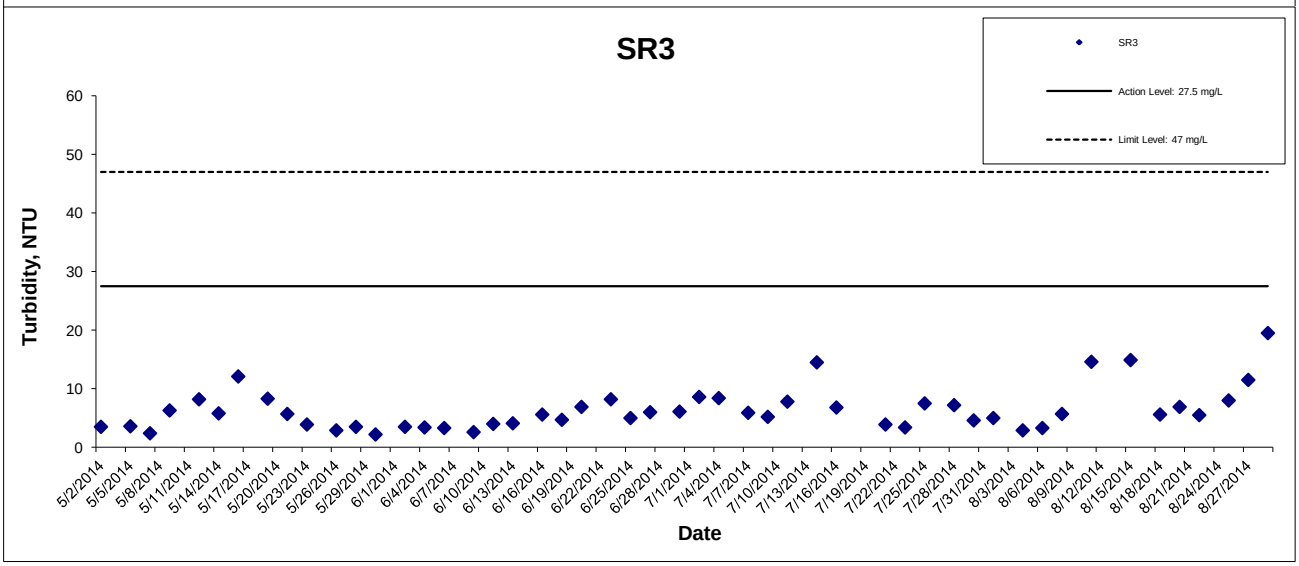

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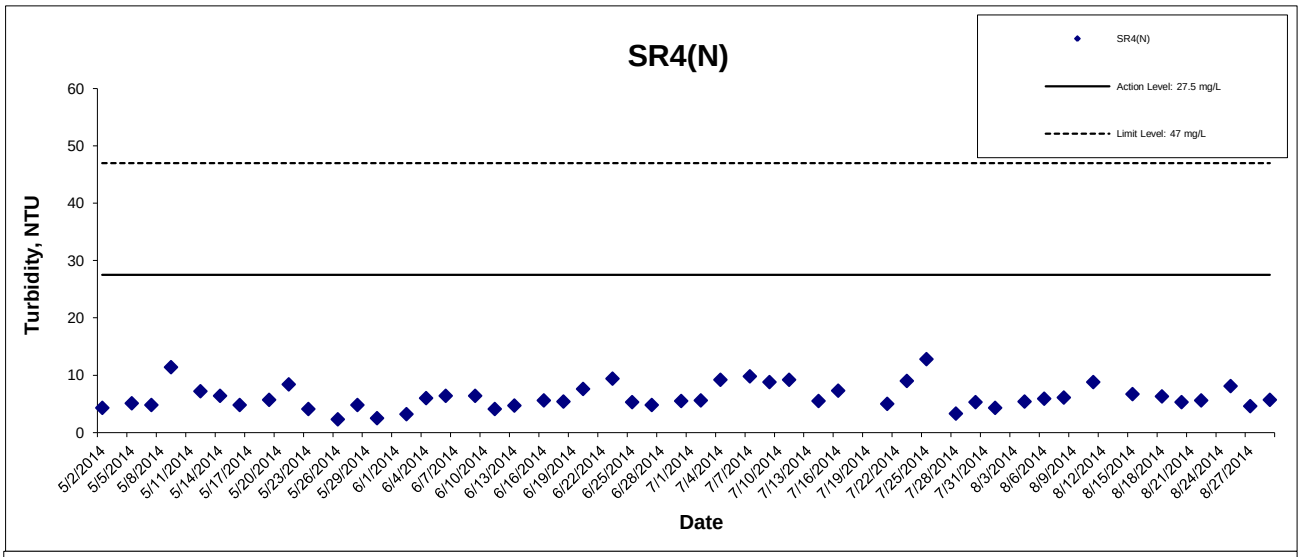

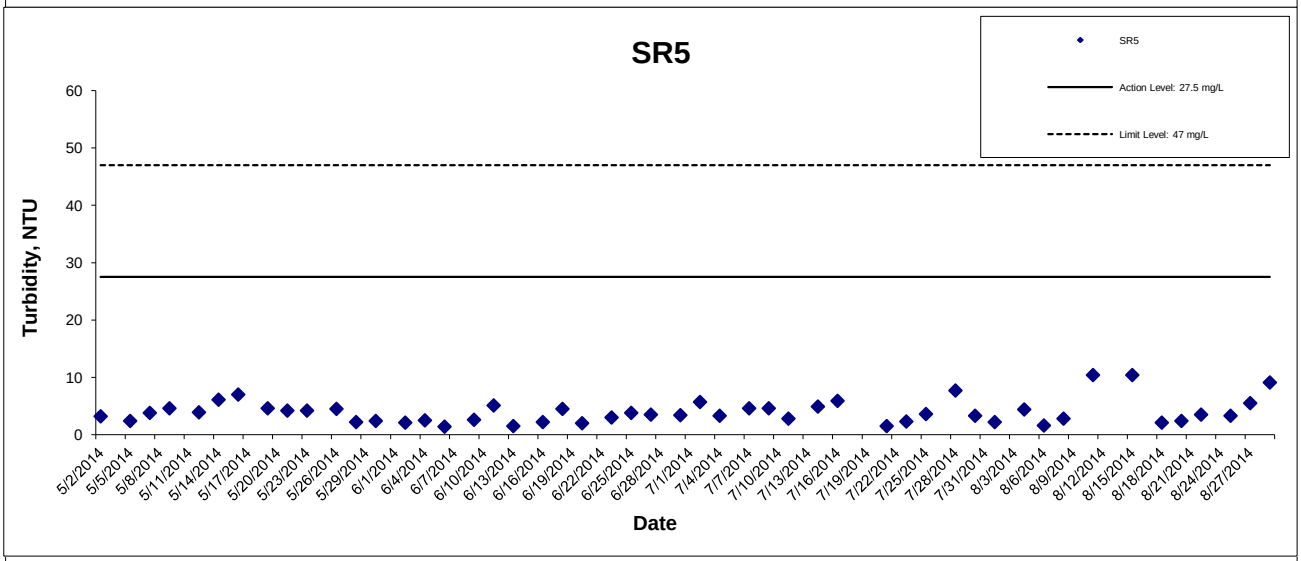

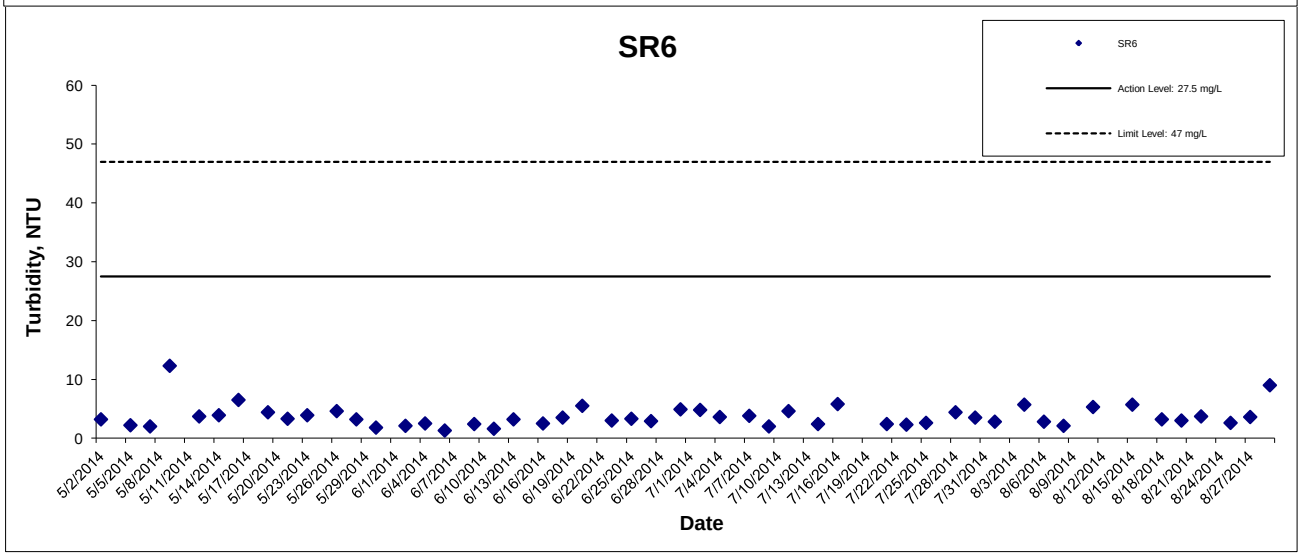

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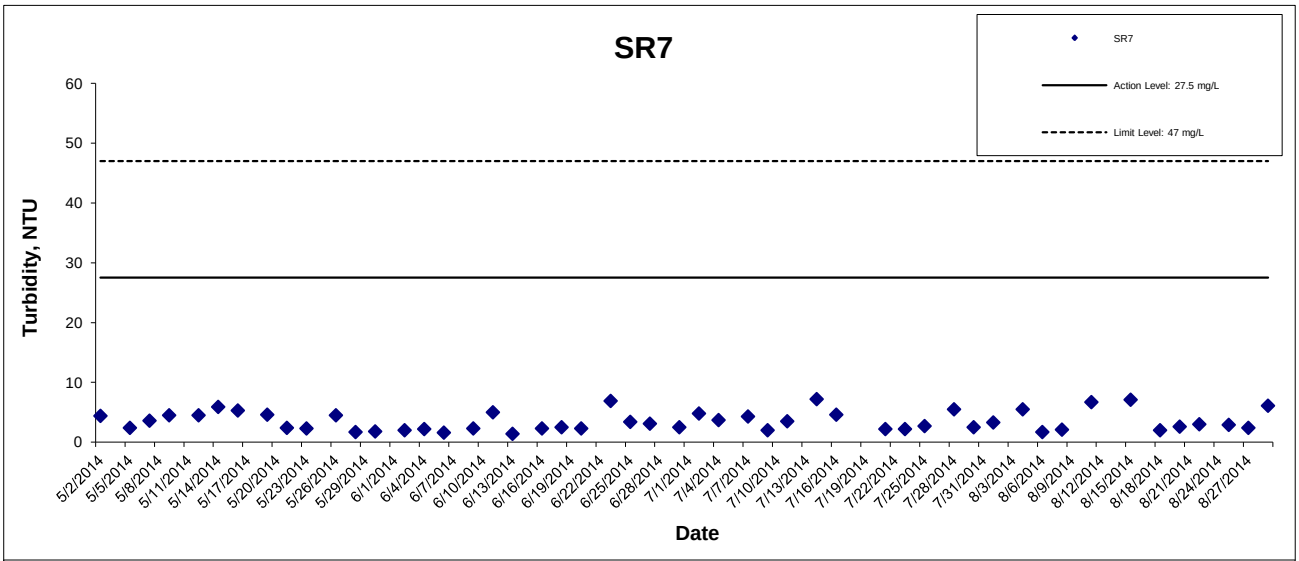
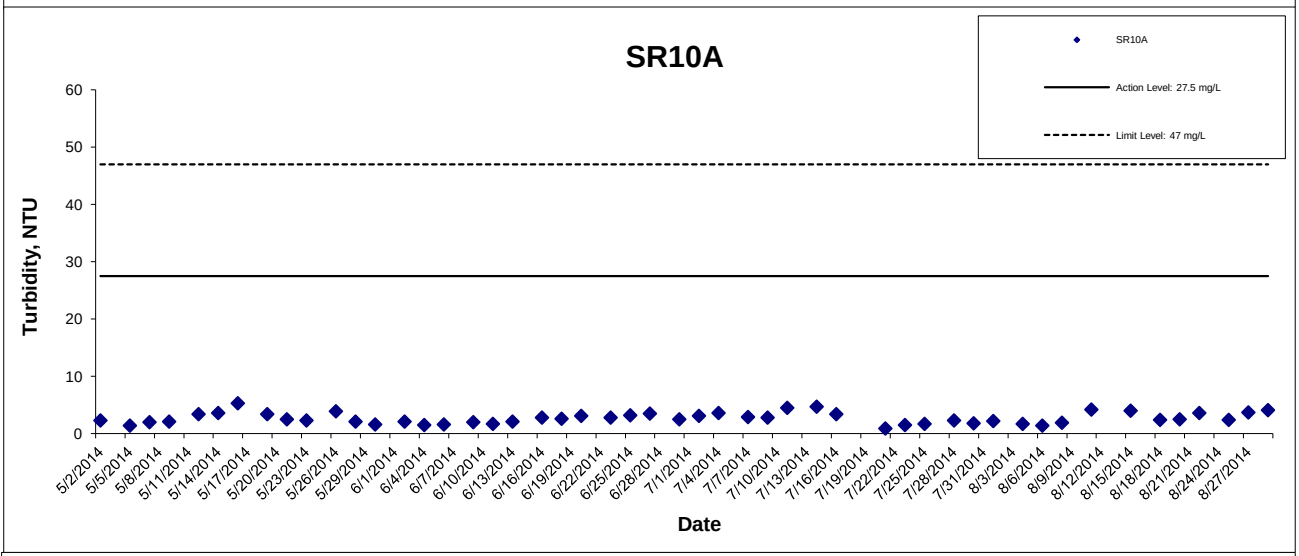
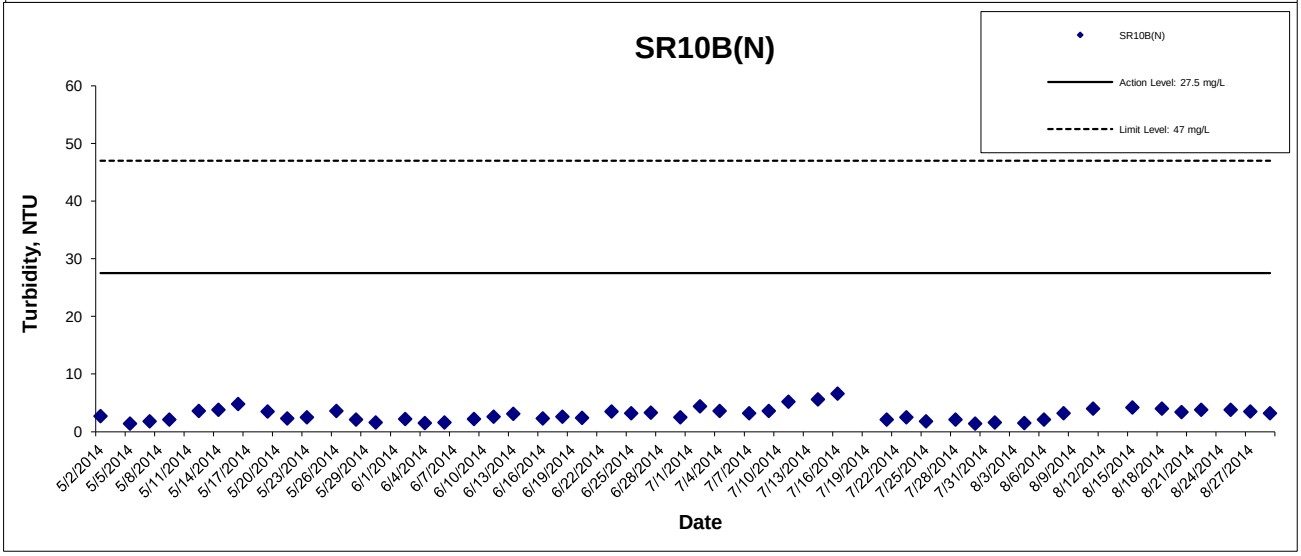
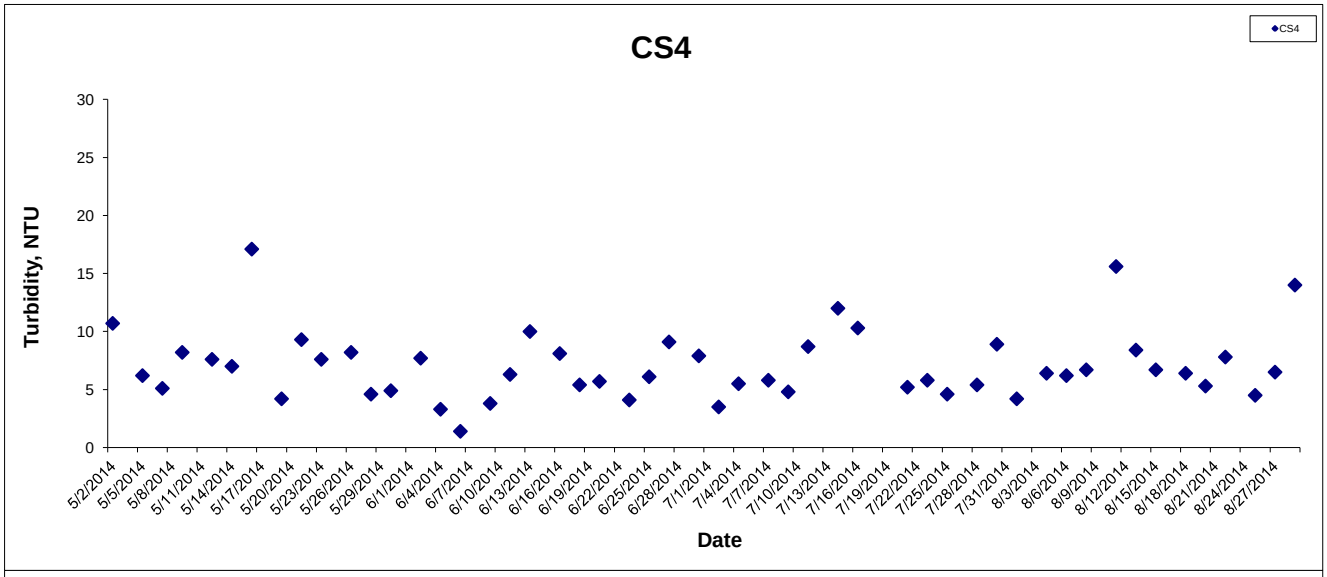
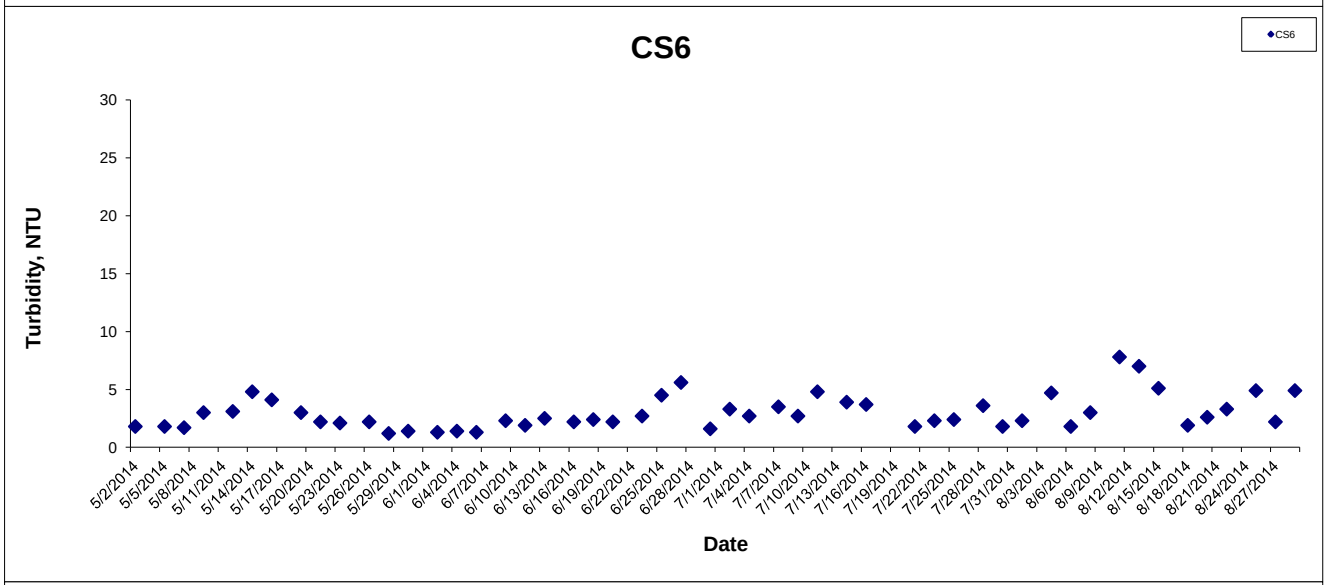


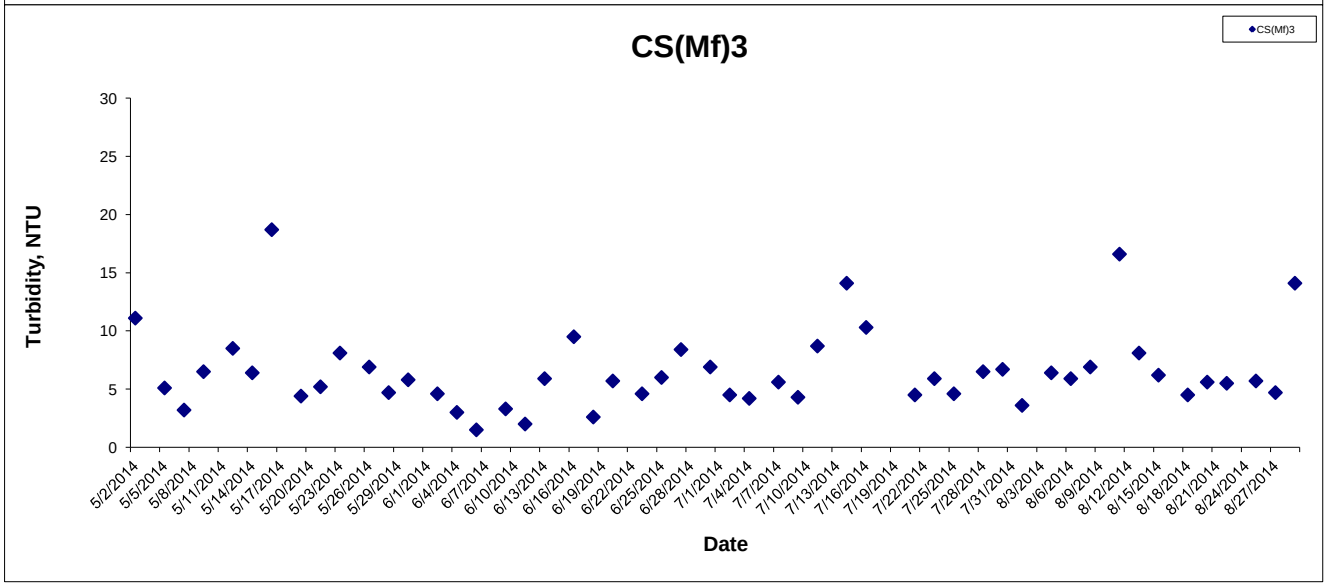




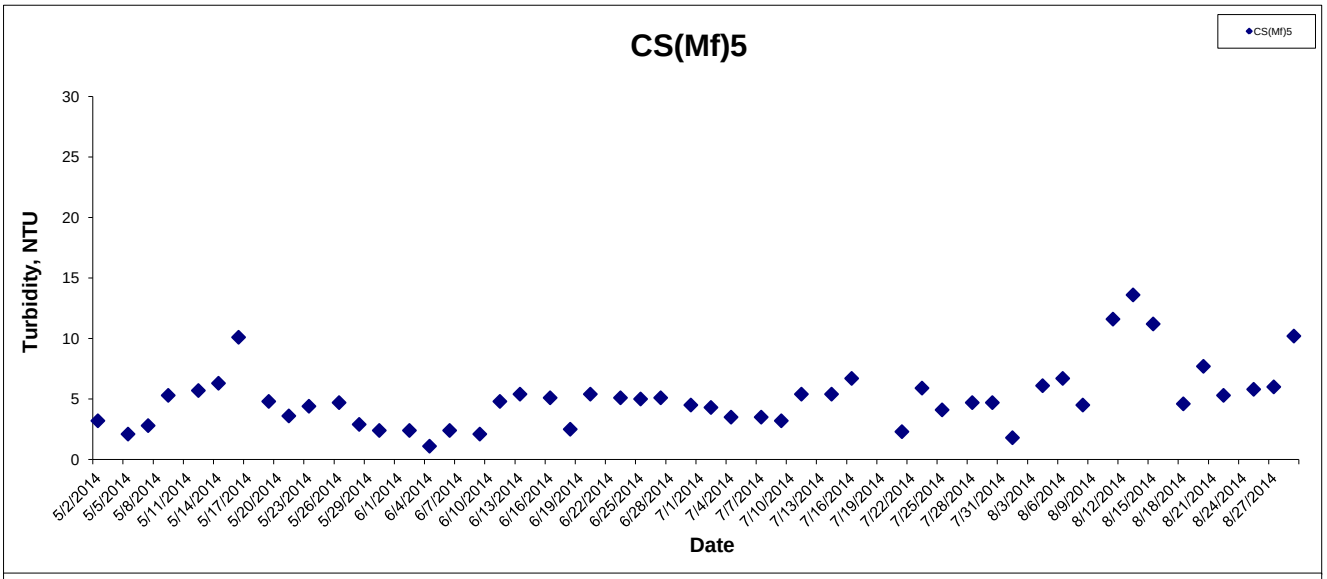
Turbidity at Mid-Flood Tide

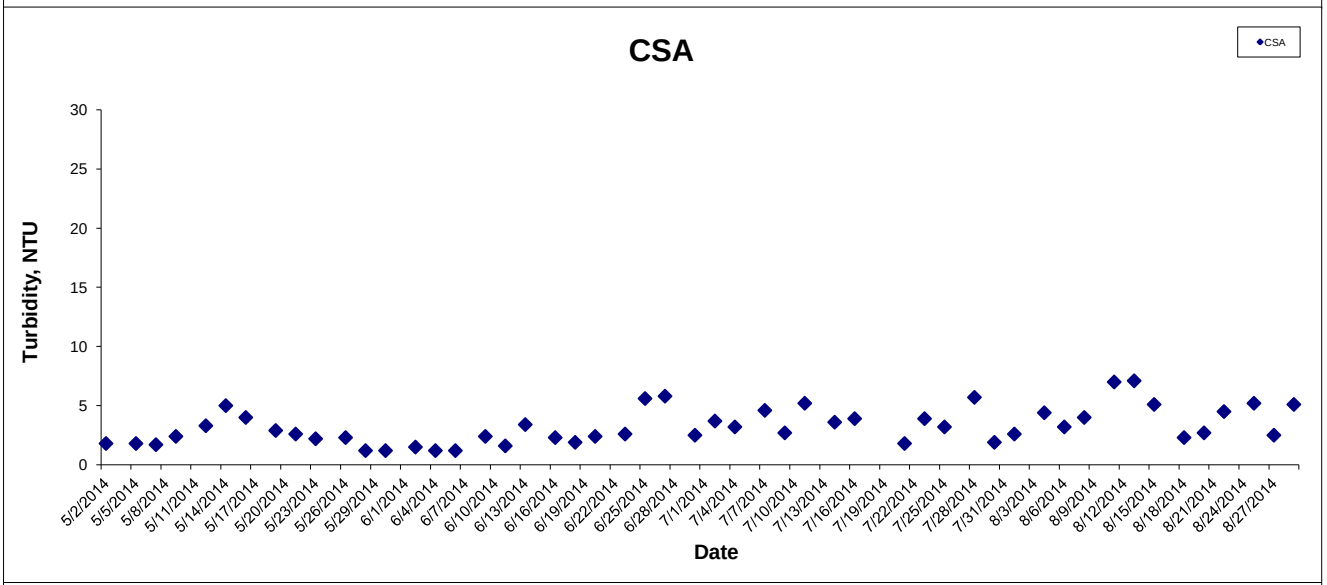


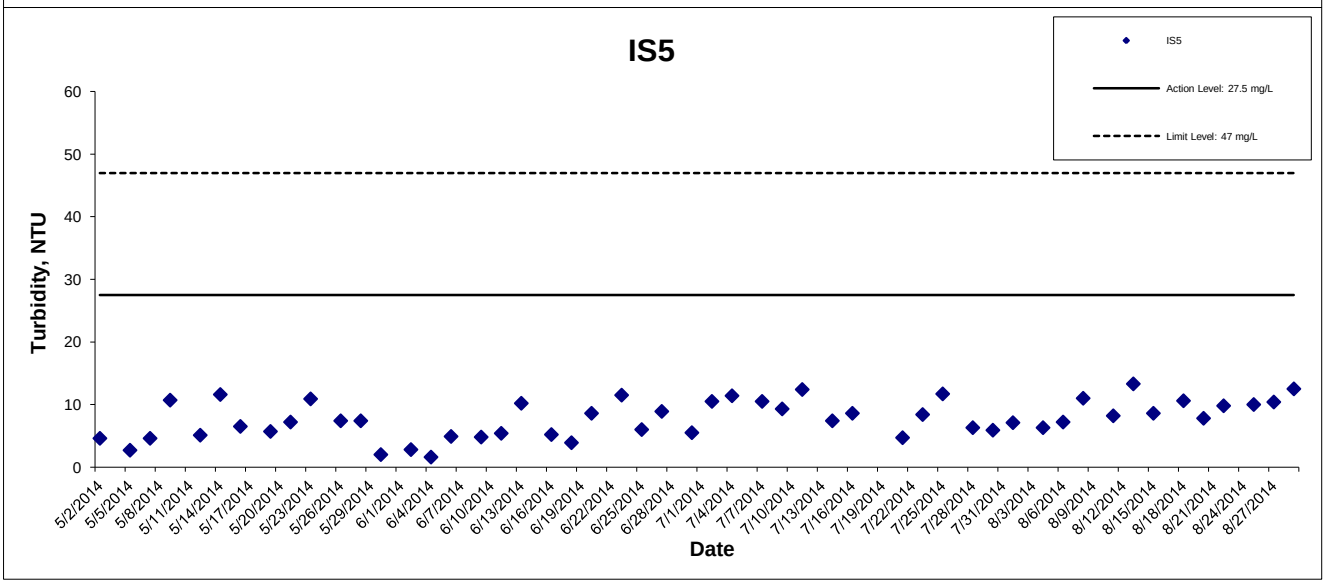




Turbidity at Mid-Flood Tide







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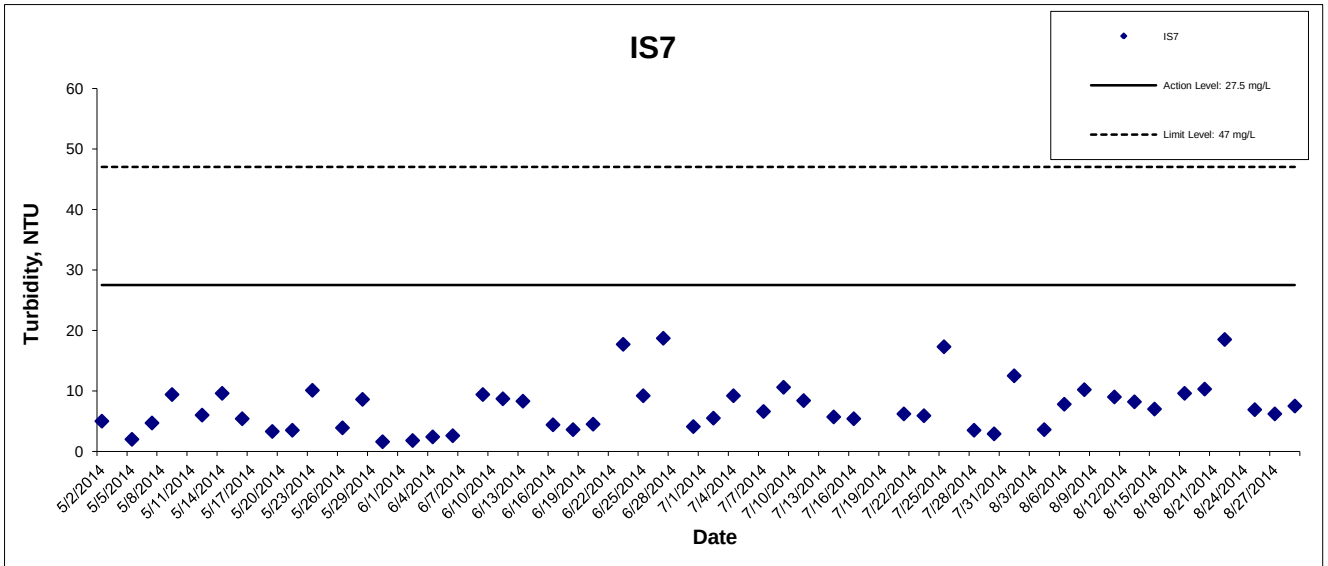

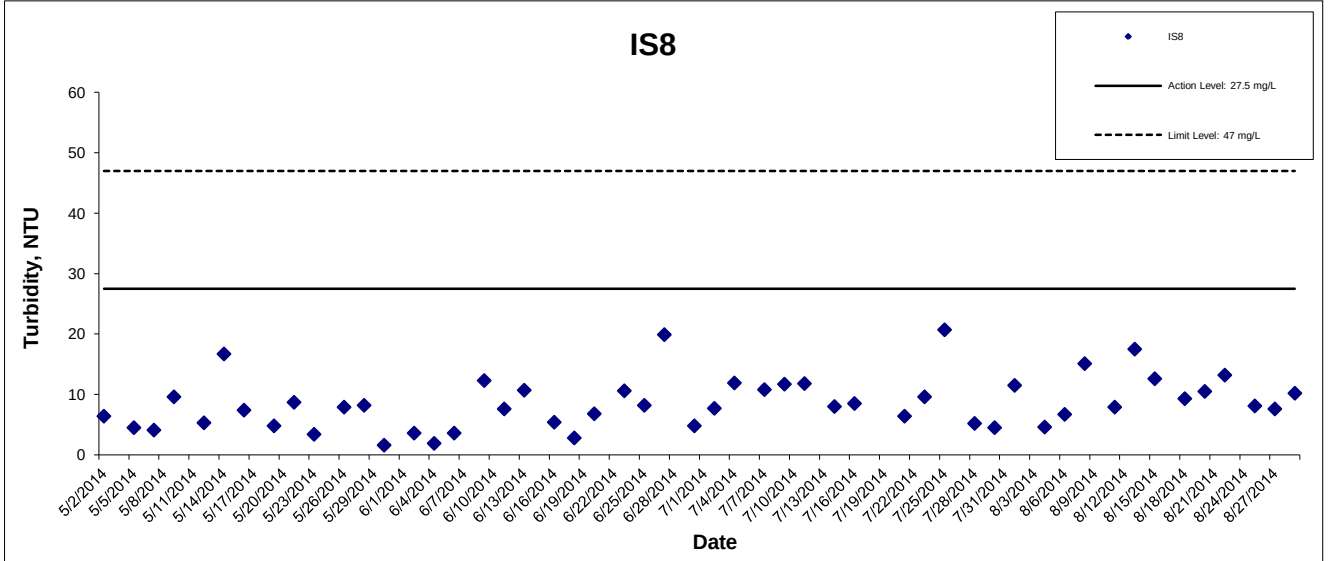

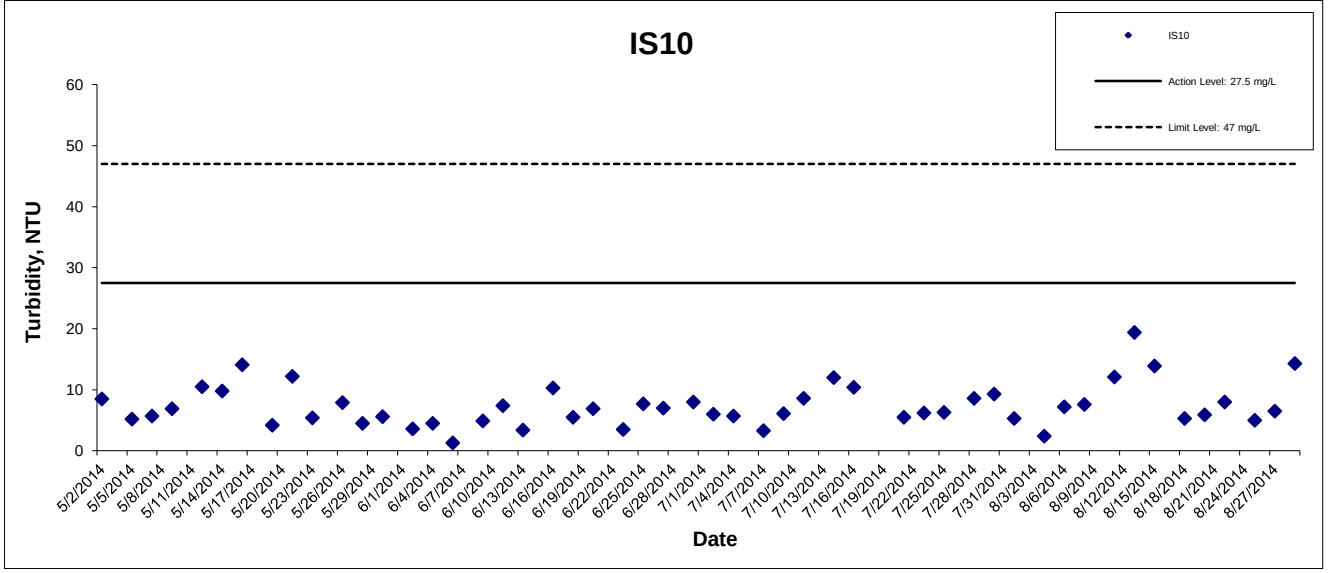

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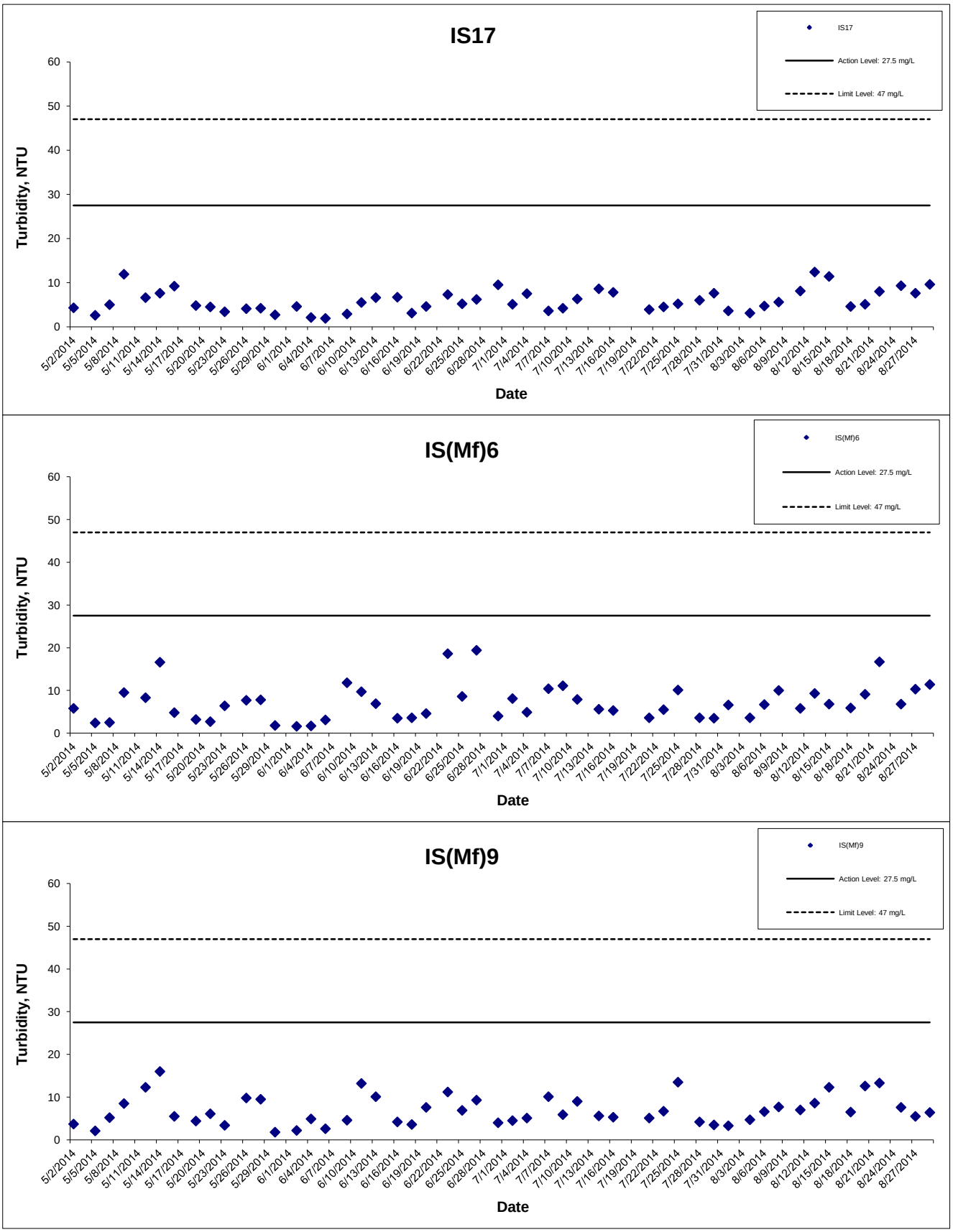

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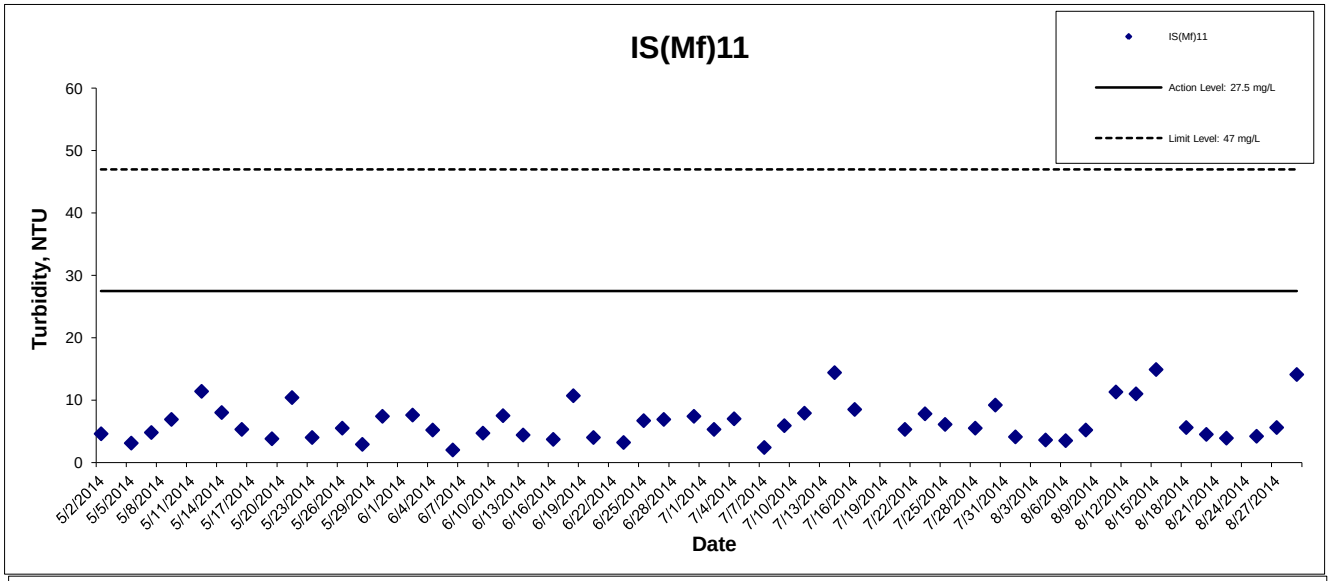

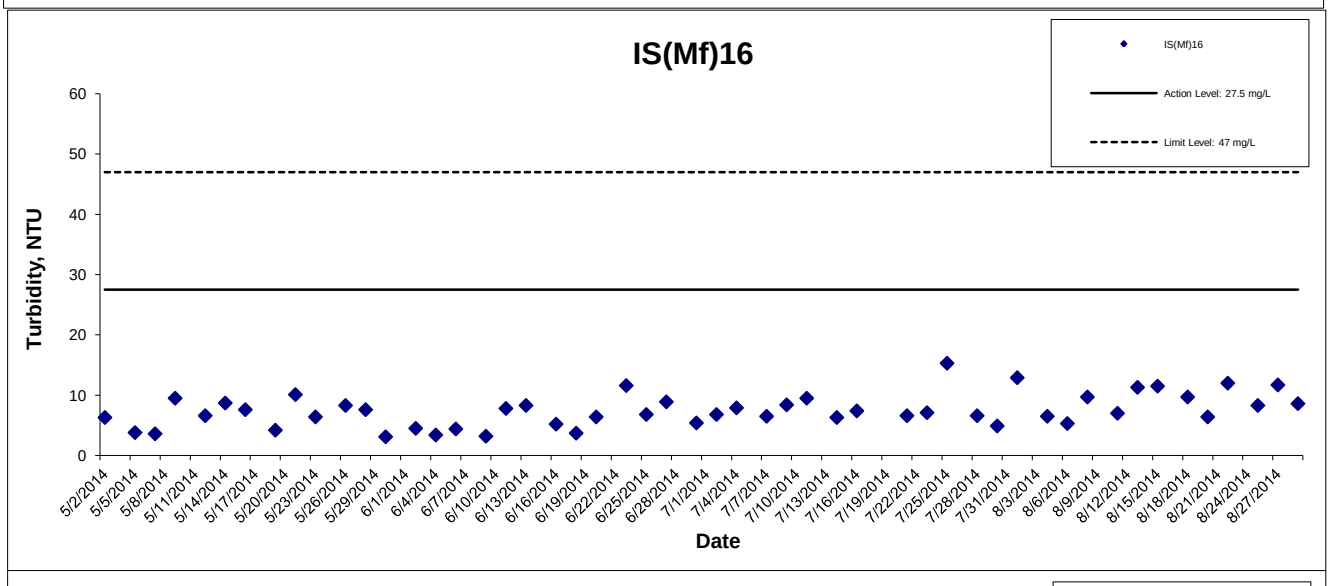

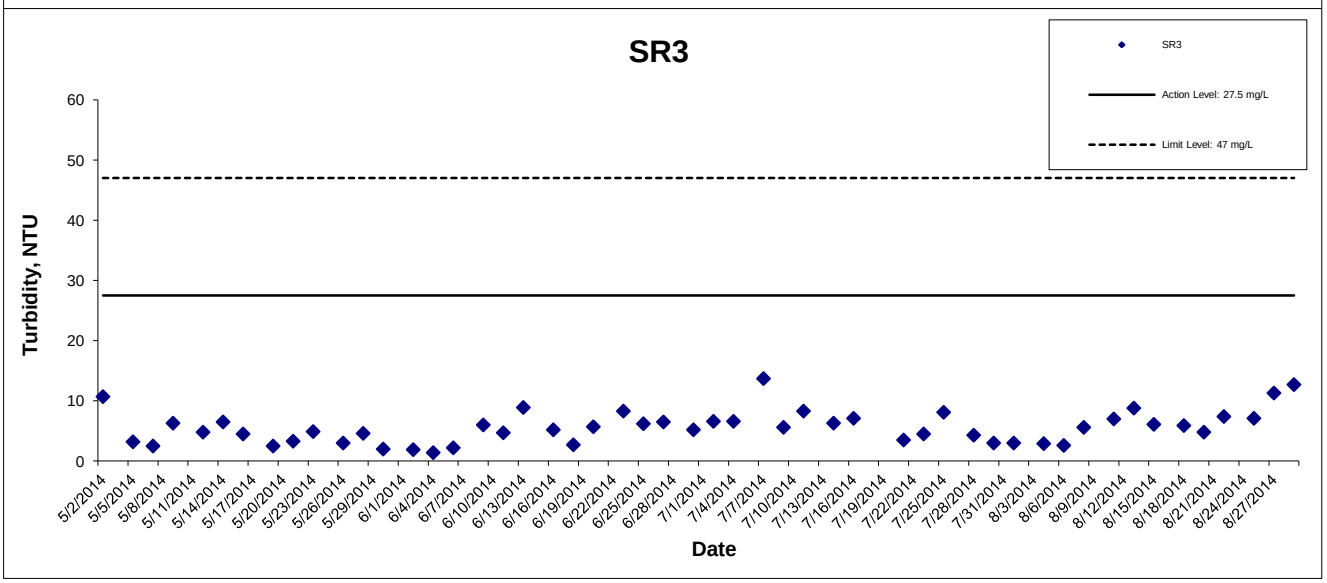

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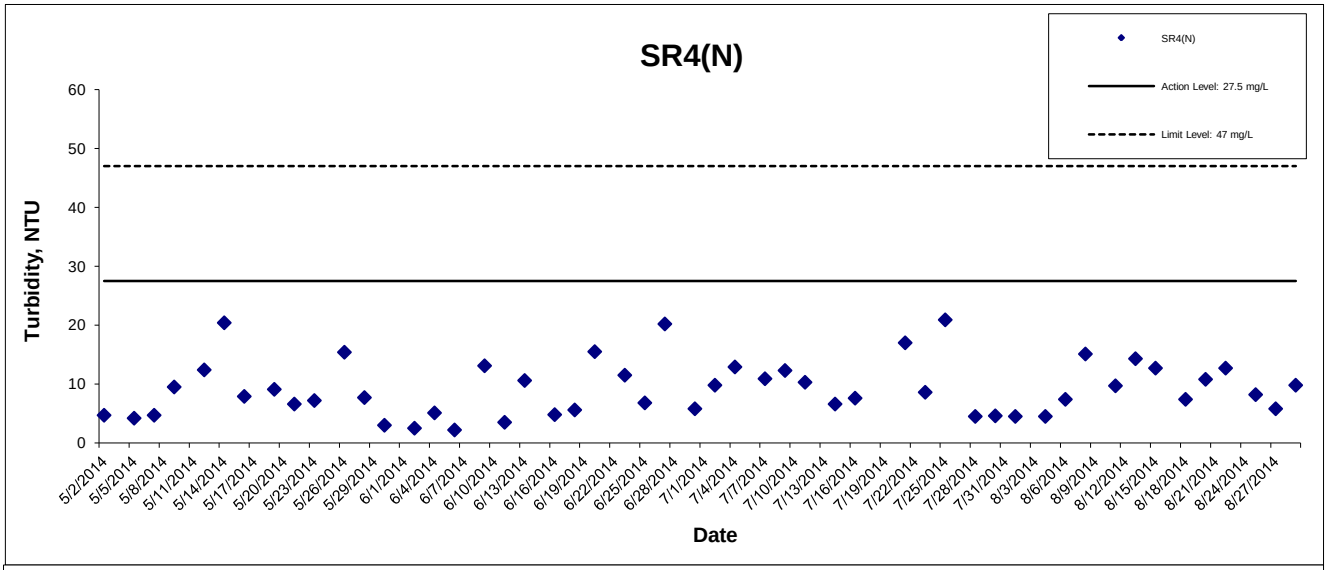
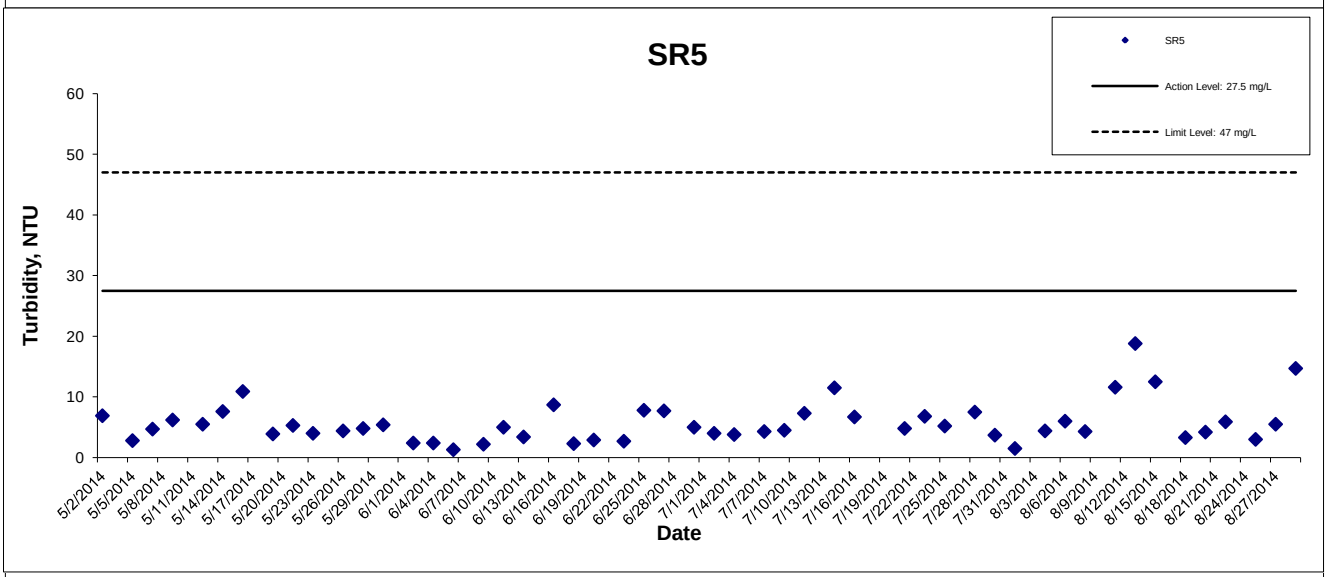
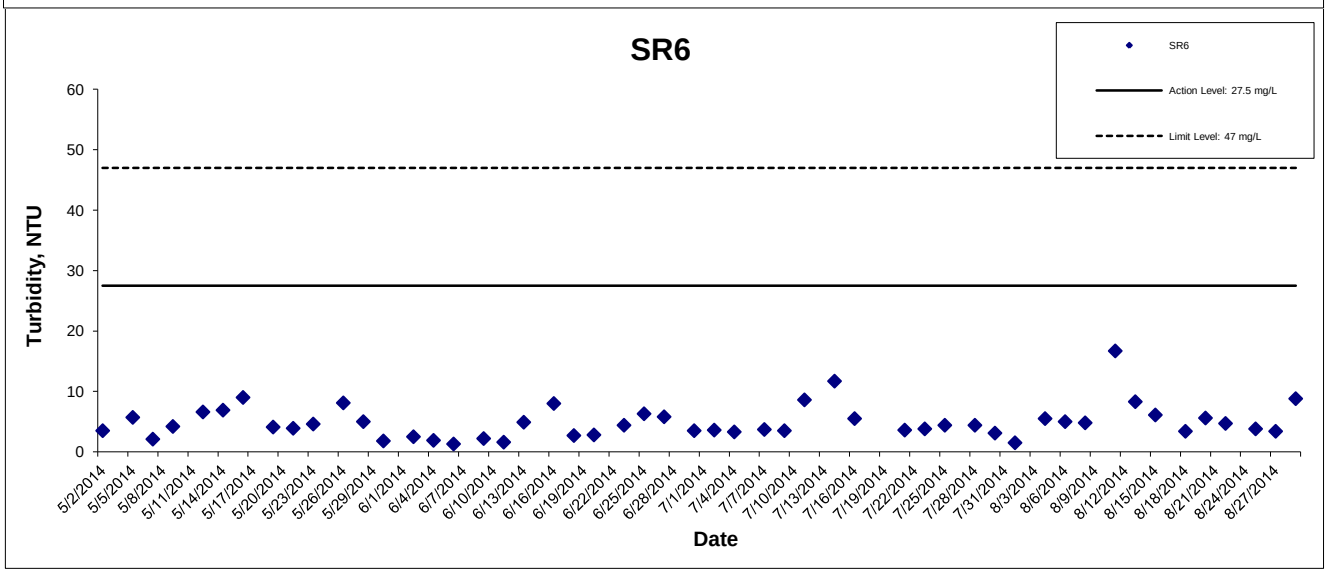
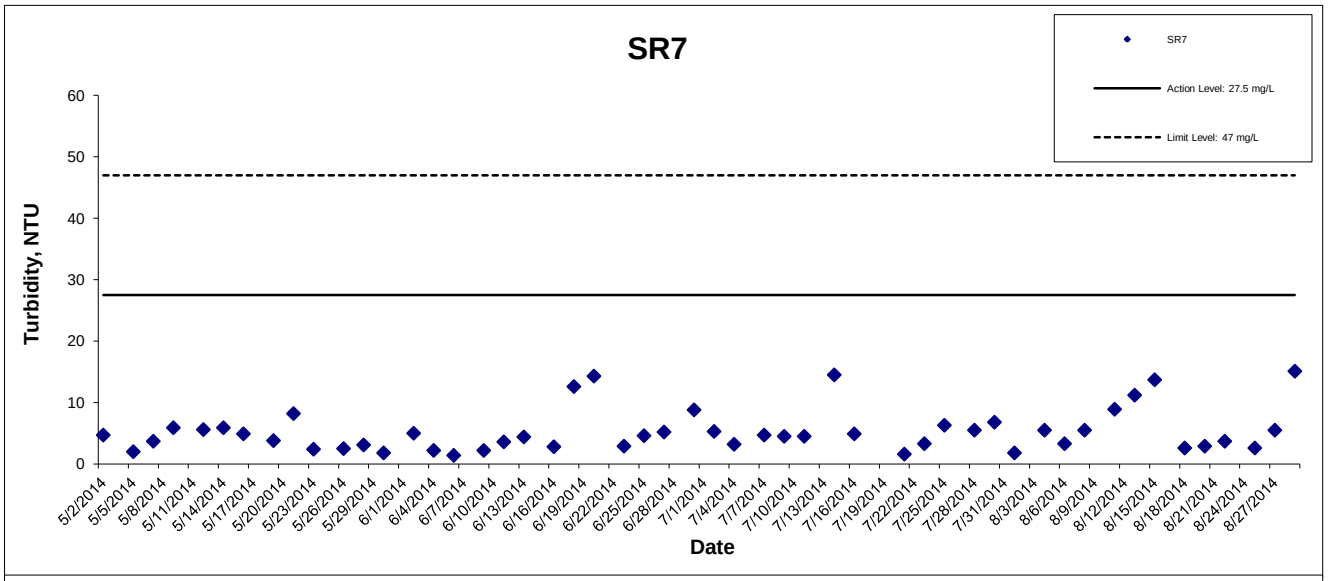
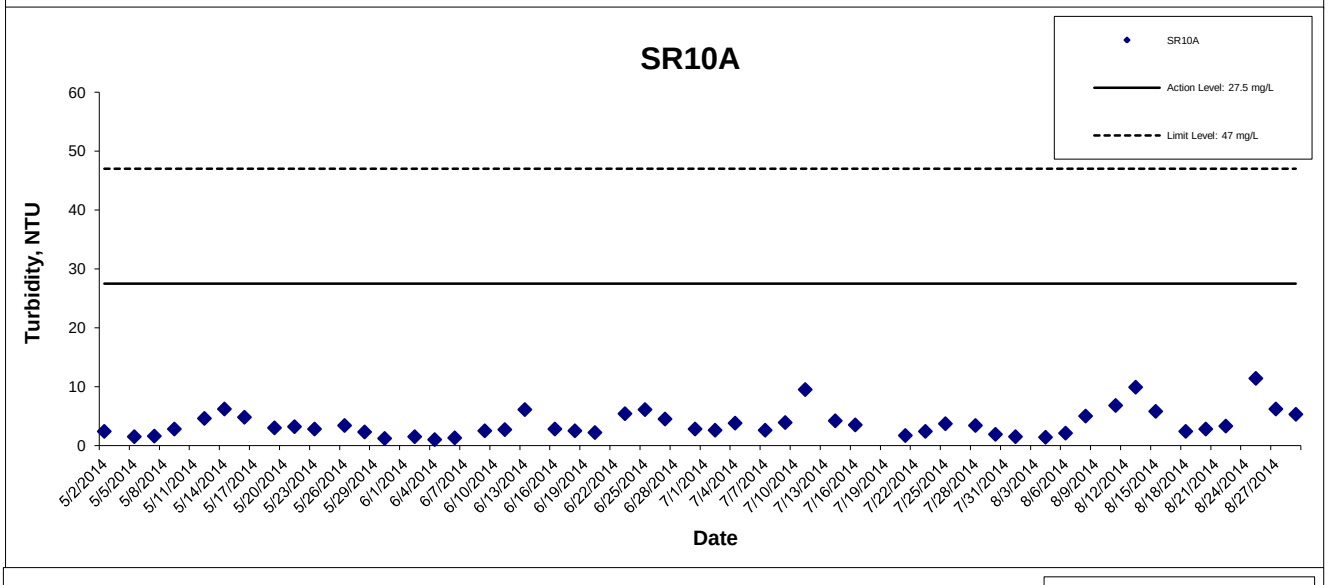


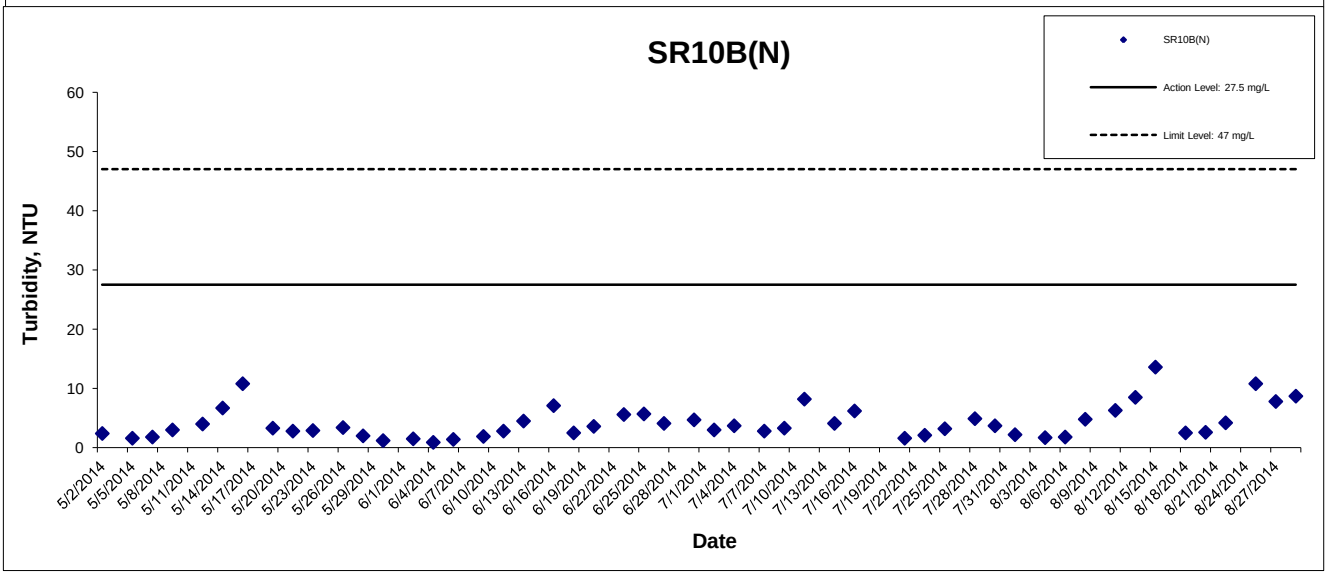




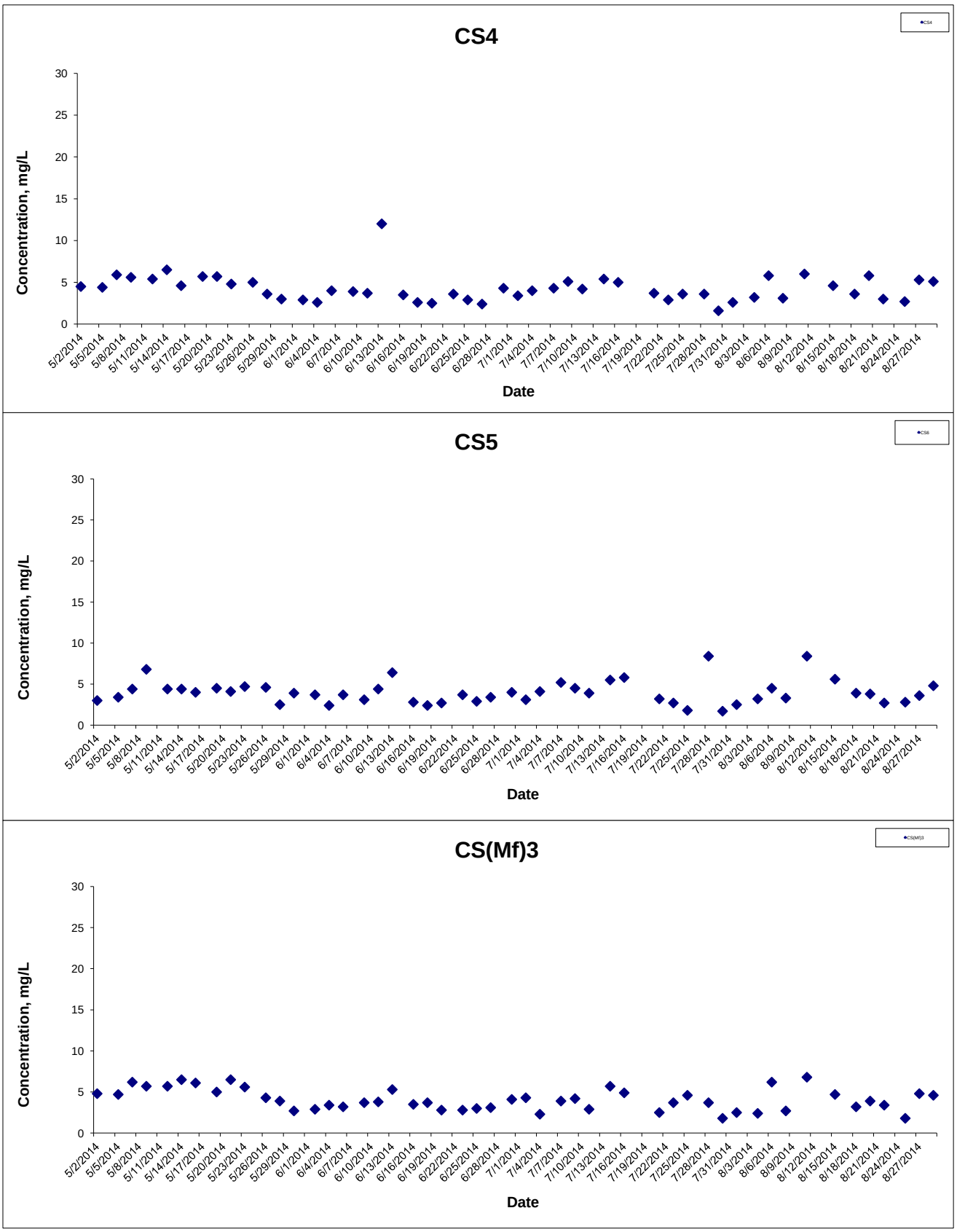
Turbidity at Mid-Flood Tide







Suspended Solids at Mid-Ebb Tide



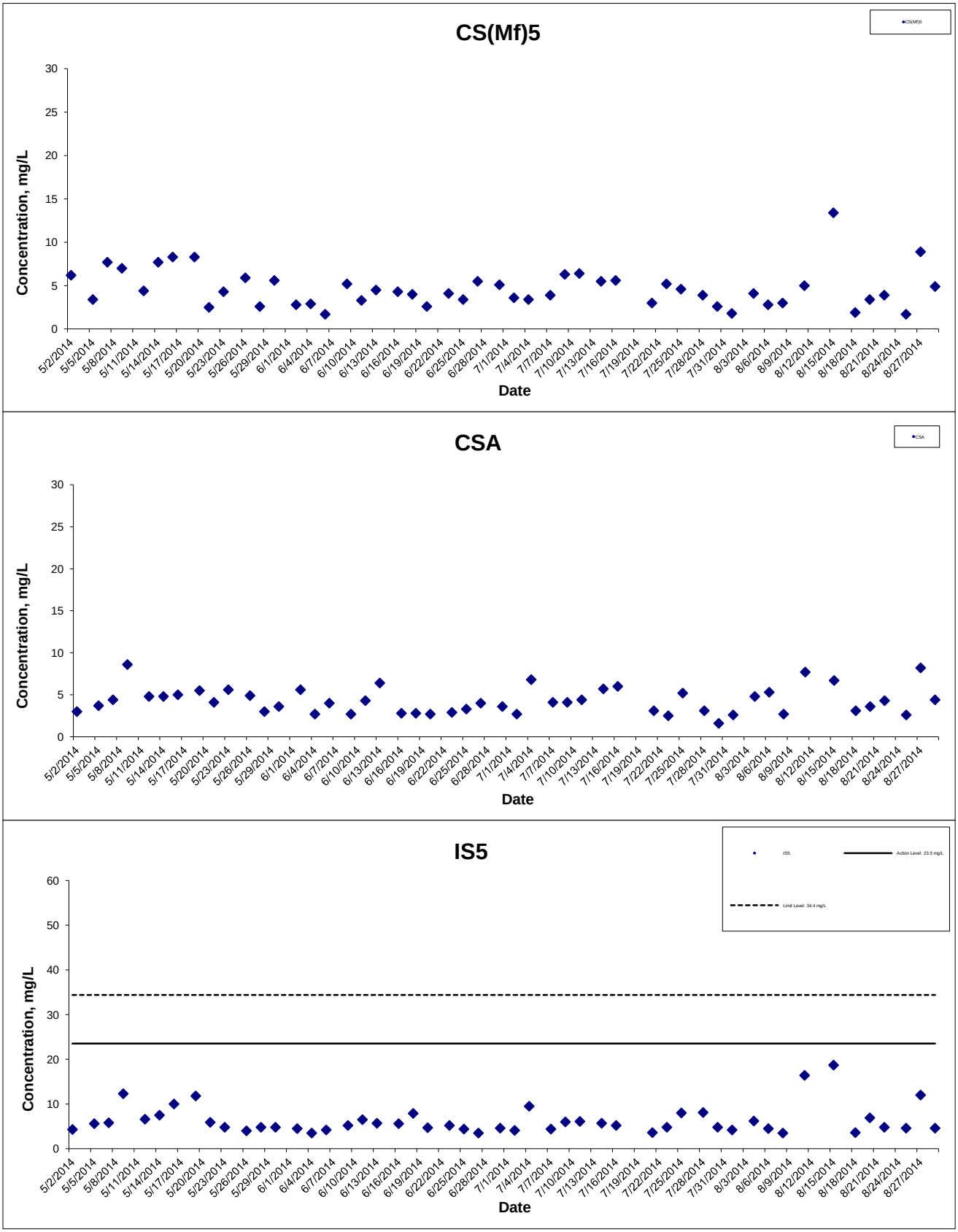
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

Graphical Presentation of Impact Water Quality Monitoring Results

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

Appendix J

Suspended Solids at Mid-Ebb Tide



HONG KONG - ZHUHAI - MACAO BRIDGE
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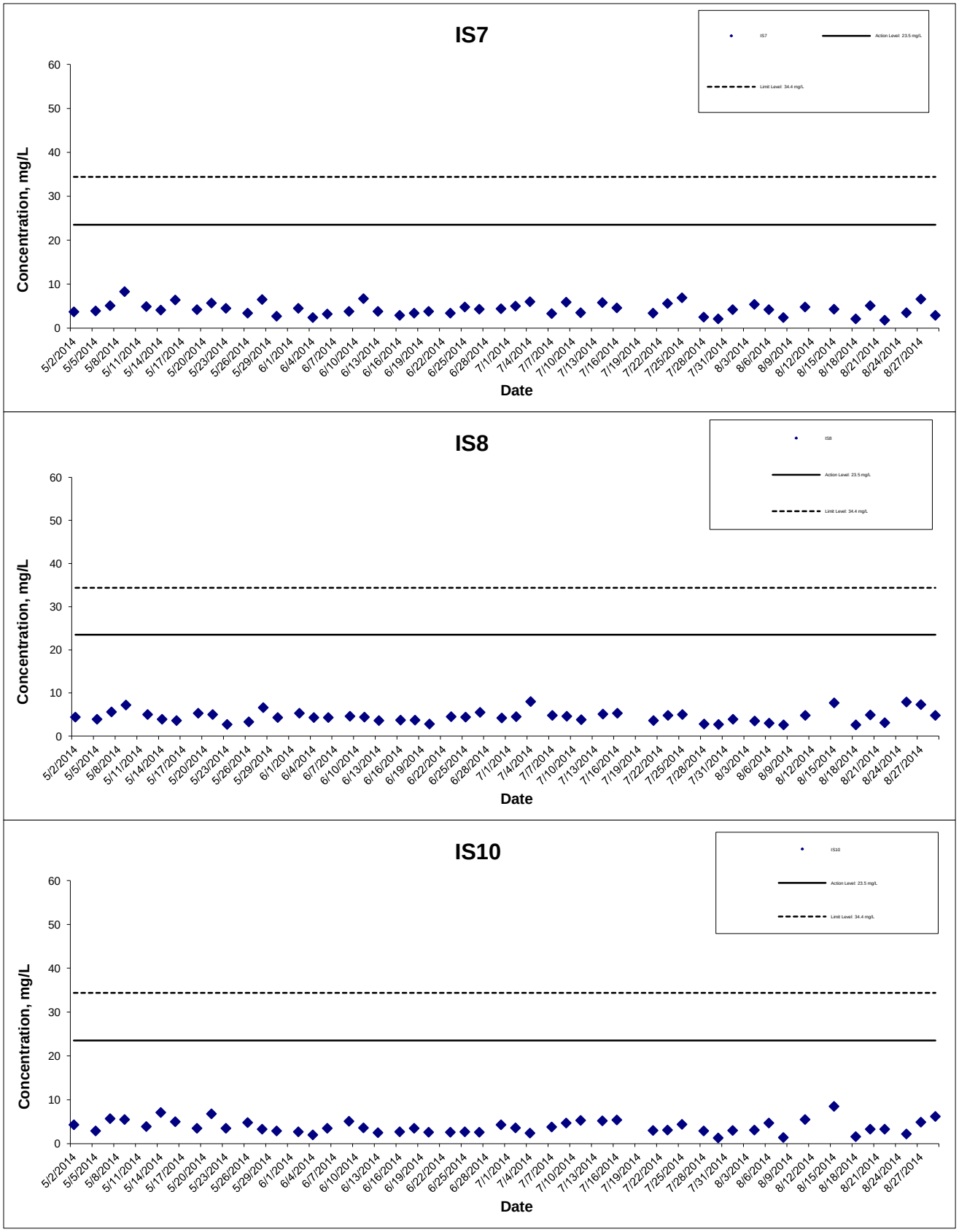

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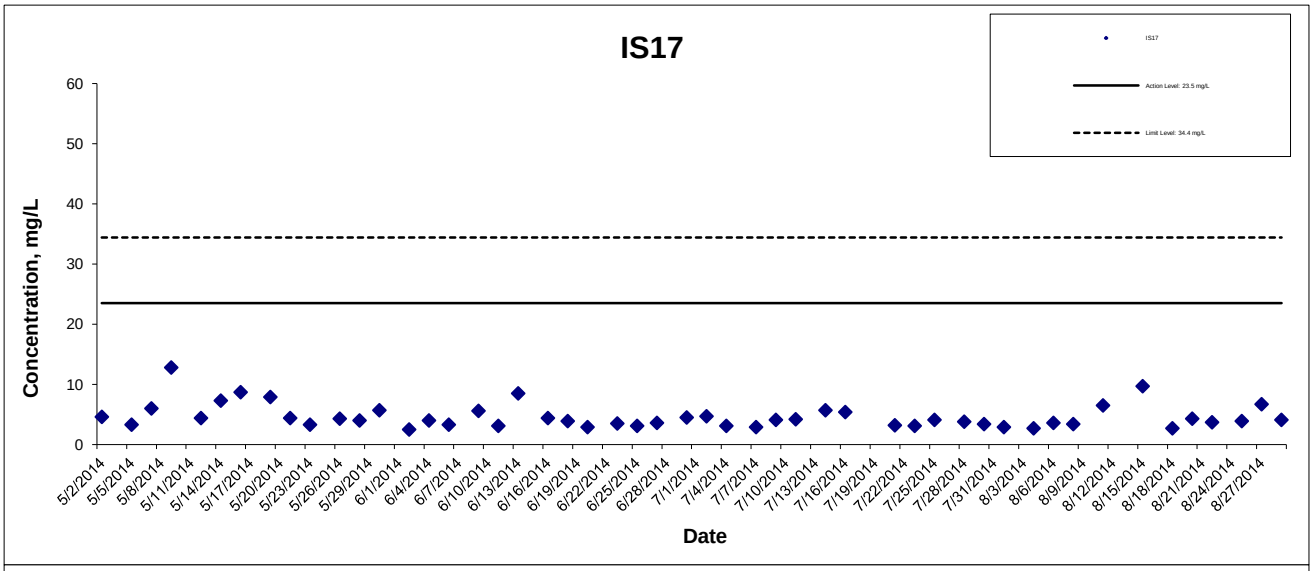
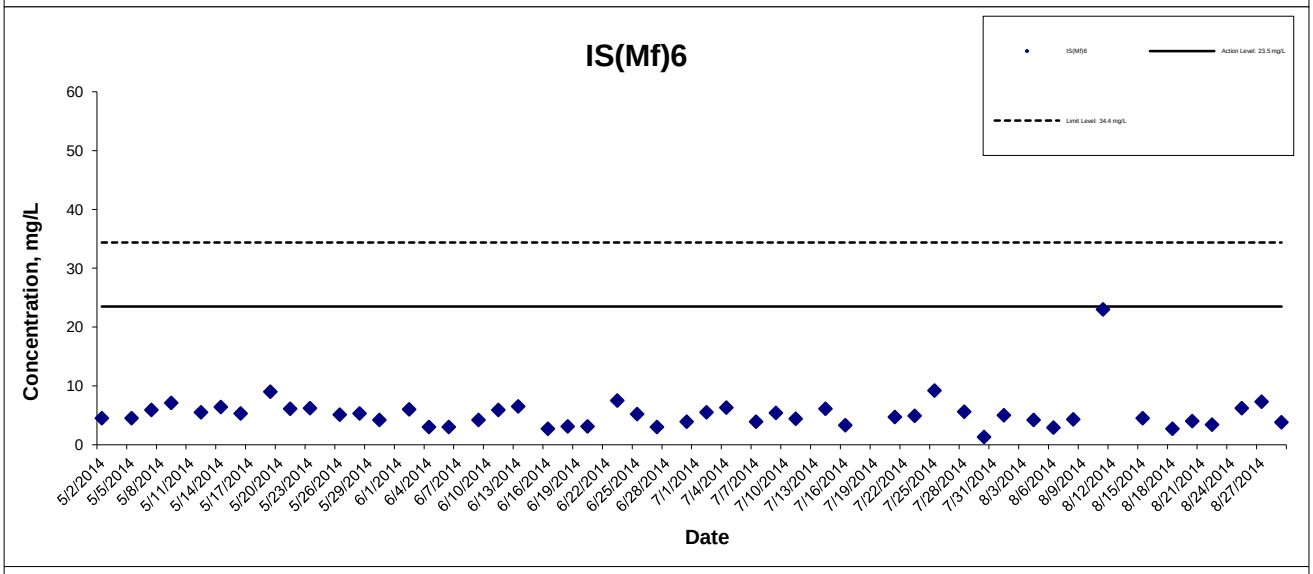
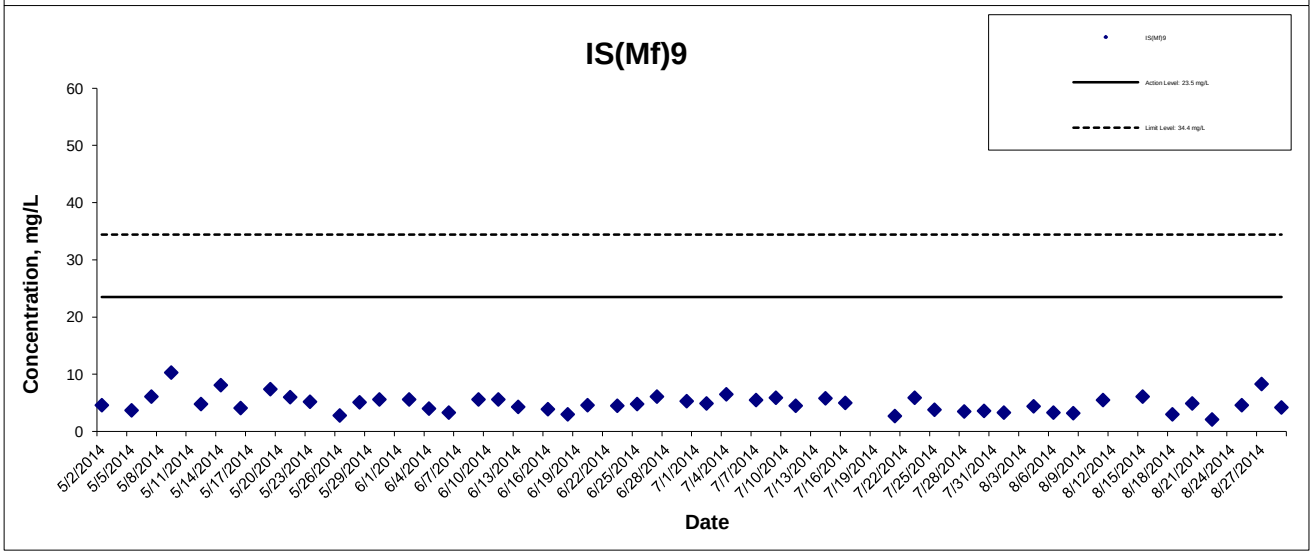
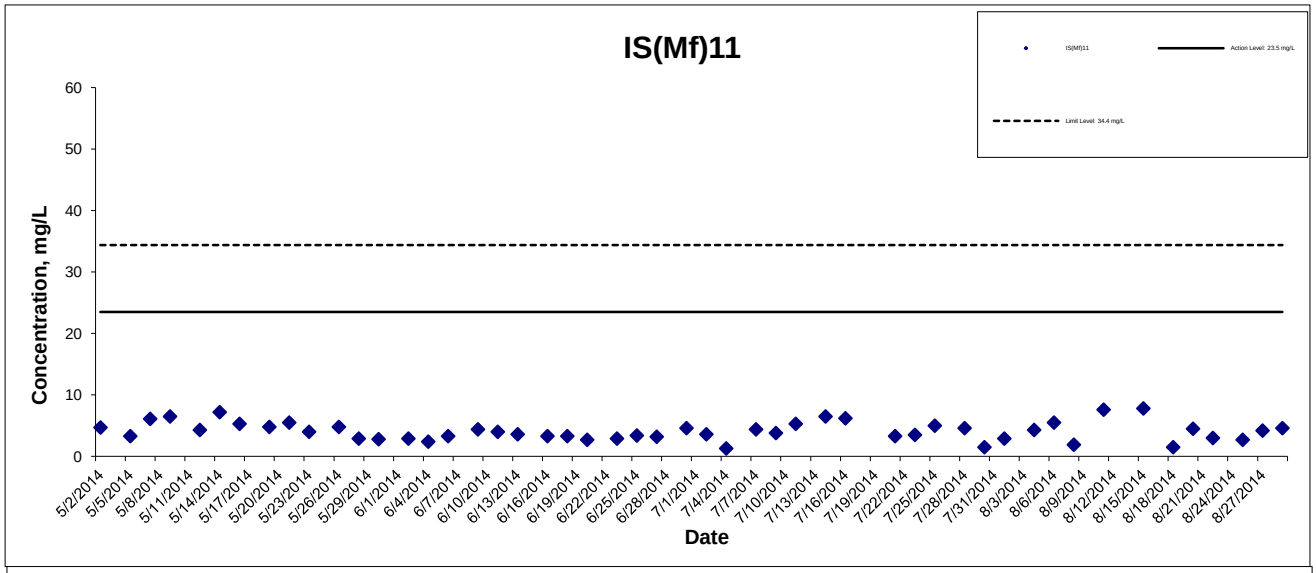
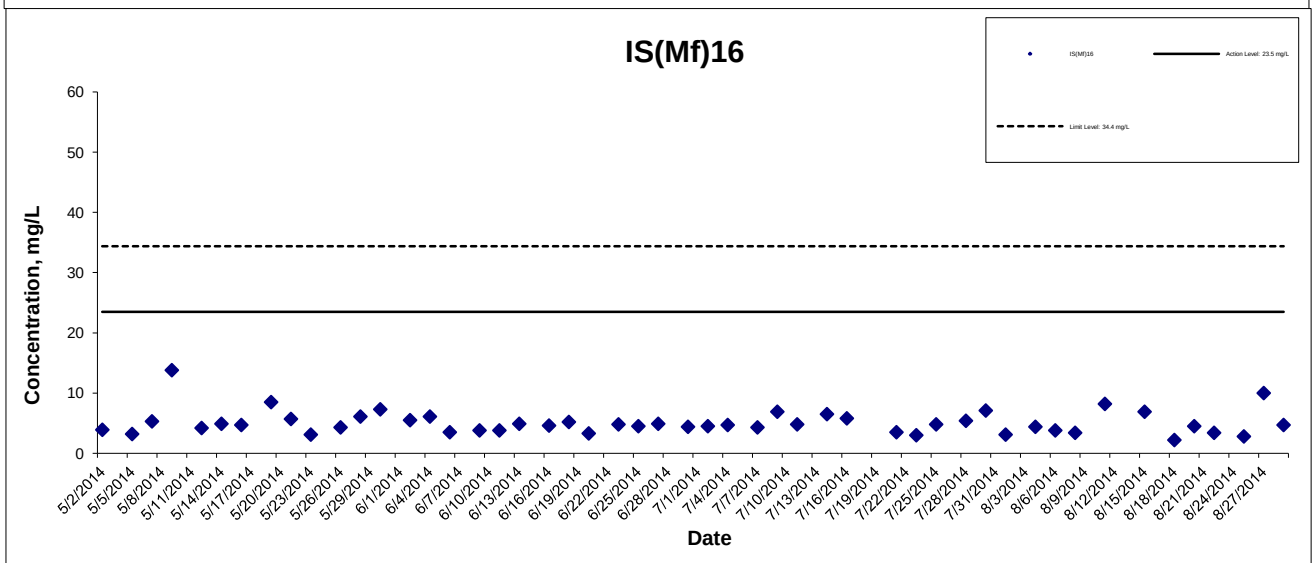


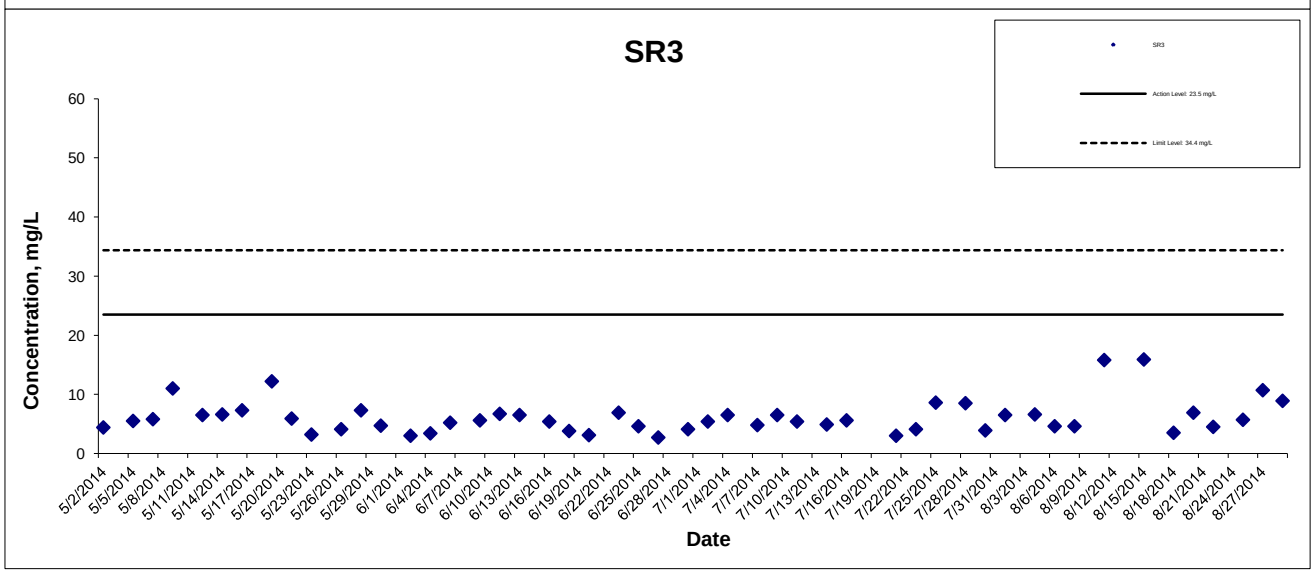




Suspended Solids at Mid-Ebb Tide







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

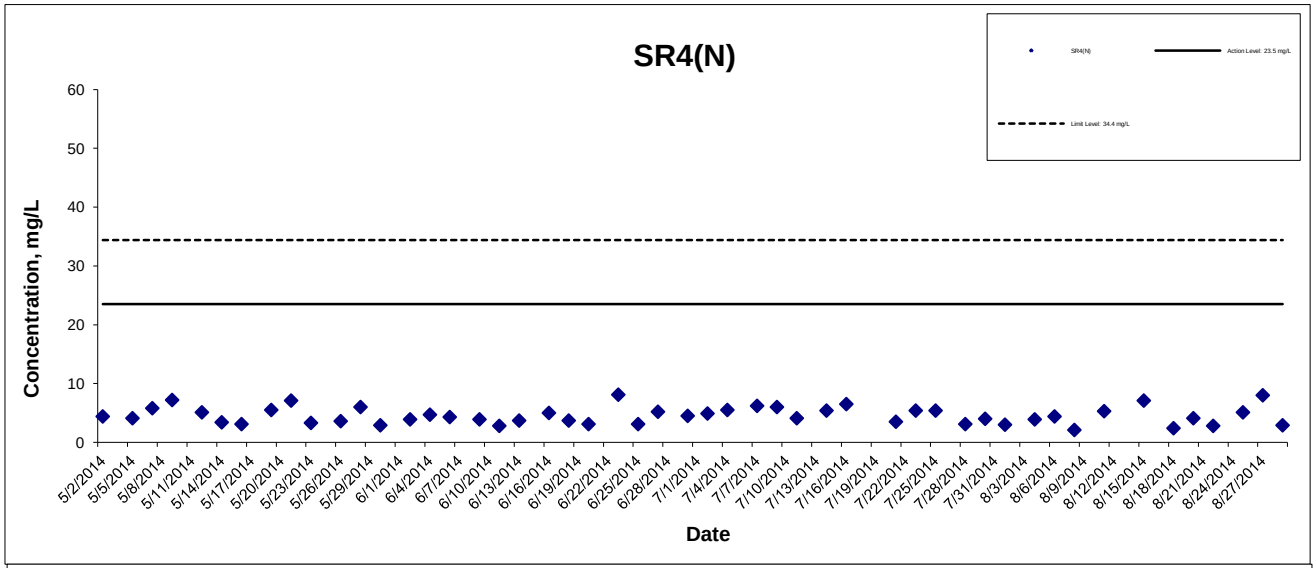
AECOM

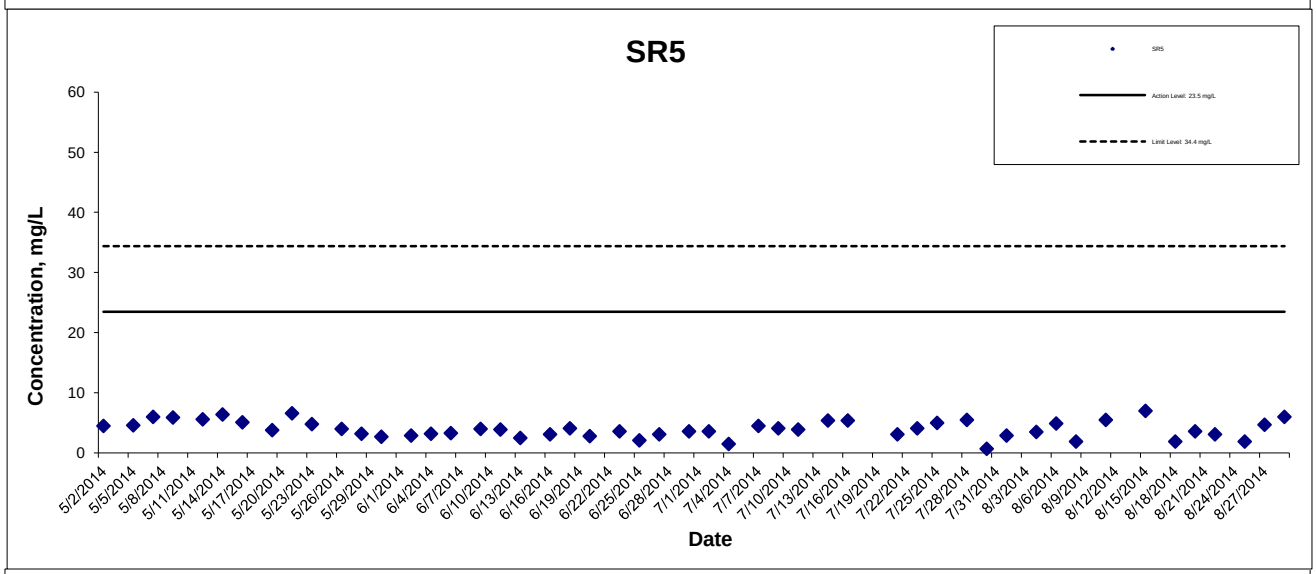
Graphical Presentation of Impact Water Quality Monitoring Results

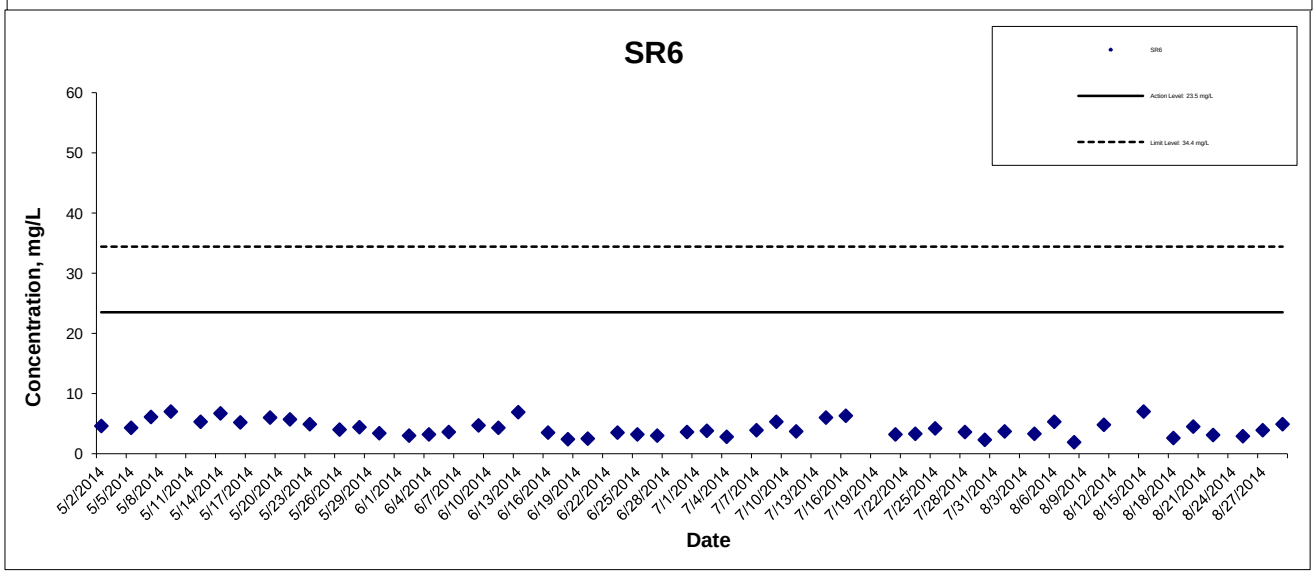
Project No.: 60249820 **Date: Sep 2014**

Appendix J

Suspended Solids at Mid-Ebb Tide







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

AECOM

Graphical Presentation of Impact Water Quality Monitoring Results

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

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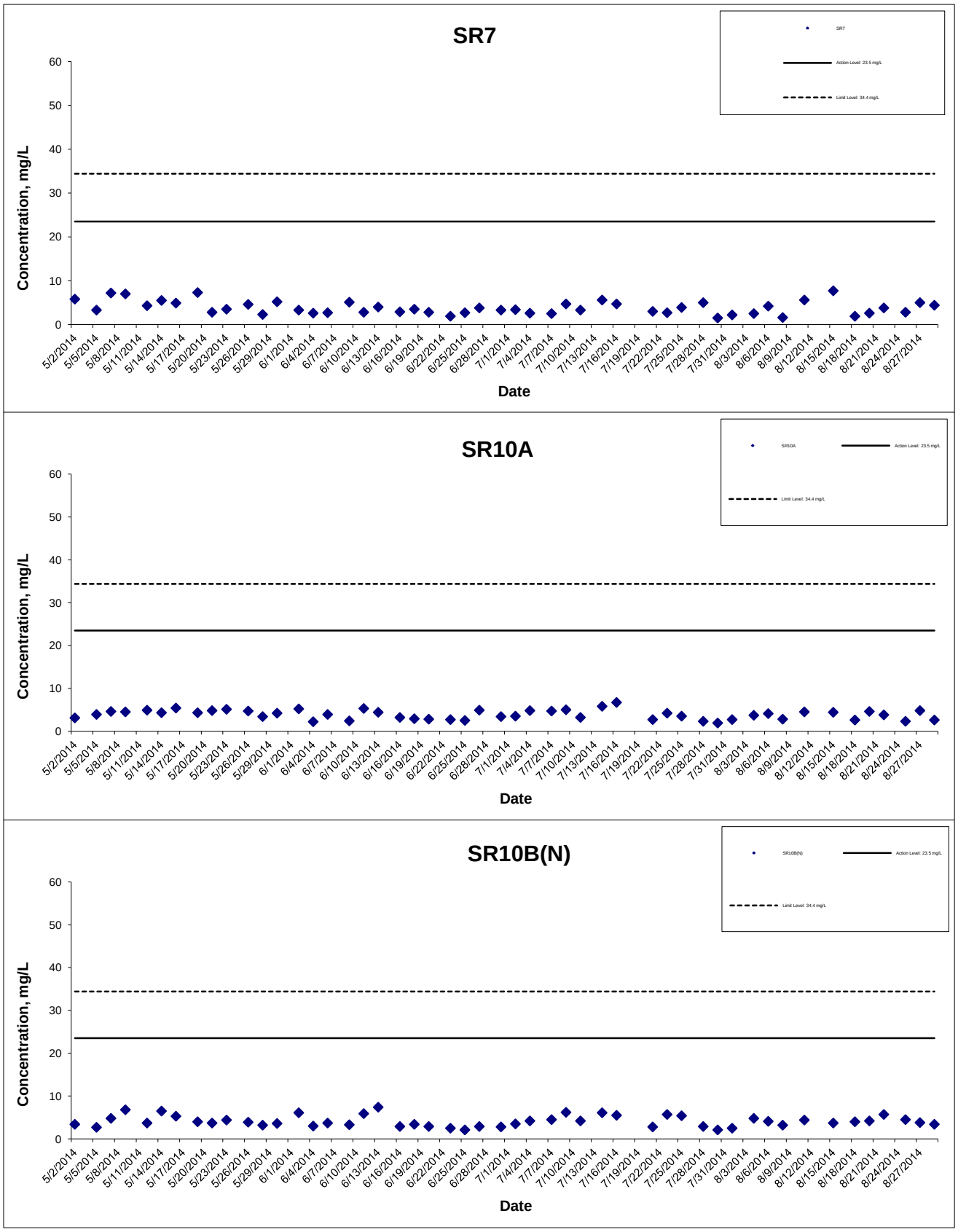

HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

Graphical Presentation of Impact Water Quality Monitoring Results

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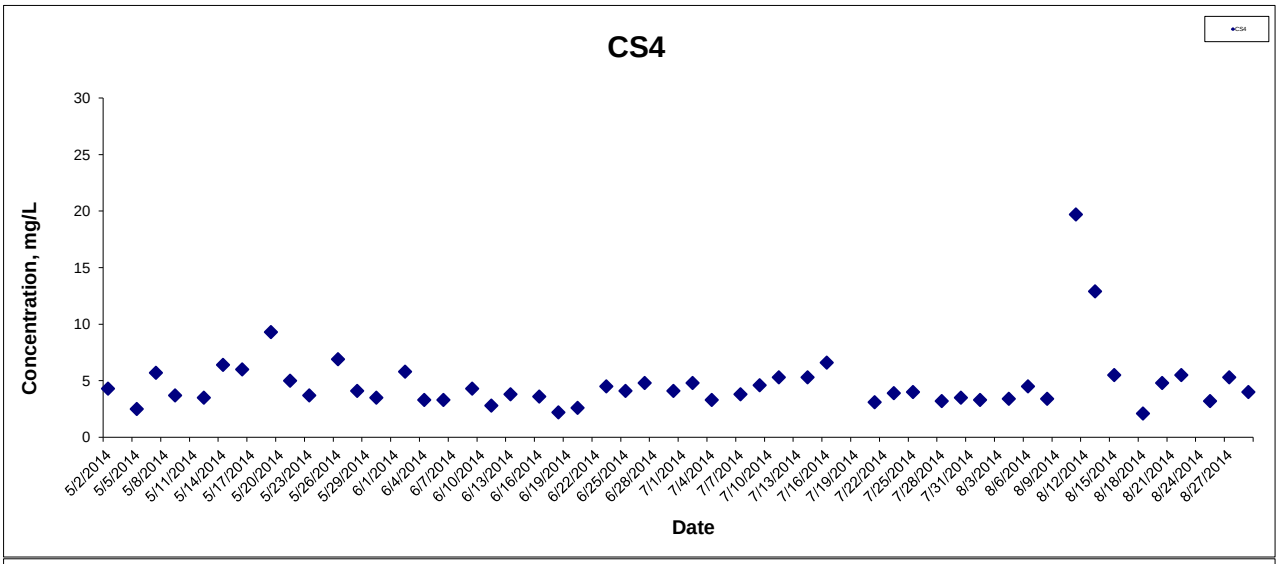
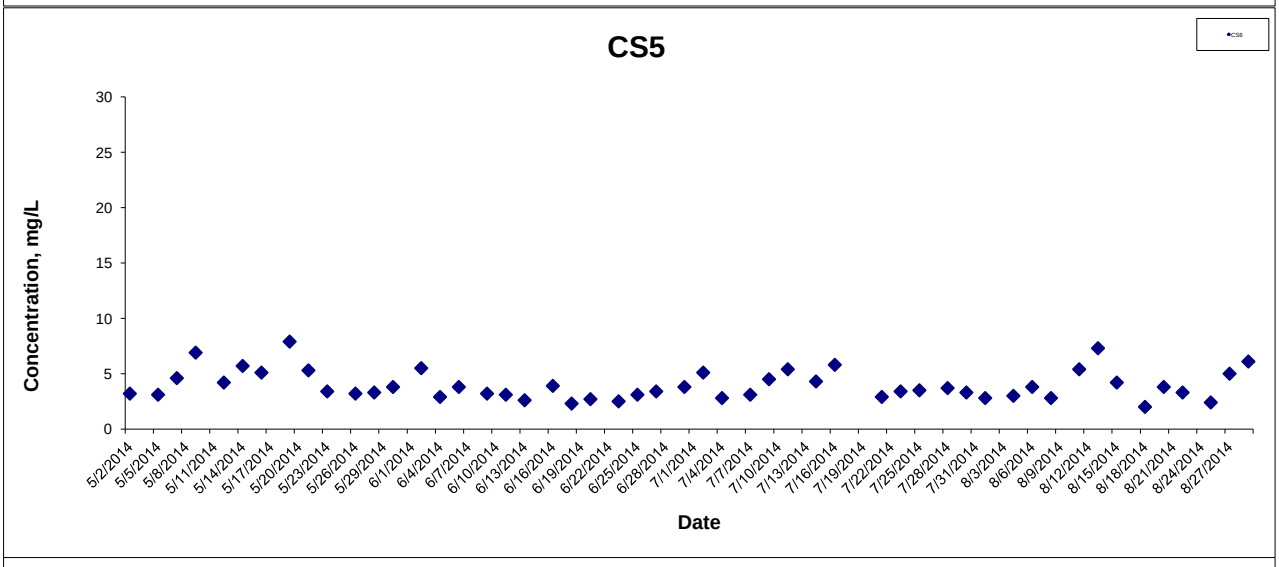
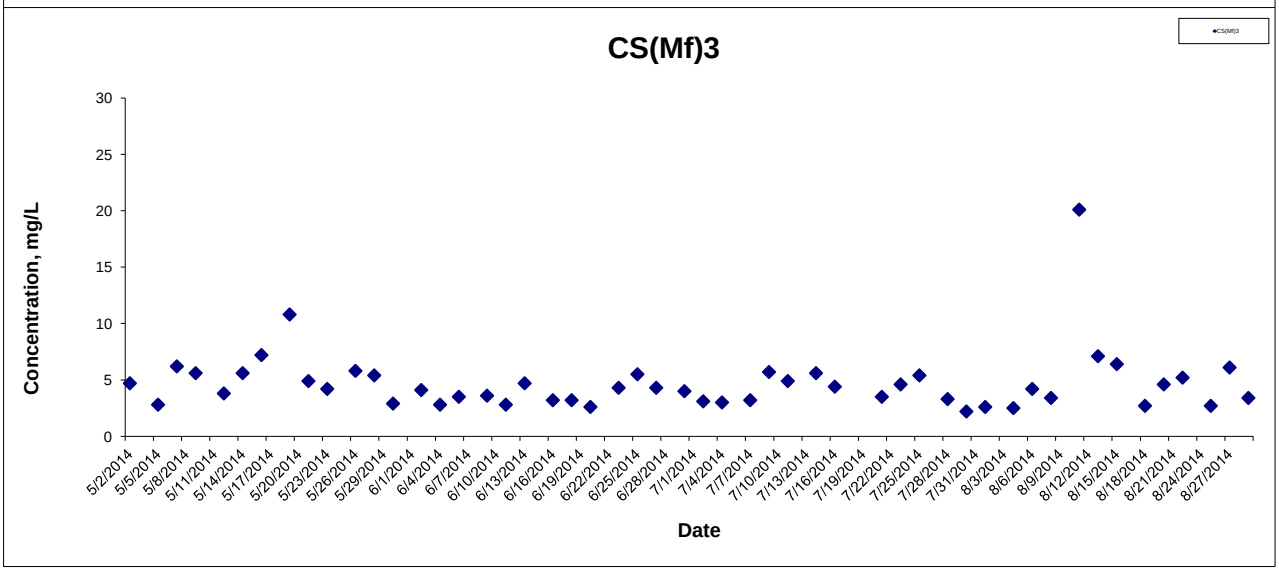
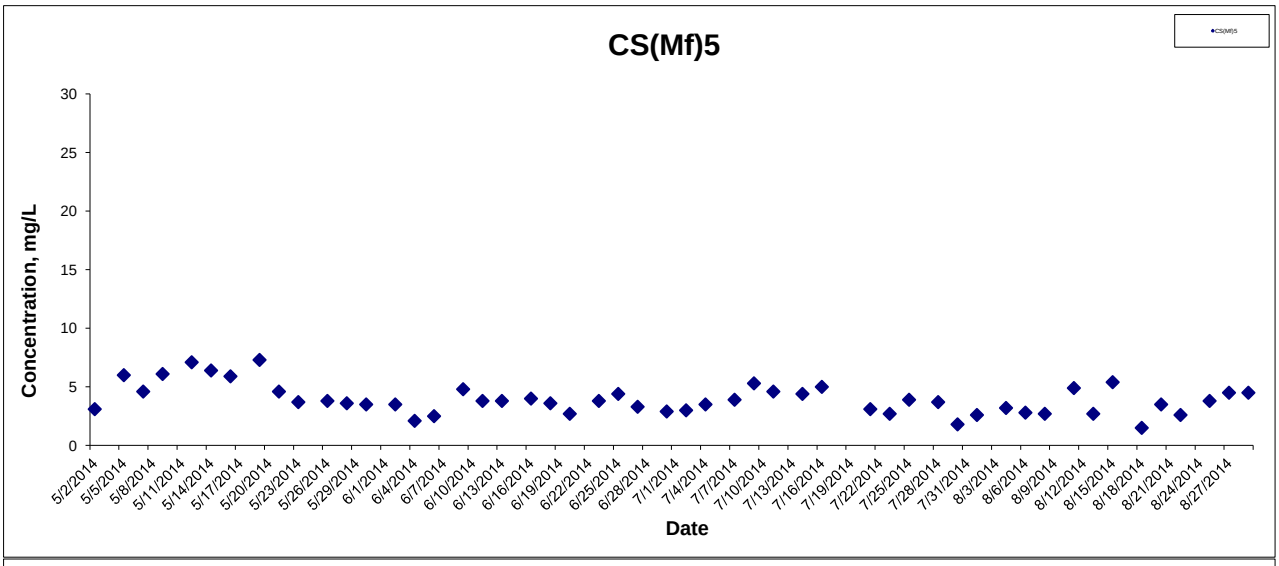
Suspended Solids at Mid-Flood Tide

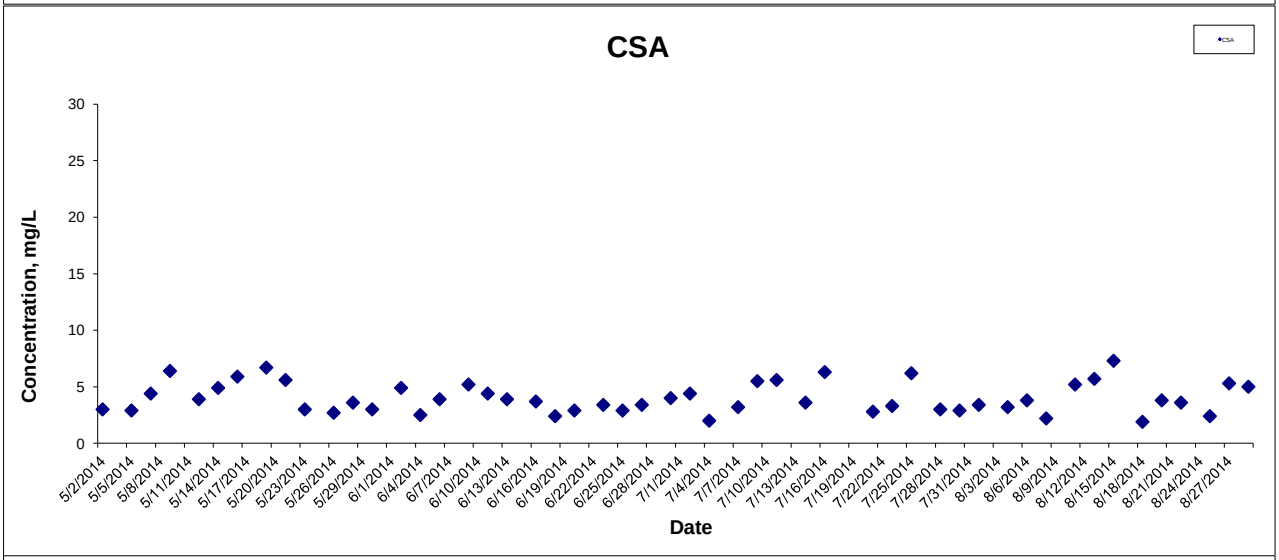


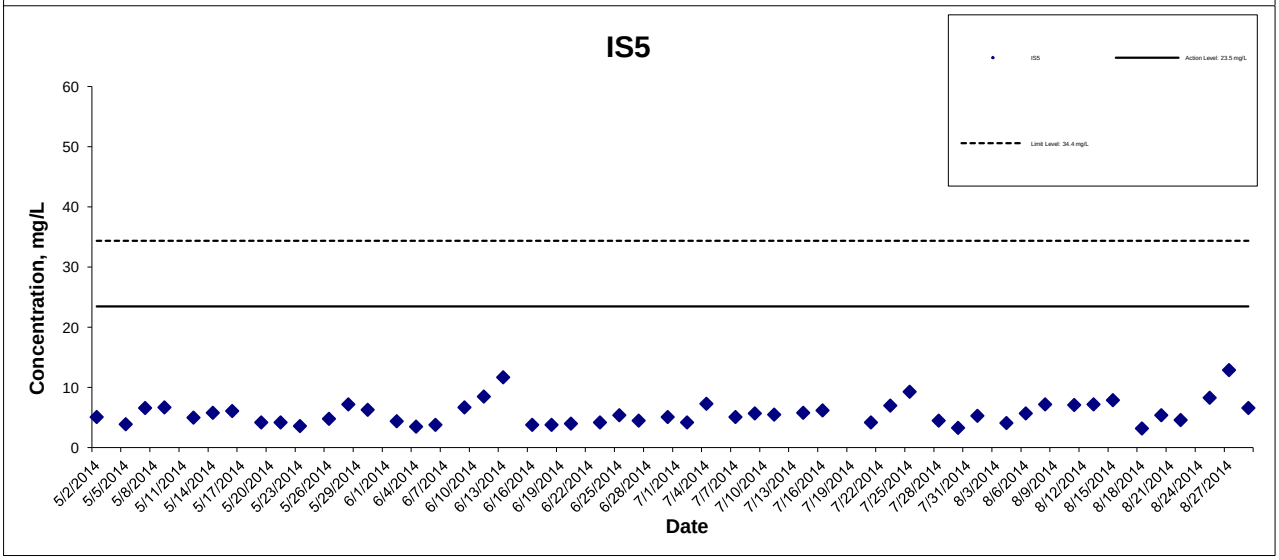




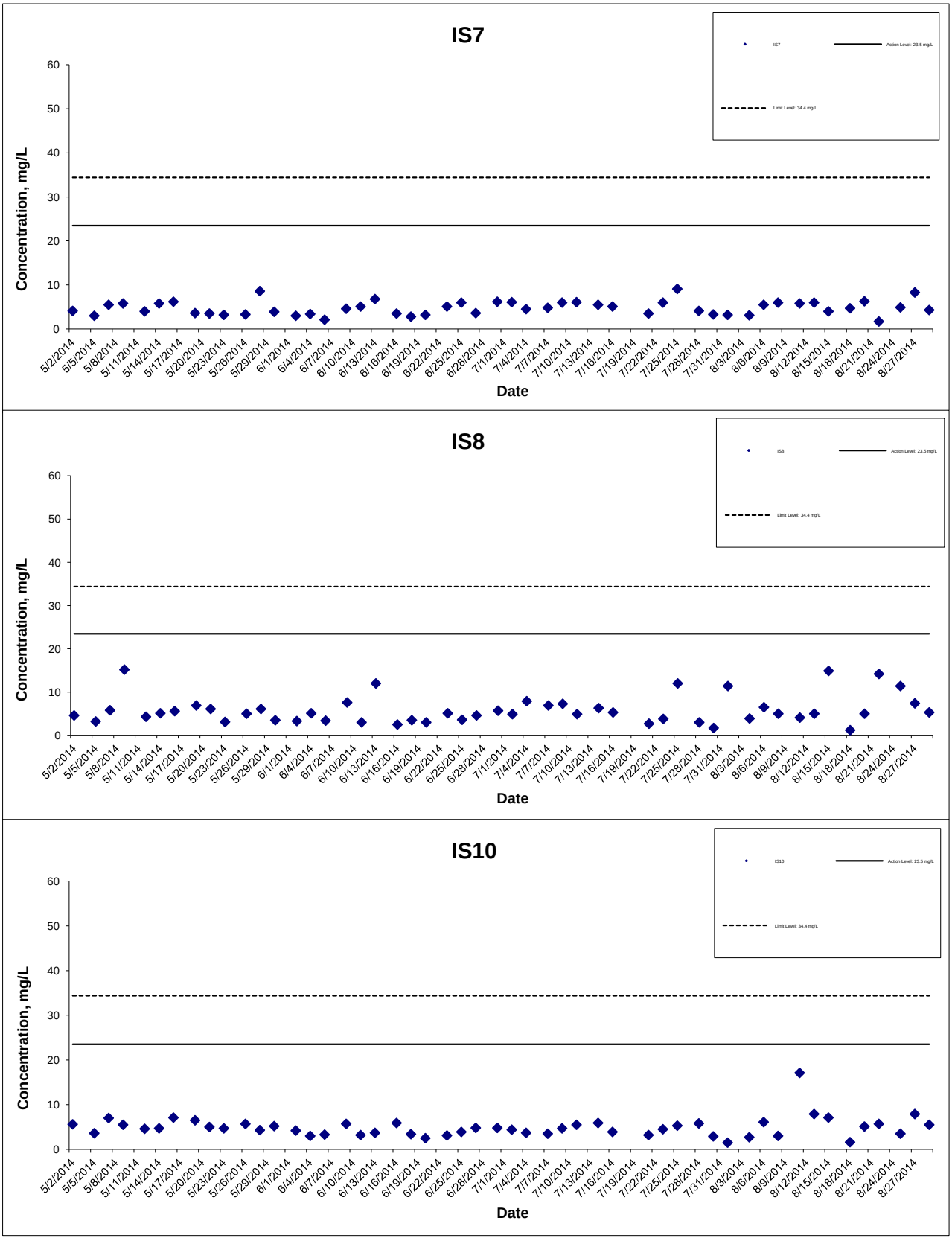
Suspended Solids at Mid-Flood Tide







Suspended Solids at Mid-Flood Tide



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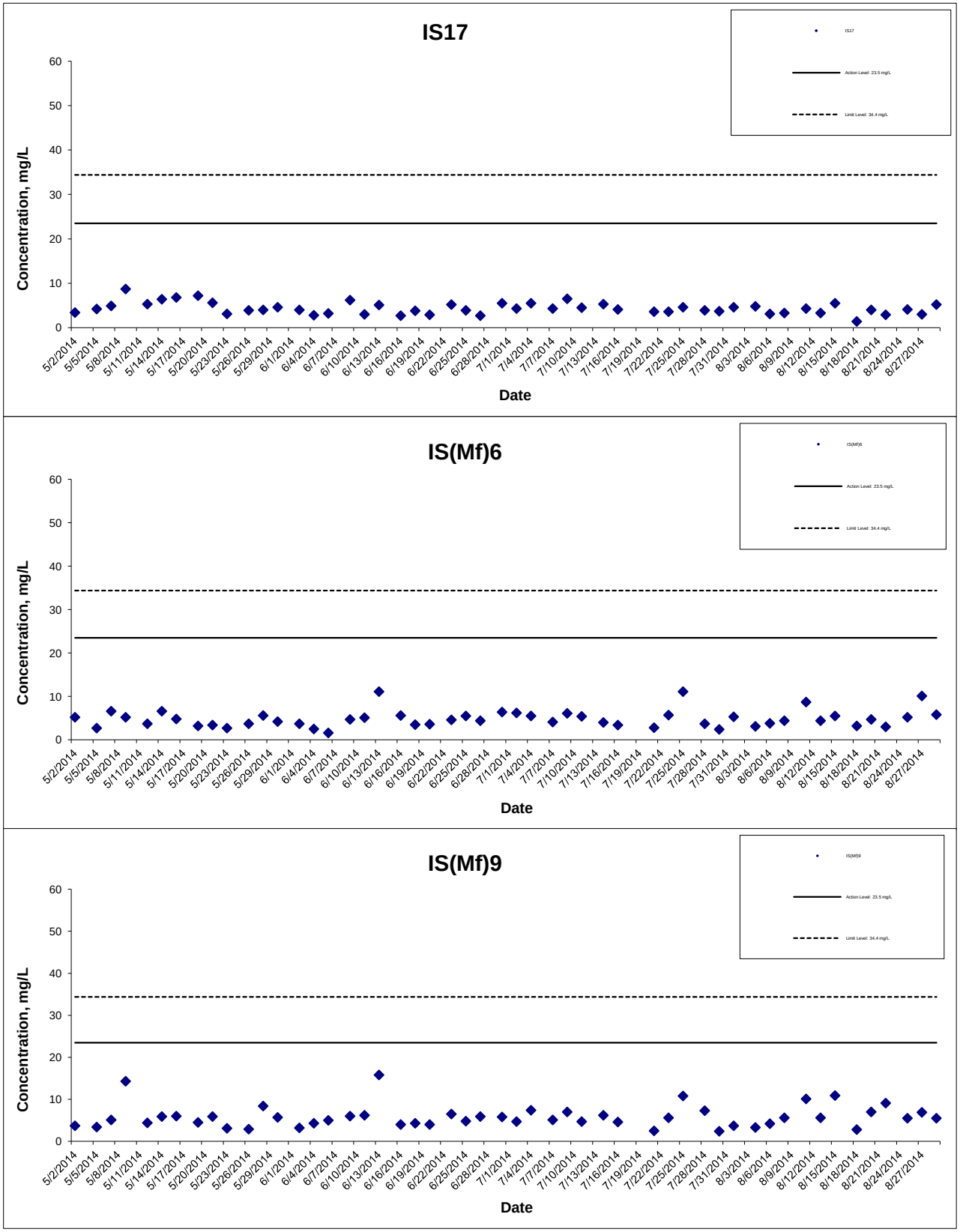
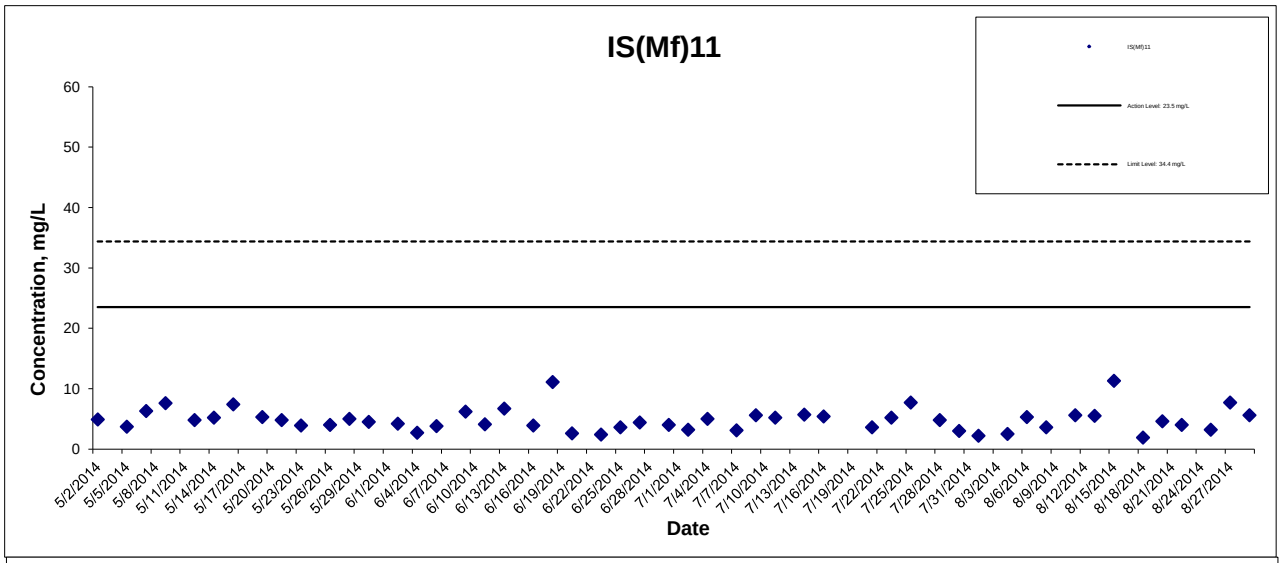
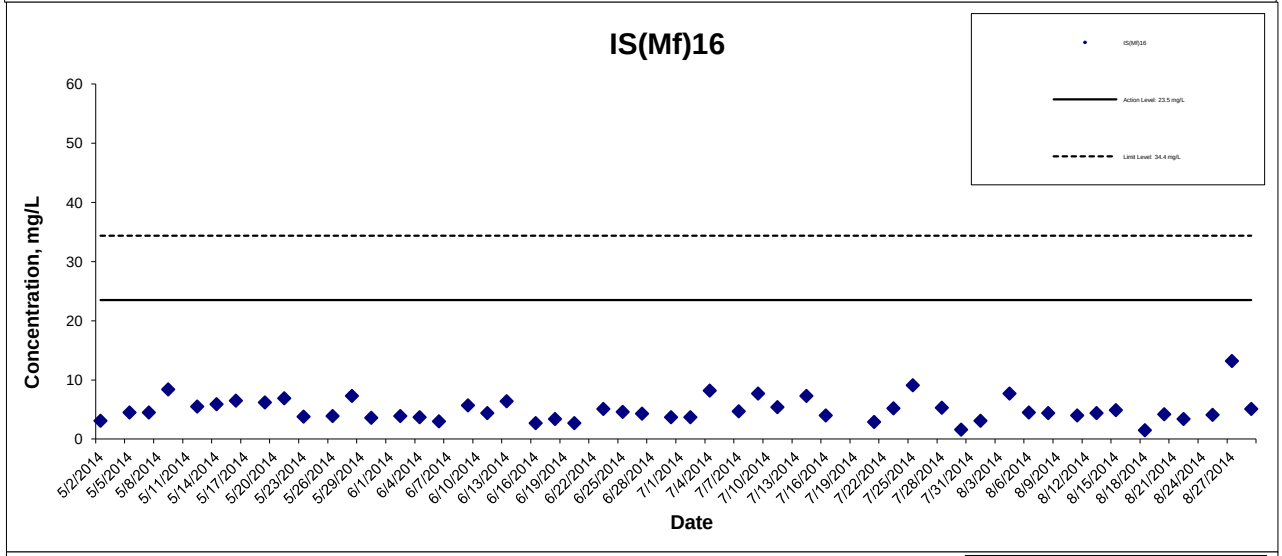
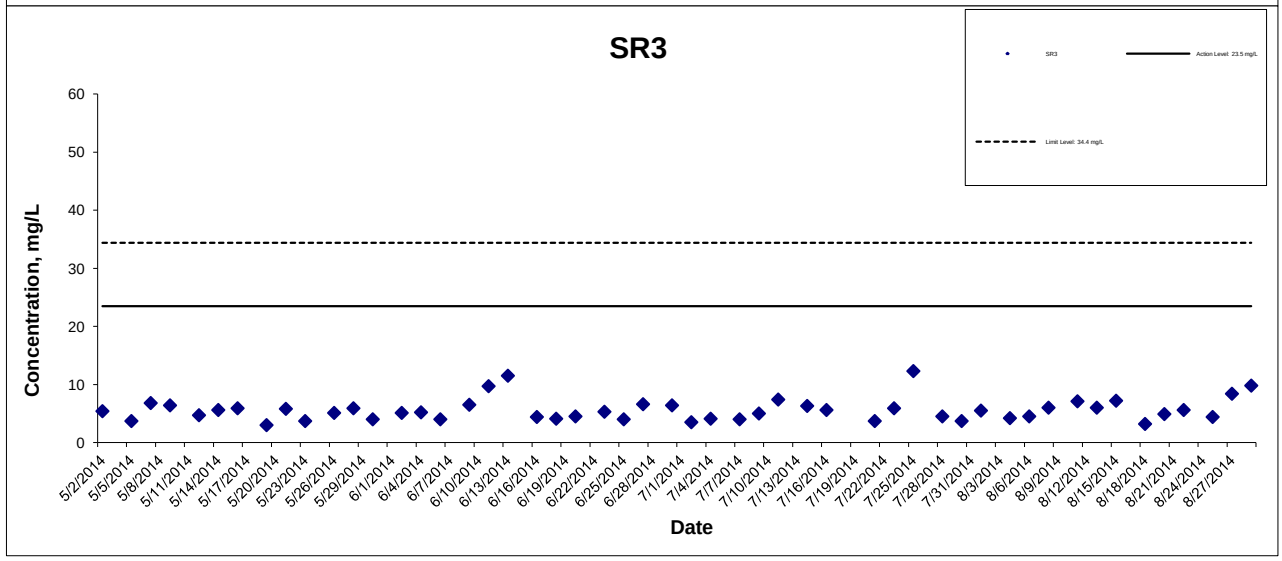


Suspended Solids at Mid-Flood Tide







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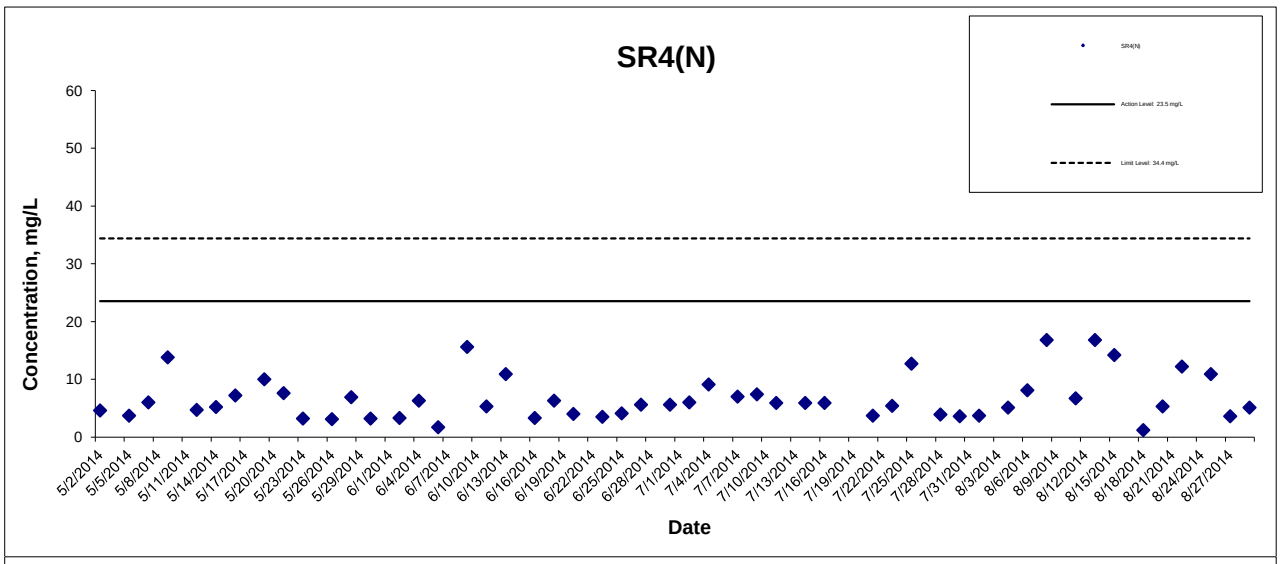

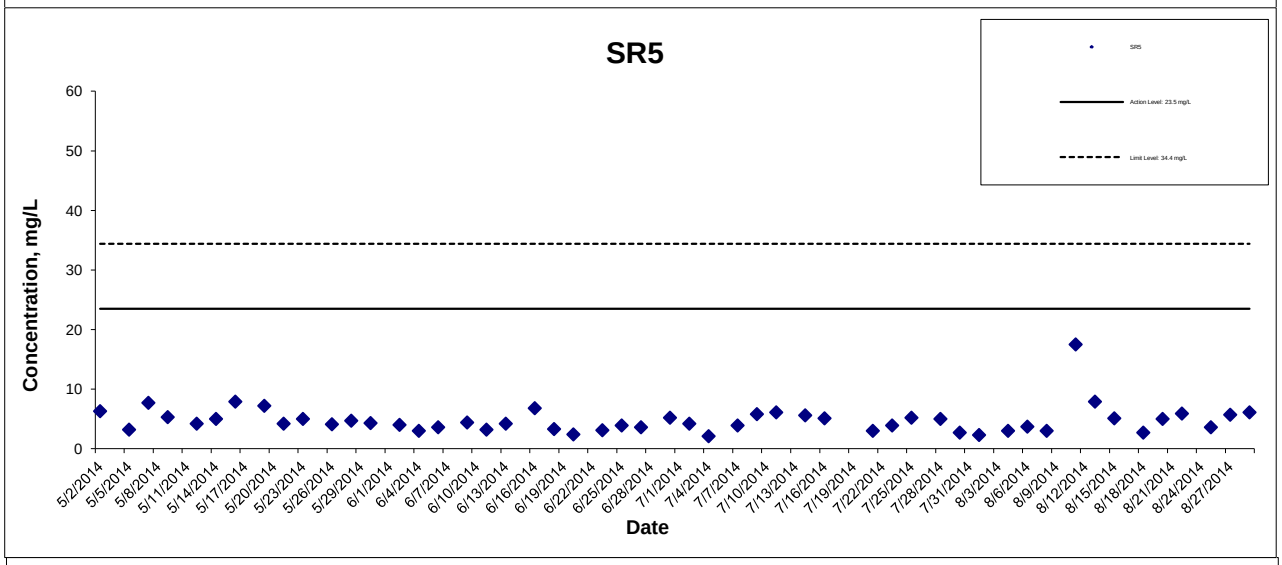

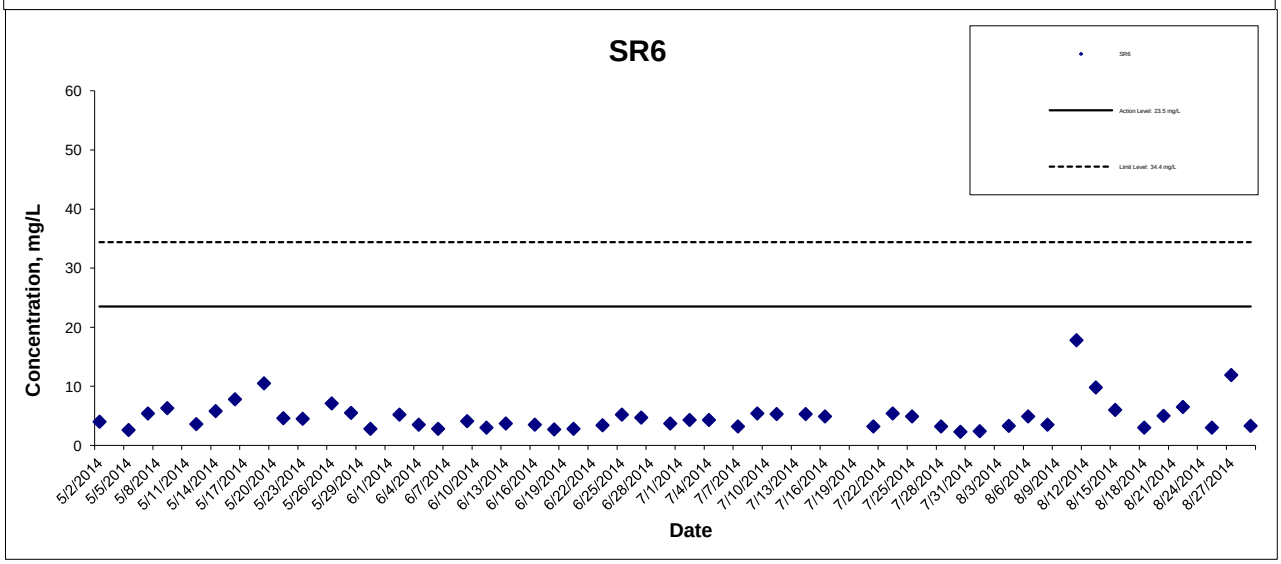

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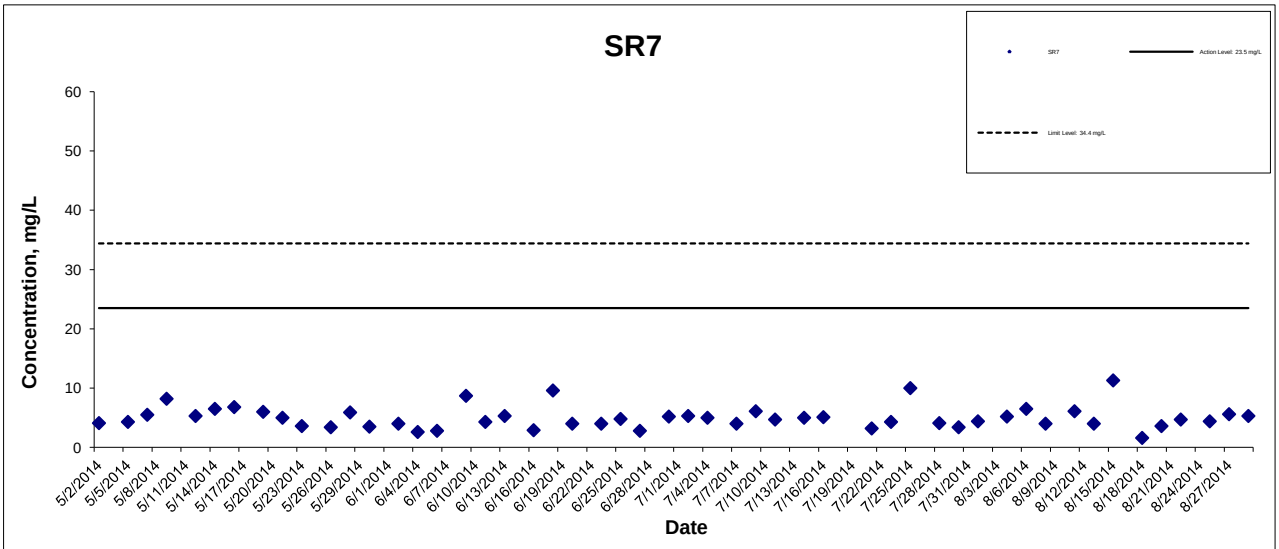

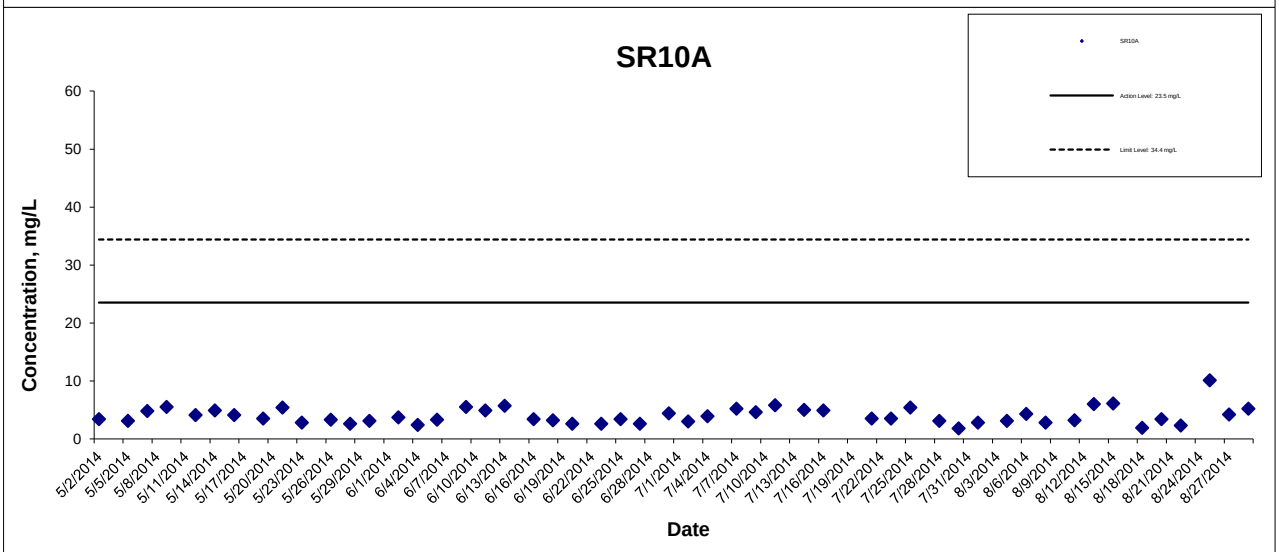

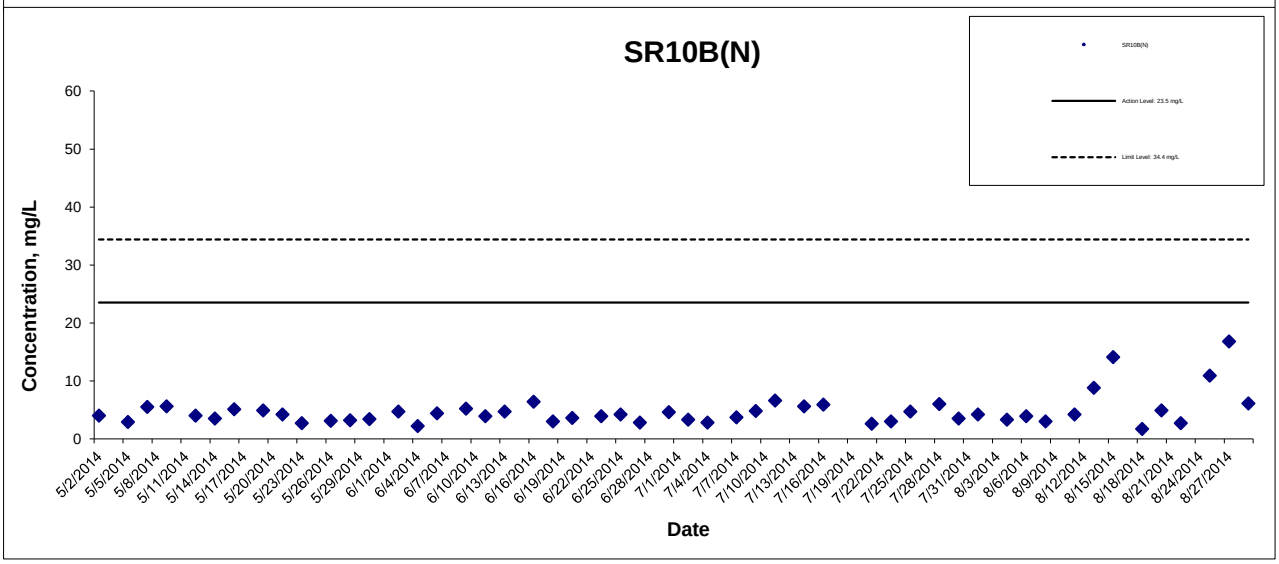

Appendix K Impact Dolphin Monitoring Survey Sighting Summary

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	04-Aug-14	988	9:19	1	NWL	2	N/A	Opp	Impact	813844	803515	Summer	No
HKBCF	HY/2010/02	04-Aug-14	989	9:30	2	NWL	2	N/A	Opp	Impact	813890	803340	Summer	No
HKBCF	HY/2010/02	04-Aug-14	990	9:43	1	NWL	2	N/A	Opp	Impact	814124	803165	Summer	No
HKBCF	HY/2010/02	04-Aug-14	991	13:09	2	NWL	1	455	On	Impact	824375	806452	Summer	No
HKBCF	HY/2010/02	04-Aug-14	992	13:36	4	NWL	1	46	On	Impact	826380	806466	Summer	No
HKBCF	HY/2010/02	25-Aug-14	997	9:20	6	NWL	1	N/A	Opp	Impact	813999	803433	Summer	No
HKBCF	HY/2010/02	25-Aug-14	998	10:46	2	NWL	1	350	On	Impact	822497	804676	Summer	No
HKBCF	HY/2010/02	25-Aug-14	999	12:09	7	NWL	1	710	On	Impact	829095	805452	Summer	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

July 2014
Photo Identification Information

Table 2. Sightings of Individually Identified Chinese White Dolphin (*Sousa chinensis*) between March 2012 – June 2014

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 121		2014/07/14	968	NWL
HZMB 120		2014/05/31	951	NWL
HZMB 119		2014/04/19	940	NWL
HZMB 118		2014/01/06	890	NWL
HZMB 117		2014/06/17	964	NWL
		2014/01/06	888	NWL
HZMB 116		2014/07/14	972	NWL
		2014/07/14	971	NWL
		2013/12/26	879	NWL
HZMB 115		2013/12/26	879	NWL
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		2014/05/31	951	NWL
		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	2014/01/06	888	NWL
		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

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
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		2014/05/31	954	NWL
		2014/02/17	910	NWL
		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		2014/05/31	954	NWL
		2013/06/26	703	NWL
		2013/02/15	579	NWL
HZMB 084		2013/02/14	575	NWL
HZMB 083	NL136	2013/12/19	863	NWL
		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

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
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		2013/12/26	878	NWL
		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

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 066	NL93	2013/01/28	559	NWL
		2012/12/11	537	NWL
		2012/10/24	475	NWL
		2012/10/12	466	NWL
HZMB 064		2014/06/17	964	NWL
		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 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	2014/05/31	953	NWL
		2014/01/06	888	NWL
		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
		2013/09/18	448	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

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
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		2014/07/14	971	NWL
		2014/01/10	900	NWL
		2014/01/06	888	NWL
		2013/02/15	579	NWL
		2012/09/04	421	NWL
HZMB 049		2014/07/29	982	NWL
		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		2014/02/17	910	NWL
		2013/06/13	682	NWL
		2013/02/15	579	NWL
		2012/11/01	495	NWL
HZMB 044	NL98	2014/02/17	910	NWL
		2013/12/19	864	NWL
		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	2013/12/19	863	NWL
		2012/11/01	495	NWL
		2011/11/07	Baseline	NWL
HZMB 041	NL24	2014/06/05	960	NEL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2014/02/17	910	NWL
		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		2014/02/17	910	NWL
		2014/01/06	893	NWL
		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		2013/12/19	863	NWL
		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

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2013/02/21	591	NWL
		2012/12/06	525	NEL
		2012/10/11	457	NWL
		2012/06/13	295	NEL
HZMB 024		2013/03/18	601	NWL
		2012/06/13	295	NEL
HZMB 023		2014/01/06	888	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 022		2014/01/06	888	NWL
		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
HZMB 020		2012/07/10	330	NWL
HZMB 019		2012/07/10	330	NWL
HZMB 018		2014/02/17	910	NWL
		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

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 014	NL176	2013/12/26	880	NWL
		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
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	2013/10/15	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
		2014/05/31	951	NWL
HZMB 002	WL111	2013/12/26	878	NWL
		2013/12/19	863	NWL
		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

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HZMB 050 LL_2014-07-14 12-40-51

HZMB 116 LL_2014-07-14 12-36-26 (4)

HZMB 116 CALF

HZMB 121 LL_2014-07-14 11-08-30 (4)

HZMB 121 LL_2014-07-14 11-11-35 (2)

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 August / 2014 (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-14	0.0000	0.0000	0.0000	0.0000	0.0000	1158.9828	0.0000	0.1680	0.0000	2.0000	0.0325
Feb-14	0.0000	0.0000	0.0000	0.0000	0.0000	1064.5957	0.0000	0.2520	0.0000	0.0000	0.0520
Mar-14	0.0000	0.0000	0.0000	0.0000	0.0000	1111.9982	0.0000	0.0000	0.0000	1.4000	0.1690
Apr-14	0.0000	0.0000	0.0000	0.0000	0.0000	1294.8080	0.0000	0.0000	0.0000	0.0000	0.0845
May-14	0.0000	0.0000	0.0000	0.0000	0.0000	1181.4168	0.0400	0.0240	0.0000	1.0000	0.2250
Jun-14	0.0000	0.0000	0.0000	0.0000	0.0000	752.7711	0.0000	0.1400	0.0000	8.8000	0.1690
Sub-total	0.0000	0.0000	0.0000	0.0000	0.0000	6564.5726	0.0400	0.5840	0.0000	13.2000	0.7320
Jul-14	0.0000	0.0000	0.0000	0.0000	0.0000	1252.4373	0.0030	0.0340	0.0010	0.2000	0.2145
Aug-14	0.0000	0.0000	0.0000	0.0000	0.0000	1427.9730	0.0000	0.1960	0.0000	0.0000	0.0650
Sep-14											
Oct-14											
Nov-14											
Dec-14											
Total	0.0000	0.0000	0.0000	0.0000	0.0000	9244.9829	0.0430	0.8140	0.0010	13.4000	1.0115

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
	Limit	-	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	22 August 2014	As informed by the Contractor on 22 Aug 2014, EPD referred a complainant to this Contract on 21 August 2014, the complainant raised concern about uncovered sand barges at the sea area outside Melody Garden, Tuen Mun, sand were brought to inside of houses by wind and also causing the vicinity to be covered with sand	Closed	1	23

		and dust. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.			
Notification of summons	-	-	-	-	2
Successful Prosecutions	-	-	-	-	2