

Asia Submarine-cable Express (ASE) – Tseung Kwan O

Fourth Weekly Impact Water Quality Monitoring Report

8 January 2013

Environmental Resources Management
16/F DCH Commercial Centre
25 Westlands Road
Quarry Bay, Hong Kong
Telephone 2271 3000
Facsimile 2723 5660

www.erm.com







Asia Submarine-cable Express (ASE) – Tseung Kwan O

**Environmental Resources
Management**

16/F DCH Commercial Centre
25 Westlands Road
Quarry Bay
Hong Kong
Telephone: (852) 2271 3000
Facsimile: (852) 2723 5660
E-mail: post.hk@erm.com
http://www.erm.com

4th Weekly Impact Water Quality Monitoring Report

Document Code: 0171870 WQM Impact Flyer Sheet.doc

Client: NTT Com Asia Ltd		GMS No: 0171870			
Summary: This report presents the monitoring requirements, methodologies and results of the impact marine water quality measurements at the monitoring locations near Tseung Kwan O in accordance with the EM&A Manual.		Date: 8 January 2013			
		Approved by:  Terence Fong Project Director			
0	4 th Weekly Impact Water Quality Monitoring Report	YLI/ GYANG	GYANG	TFONG	8 Jan 13
Revision	Description	By	Checked	Approved	Date
<p>This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.</p> <p>This report has been prepared by Environmental Resources Management the trading name of 'ERM Hong-Kong, Limited', with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.</p> <p>We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.</p> <p>This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.</p>		Distribution		 <input checked="" type="checkbox"/> Internal <input checked="" type="checkbox"/> Public <input type="checkbox"/> Confidential  	

**Asia Submarine-cable Express (ASE) – Tseung Kwan O
Environmental Certification Sheet
EP-433/2011**

Reference Document/Plan

Document/ Plan to be Certified / Verified:	Fourth Weekly Impact Water Quality Monitoring Report
Date of Report:	8 January 2013
Date prepared by ET:	ERM-Hong Kong Ltd
Date received by IEC:	Ecosystem Ltd

Reference EM&A Manual/ EP Requirement

EM&A Manual Requirement:	Section 2
Content:	<i>Water Quality Monitoring</i>
2.5 "The Impact Monitoring Report will be provided weekly within three days after the relevant monitoring data are collected or become available during the cable laying work....."	
"The Weekly Impact Monitoring shall include, but not limited to, the following details: Basic Project Information..., Operating practices of the cable burial machine during sampling and an interpretation of monitoring results; and the monitoring data should be provided graphically to show the relationship between the Control and the Impact monitoring stations and compliance or non-compliance with respect to the Action/Limit Levels"	
EP Condition:	Condition No. 2.4
Content:	<i>Impact Monitoring Report on Water Quality</i>
(ii)(b) To monitor the environmental impacts and timely implementation of the recommended mitigation measures, the Permit Holder shall submit to the Director four hard copies and one electronic copy of the weekly impact monitoring and site audit reports within three days after the relevant monitoring data are collected or become available.	

ET Certification

I hereby certify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-433/2011.

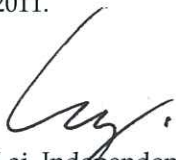


Terence Fong, Environmental
Team Leader:

Date: 8 January 2013

IEC Verification

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-433/2011.



Vincent Lai, Independent
Environmental Checker:

Date: 8 January 2013

CONTENTS

	EXECUTIVE SUMMARY	I
1	INTRODUCTION	1
1.1	PURPOSE OF THE REPORT	1
1.2	STRUCTURE OF THE REPORT	1
2	PROJECT INFORMATION	2
2.1	BACKGROUND	2
2.2	MARINE CONSTRUCTION WORKS UNDERTAKEN DURING REPORTING WEEK	2
2.3	STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS	3
3	IMPACT WATER QUALITY MONITORING REQUIREMENTS	4
3.1	MONITORING LOCATIONS	4
3.2	MONITORING PARAMETERS	5
3.3	MONITORING EQUIPMENT AND METHODOLOGY	5
4	IMPACT MONITORING RESULTS	9
4.1	DATA COLLECTED DURING REPORTING PERIOD	9
4.2	EXCEEDANCES DURING REPORTING PERIOD	10
5	ENVIRONMENTAL NON-CONFORMANCES	15
5.1	SUMMARY OF ENVIRONMENTAL EXCEEDANCE	15
5.2	SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE	15
5.3	SUMMARY OF ENVIRONMENTAL COMPLAINT	15
5.4	SUMMARY OF ENVIRONMENTAL SUMMONS AND PROSECUTION	15
6	FUTURE KEY ISSUES	16
6.1	KEY ISSUES FOR THE COMING REPORTING PERIOD	16
6.2	MONITORING SCHEDULE FOR THE COMING REPORTING PERIOD	16
7	CONCLUSIONS	17

LIST OF TABLES

<i>Table 2.1</i>	<i>Summary of Environmental Licensing, Notification, Permit and Reporting Status</i>
<i>Table 3.1</i>	<i>Co-ordinates of Water Quality Impact Monitoring Stations in Zone A</i>
<i>Table 3.2</i>	<i>Equipment Used during the Impact Water Quality Monitoring</i>
<i>Table 3.3</i>	<i>Monitoring Frequency and Parameters for Impact Monitoring in Zone A</i>
<i>Table 3.4</i>	<i>Action and Limit Levels of Water Quality for Zone A</i>
<i>Table 3.5</i>	<i>Event Action Plan for Water Quality</i>
<i>Table 4.1</i>	<i>Summary of Exceedances Occurring during the Reporting Week</i>
<i>Table 4.2</i>	<i>Exceedances of Action Level on 27 December 2012</i>
<i>Table 4.3</i>	<i>Exceedances of Action and Limit Levels on 28 December 2012</i>
<i>Table 4.4</i>	<i>Exceedances of Action and Limit Levels on 29 December 2012</i>

LIST OF ANNEXES

<i>Annex A</i>	<i>Impact Water Quality Monitoring Schedule</i>
<i>Annex B</i>	<i>QA/QC Results for Suspended Solids Testing</i>
<i>Annex C</i>	<i>Impact Water Quality Monitoring Results</i>

EXECUTIVE SUMMARY

The submarine-cable installation works for the Asia Submarine-cable Express (ASE) cable system were commenced on 8 October 2012. This is the **Fourth Weekly Impact Water Quality Monitoring Report** presenting the impact water quality monitoring conducted during the period from **24 December 2012** to **30 December 2012** in accordance with the *Monitoring and Audit Manual (EM&A Manual)*.

Summary of Construction Works Undertaken during the Reporting Period

During the reporting period, submarine-cable post-installation works, which involved diver jetting burial, were conducted in Zone A.

Water Quality Monitoring

Three monitoring events were scheduled in the reporting period in Zone A. Monitoring events at designated monitoring stations in Zone A were performed on schedule.

Environmental Non-conformance

Exceedances of Action Level were recorded during the reporting week. However, the exceedances were considered to reflect natural background fluctuation rather than impact caused by the Project.

No complaint and summons/prosecution was received during the reporting week.

Future Key Issues

By the end of this reporting week, submarine-cable installation and post-installation works in which jetting works are involved have been completed. If no accident, impact water quality monitoring would not be required for the Project henceforth.

ERM-Hong Kong, Limited (ERM) was appointed by NTT Com Asia (NTTCA) as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme for the installation of a telecommunication cable (Asia-Submarine-cable Express (ASE)) of approximately 7,200 km in length, connecting Japan and Singapore with branches to the Philippines, Hong Kong SAR (HKSAR) and Malaysia (thereinafter called the Project).

1.1 PURPOSE OF THE REPORT

This is the **Fourth Weekly Impact Water Quality Monitoring Report**, which summarises the results of impact water quality monitoring as part of the EM&A programme during the reporting period from **24 December 2012 to 30 December 2012**.

1.2 STRUCTURE OF THE REPORT

The structure of the Report is as follows:

Section 1 : Introduction

Provides details of the background, purpose and report structure.

Section 2 : Project Information

Summarises background and scope of the project, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3 : Water Quality Monitoring Requirements

Summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, and Event Action Plan.

Section 4 : Monitoring Results

Summarises the water quality monitoring results obtained in the reporting period.

Section 5 : Environmental Non-conformance

Summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 6 : Future Key Issues

Summarises the monitoring schedule for the next reporting period (if any).

Section 7 : Conclusions

Presents the key findings of the impact monitoring results.

2.1 BACKGROUND

NTT Com Asia (NTTCA) proposes to install a telecommunication cable (Asia Submarine-cable Express (ASE) cable) of approximately 7,200 km in length, connecting Japan and Singapore with branches to the Philippines, Hong Kong SAR (HKSAR) and Malaysia. NTTCA is responsible for securing the approval to land the ASE cable in Tseung Kwan O, Hong Kong SAR (HKSAR). The proposed landing site will be at a new Beach Manhole (BMH) and ultimately connect with a Data Centre in Tseung Kwan O (TKO) Industrial Estate which is scheduled for completion in 2012. From Tseung Kwan O, the cable will extend eastward approaching the Tathong Channel. Near to Cape Collinson, the cable is approximately parallel to the Tathong Channel until north of Waglan Island where the cable travels eastward to the boundary of HKSAR waters where it enters the South China Sea. The total length of cable in Hong Kong SAR waters is approximately 33.5 km. A map of the proposed cable route is presented in *Figure 2.1*.

A Project Profile (PP-452/2011) which includes an assessment of the potential environmental impacts associated with the installation of the submarine telecommunications cable system was prepared and submitted to the Environmental Protection Department (EPD) under section 5. (1)(b) and 5.(11) of the Environmental Impact Assessment Ordinance (EIAO) for the application for Permission to apply directly for Environmental Permit (EP). The Environmental Protection Department, subsequently issued an Environmental Permit (EP- 433/2011).

Pursuant to Condition 2.4 of the EP, an environmental monitoring and audit programme as set out in the *Environmental Monitoring and Audit Manual (EM&A Manual)* is required to be implemented. In accordance with Section 2 of the *EM&A Manual*, impact monitoring of marine water quality should be undertaken when the cable installation barge works in Zone A, Zone B and Zone C.

During this reporting week, the post-installation works that involved hand jetting were conducted in Zone A. This Report therefore presents the monitoring results from the monitoring stations within Zone A.

2.2 MARINE CONSTRUCTION WORKS UNDERTAKEN DURING REPORTING WEEK

During the reporting period from 24 December 2012 to 30 December 2012, post-installation works that involved hand jetting by diver were conducted in Zone A.

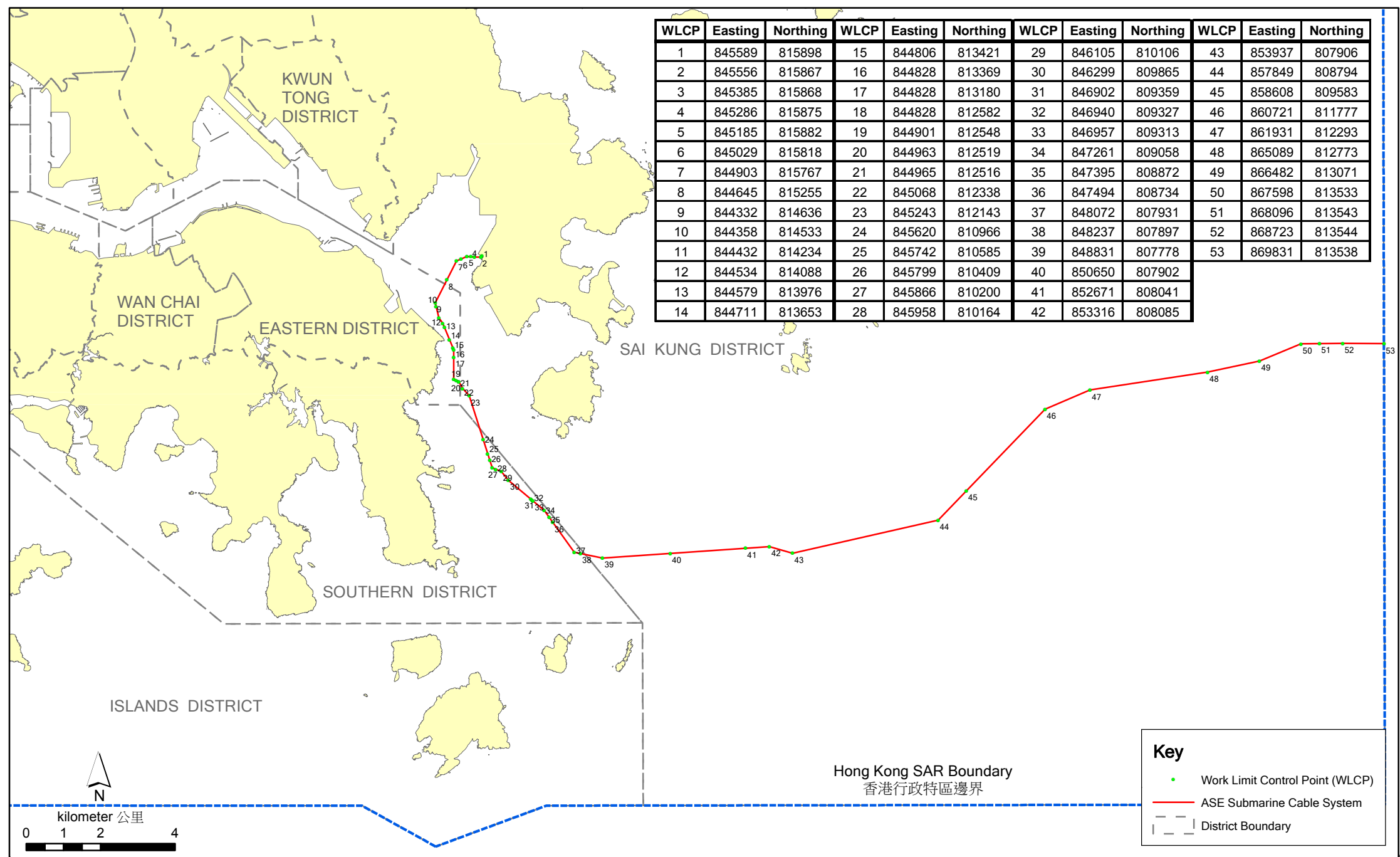


Figure 2.1

ASE Submarine Cable System (Layout Plan)

File: 0171870_Landing_Overview_20110815.mxd
Date: 17/09/2012

2.3

STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

A summary of the relevant permits, licences and reports on marine water quality for this Project is presented in *Table 2.1*.

Table 2.1 *Summary of Environmental Licensing, Notification, Permit and Reporting Status*

Permit / Licence / Notification / Report	Reference	Validity Period	Remarks
Environmental Permit	EP 433/2011	Throughout the construction and operation stages	Granted on 20 December 2011
EM&A Manual	-	Throughout the construction stage	Revised EM&A Manual submitted on 18 September 2012
Baseline Water Quality Monitoring Report (Zone A)	-	Throughout the construction period for Zone A	Submitted on 19 September 2012
Baseline Water Quality Monitoring Report (Zone B)	-	Throughout the construction period for Zone B	Submitted on 25 September 2012
Baseline Water Quality Monitoring Report (Zone C)	-	Throughout the construction period for Zone C	Submitted on 1 October 2012
First Weekly Impact Water Quality Monitoring Report		Throughout the construction stage	Submitted on 19 October 2012
Second Weekly Impact Water Quality Monitoring Report		Throughout the construction stage	Submitted on 24 October 2012
Third Weekly Impact Water Quality Monitoring Report		Throughout the construction stage	Submitted on 24 December 2012

3.1 MONITORING LOCATIONS

In accordance with the *EM&A Manual*, marine water samples were collected at the stations situated around the submarine-cable protection works at the crossing point with DSD sewage pipe in Zone A. Hand jetting was involved in the protection works. The locations of the sampling stations within Zone A are shown in *Figure 3.1*.

- E7 is the Impact Station located at Fat Tong Chau to monitor the impacts of cable installation works on the coral communities in the proximity;
- E8 is an Impact Station to monitor the impacts of cable installation works on the coral communities along Junk Bay – South West;
- E9 is an Impact Station to monitor the impacts of cable installation works on the coral communities at Cape Collison (the Gradient Station is not set due to the short distance of this Impact Station to nearby proposed cable works which may affect the cable laying works);
- F1 is an Impact Station to monitor the impacts of cable installation works on the Tung Lung Chau Fish Culture Zone;
- S1 is an Impact Station situated at the WSD Seawater Intake Point in Junk Bay. It is located within 500 m north of the cable alignment at Junk Bay and set up to monitor the effect of cable laying works in the area;
- S2 is an Impact Station to monitor the impacts of cable installation works on the WSD Seawater Intake at Siu Sai Wan;
- S3 is an Impact Station to monitor the impacts of cable installation works on the Pamela Youde Nethersole Eastern Hospital Cooling Water Intake at Heng Fa Chuen;
- G1 is a Gradient Station between S1 and the cable alignment;
- G2 is a Gradient Station between S2 and the cable alignment;
- G3 is a Gradient Station between F1 and the cable alignment; and
- C1 is a Control Station (approximately 3 km from the proposed cable alignment) for Zone A. It is not supposed to be influenced by the cable laying works due to its remoteness to the construction works.

The co-ordinates of the above monitoring stations in Zone A are listed in *Table 3.1*.

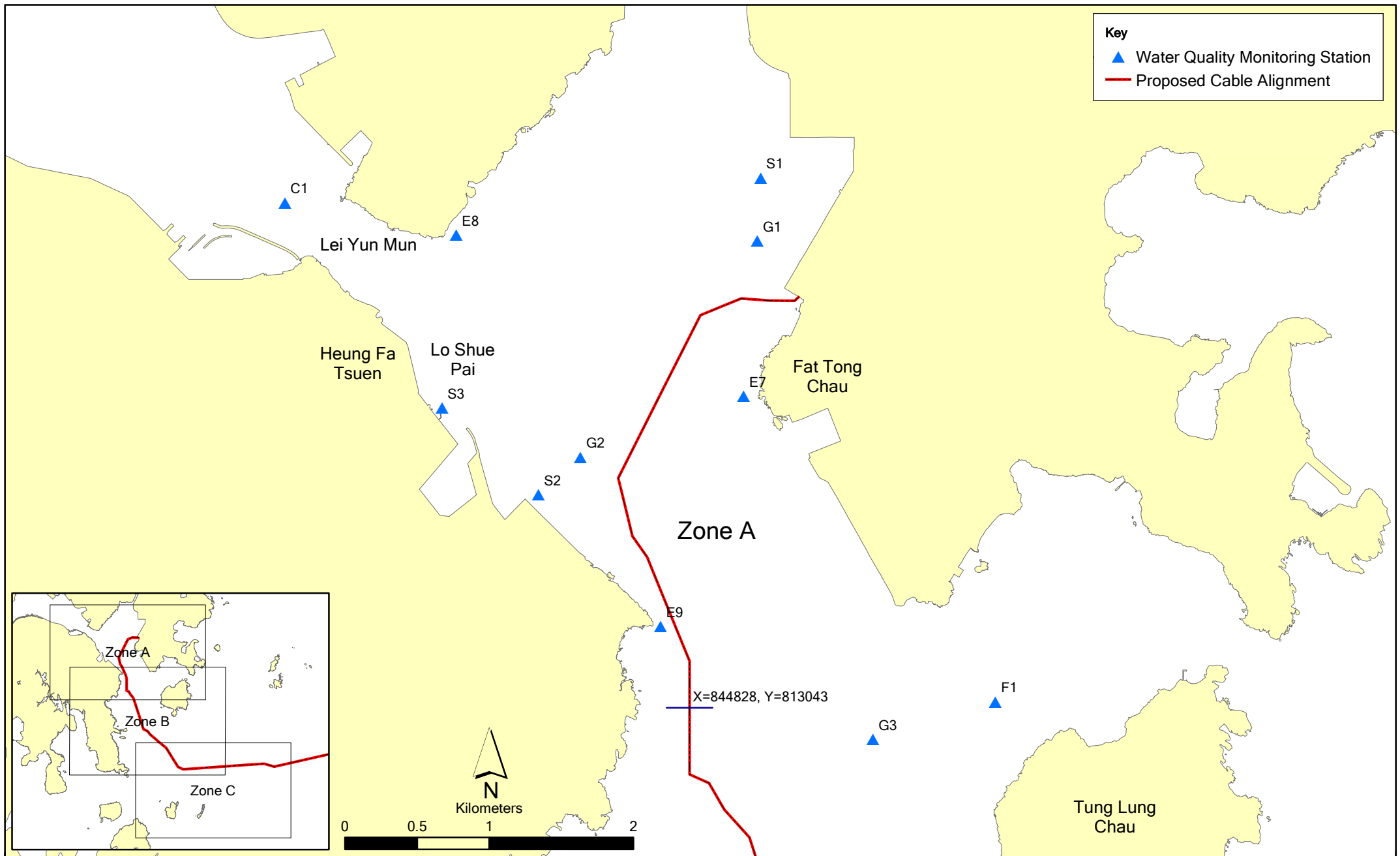


Figure 3.1

Water Quality Monitoring Station (Zone A)

Table 3.1 *Co-ordinates of Water Quality Impact Monitoring Stations in Zone A*

Monitoring Station	Nature	Easting	Northing
E7	Impact Station (Coral Community)	843779	814520
E8	Impact Station (Coral Community)	843111	815126
E9	Impact Station (Coral Community)	843557	811853
F1	Impact Station (Fish Culture Zone)	847196	811056
S1	Impact Station (Seawater Intakes)	847639	805900
S2	Impact Station (Seawater Intakes)	849587	805696
S3	Impact Station (Seawater Intakes)	845474	810605
G1	Gradient Station	845297	816282
G2	Gradient Station	844071	814784
G3	Gradient Station	846099	812826
C1	Control Station	842022	816547

3.2 *MONITORING PARAMETERS*

The impact water quality monitoring was conducted in accordance with the requirements stated in the *EM&A Manual*. Monitoring parameters are presented as below.

Parameters measured *in situ* were:

- dissolved oxygen (DO) (% saturation and mg L⁻¹);
- temperature (°C);
- turbidity (NTU); and
- salinity (‰).

The only parameter measured in the laboratory was:

- suspended solids (SS) (mgL⁻¹).

In addition to the water quality parameters, other relevant data were measured and recorded in field logs, including the location of the sampling stations, water depth, time, weather conditions, sea conditions, special phenomena and work activities undertaken around the monitoring and works area that may influence the monitoring results.

3.3 *MONITORING EQUIPMENT AND METHODOLOGY*

3.3.1 *Monitoring Equipment*

Table 3.2 summaries the equipment used for the impact water quality monitoring.

Table 3.2 *Equipment Used during the Impact Water Quality Monitoring*

Equipment	Model
Global Positioning Device	Garmin etrex 10
Water Depth Gauge	Speedtech Instrument SM-5A

Equipment	Model
Water Sampling Equipment	1510 Kemmerer Water Sampler
Salinity, DO, Temperature Measuring Meter	YSI Pro 2030
Current Velocity and Direction	Flow Probe FP11
Turbidity Meter	HACH Model 2100Q Turbid Meter

3.3.2 *Monitoring Methodology*

Timing & Frequency

In-situ data and SS data were collected during the diver jetting works from 7:00 to 23:00 on a daily basis. The impact monitoring schedule for the reporting period is presented in *Annex A*.

Impact monitoring at E7, E8, E9, F1, S1, S2, S3, G1, G2, G3 and C1 commenced when the diver jetting for cable post-installation works was undertaken in Zone A. The daily sampling works ceased once the diver jetting works in Zone A were completed.

Due to the weather conditions and travelling time between stations, *in-situ* and SS measurements were taken at the impact monitoring stations with an approximately four-hour interval in Zone A. The monitoring frequency and parameters for Impact Monitoring are summarised in *Table 3.3*.

Table 3.3 *Monitoring Frequency and Parameters for Impact Monitoring in Zone A*

Zone	Station Type	Monitoring Station	Monitoring Frequency	Monitoring Parameter
A	Control	C1	Daily at a 4-hour interval while cable installation works were being undertaken in Zone A	Temperature, Turbidity, Salinity, DO and SS
	Gradient	G1, G2, G3		
	Impact	E7, E8, E9, F1, S1, S2, S3,		

Duplicate samples were collected from each of the monitoring events for *in situ* measurements and laboratory analysis.

Depths

Each station was sampled and measurements/ water samples were taken at three depths, namely, 1 m below water surface, mid-depth and 1 m above sea bed, except where the water depth less than 6 m, the mid-depth station may be omitted. For stations that are less than 3 m in depth, only the mid-depth sample was taken.

For in situ measurements, duplicate readings were made at each water depth at each station. Duplicate water samples were collected at each water depth at each station.

Sampling/ Testing Protocols

All *in situ* monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes were checked with certified standard solutions before each use.

For the on-site calibration of field equipment, the *BS 1427: 1993, Guide to Field and On-Site Test Methods for the Analysis of Waters* was observed. Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was made available.

Water samples for SS measurements were collected in high density polythene bottles, packed in ice (cooled to 4°C without being frozen), and delivered to a HOKLAS laboratory as soon as possible after collection.

Two replicate samples were collected from each of the monitoring events for *in situ* measurement and lab analysis.

Laboratory Analysis

All laboratory work was carried out in a HOKLAS accredited laboratory. Water samples of about 1,000 mL were collected at the monitoring and control stations for carrying out the laboratory determinations. The determination work started within the next working day after collection of the water samples. The SS laboratory measurements were provided within 2 days of the sampling event (48 hours). The analyses followed the standard methods as described in APHA Standard Methods for the *Examination of Water and Wastewater, 19th Edition*, unless otherwise specified (APHA 2540D for SS).

The QA/QC details were in accordance with requirements of HOKLAS or another internationally accredited scheme (*Annex B*)

3.3.3 Action and Limit Levels

The Action and Limit levels for Zones A, which were established based on the results of *Baseline Environmental Monitoring (Zone A)*, are presented in *Table 3.4*.

Table 3.4 Action and Limit Levels of Water Quality for Zone A

Parameter	Action Level	Limit Level
SS in mgL ⁻¹ (Depth-averaged) (a) (c)	95%-ile of baseline data (6.27 mg L ⁻¹), or	99%-ile of baseline data (6.40 mg L ⁻¹), and
	20% exceedance of value at any impact station compared with corresponding data from control station	30% exceedance of value at any impact station compared with corresponding data from control station
DO in mgL ⁻¹ (b)	Surface and Middle ^(d)	Surface and Middle ^(d)
	5%-ile of baseline data for surface and middle layer (4.36 mg L ⁻¹)	5mg/L or 1%-ile of baseline for surface and middle layer (4.25 mg L ⁻¹)

Parameter	Action Level	Limit Level
	<u>Bottom</u> 5%-ile of baseline data for bottom layers (4.39 mg L ⁻¹)	<u>Bottom</u> 2mg/L or 1%-ile of baseline data for bottom layer (4.33 mg L ⁻¹)
Turbidity in NTU (Depth-averaged) ^{(a) (c)}	95%-ile of baseline data (4.38 NTU), or 20% exceedance of value at any impact station compared with corresponding data from control station	99%-ile of baseline data (4.43 NTU), and 30% exceedance of value at any impact station compared with corresponding data from control station

Notes:

- “Depth-averaged” is calculated by taking the arithmetic means of reading of all sampled depths.
- For DO, non-compliance of the water quality limits occurs when the monitoring result is lower than the limits.
- For SS and turbidity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
- The Action and Limit Level for DO for surface and middle layer were calculated from the combined pool of baseline surface layer data and baseline middle layer data.

3.3.4 Event and Action Plan

The Event and Action Plan for water quality monitoring which was stipulated in *EM&A Manual* is presented in *Table 3.5*.

Table 3.5 *Event Action Plan for Water Quality*

Event	Contractor
Action Level Exceedance	<p>Step 1 - repeat sampling event.</p> <p>Step 2 - identify source(s) of impact and confirm whether exceedance was due to the construction works;</p> <p>Step 3 - inform EPD, AFCD and LCSD and confirm notification of the non-compliance in writing;</p> <p>Step 4 - discuss with cable installation contractor the most appropriate method of reducing suspended solids during cable installation (e.g. reduce cable laying speed/volume of water used during installation).</p> <p>Step 5 - repeat measurements after implementation of mitigation for confirmation of compliance.</p> <p>Step 6 - if non compliance continues - increase measures in Step 4 and repeat measurements in Step 5. If non compliance occurs a third time, suspend cable laying operations.</p>
Limit Level Exceedance	Undertake Steps 1-5 immediately, if further non compliance continues at the Limit Level, suspend cable laying operations until an effective solution is identified.

A total of three monitoring events were scheduled in the reporting period between 24 December 2012 and 30 December 2012 (*Annex A*). Monitoring events at all designated monitoring stations within Zone A were performed on schedule. No major activities influencing the water quality were identified during the reporting period.

4.1 DATA COLLECTED DURING REPORTING PERIOD

Continuous water sampling was taken at the impact monitoring stations in Zone A at approximately 4-hour intervals (subject to the weather conditions and travelling time between stations) on a daily basis. In general, the water quality of Zone A was stable throughout each sampling day though natural fluctuation existed. Neither sudden drop in dissolved oxygen concentrations nor sharp increase in turbidity levels and suspended solid levels were observed on each monitoring day. The results of the impact monitoring and their graphical presentations were included in *Annex C*.

Despite relatively stable water quality, exceedances of the Action and Limit Levels were recorded during the reporting week. A summary of stations where exceedances were recorded is presented in *Table 4.1*. Exceedances with detailed information of location and time were presented in *Annex C*.

Table 4.1 Summary of Exceedances Occurring during the Reporting Week

Date	Surface DO		Middle DO		Bottom DO		Depth-averaged Turbidity		Depth-averaged SS	
	Exceedances									
	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
27/12									E7, E8, E9, F1, S1, S2, S3	
28/12									E7, E8, E9, F1, S1, S2, S3	
29/12									E7, E8, E9, F1, S1, S2, S3	

4.2 EXCEEDANCES DURING REPORTING PERIOD

4.2.1 Exceedances on 27 December 2012

Exceedances of the Action Level in depth-averaged SS were recorded at Impact Stations E7, E8, E9, F1, S1, S2 and S3 in the 1st, 2nd, 3rd and 4th sampling rounds on 27 December 2012 (Table 4.2).

According to the daily barge operation report, there was preparation and equipment setting up works carried out by the Contractor before the hand jetting works, which commenced at 14:00. The water jetting works stopped at approximately 16:00 due to strong current. The actual time of hand jetting works on 27 December 2012 was between 14:00 to 16:00. This period overlapped with the marine water quality monitoring.

Hand jetting works for the Project did not start when the exceedances were recorded at all monitoring stations (i.e. C1, G1, G2, G3, E8, S1, E7, F1, E9, S2 and S3) in the 1st round (07:00 – 10:50) of marine water quality monitoring. Therefore, the exceedances of the Action Level at in the 1st sampling round are considered as representing natural background fluctuations rather than the result of the cable protection (hand jetting) works.

For the exceedances in the 2nd and 3rd rounds of water quality sampling, considering the generally elevated Depth-averaged SS levels compared with the baseline data at all monitoring stations including the Control Station C1 to the east of Lei Yun Mun, it is unlikely that the localised and small scaled hand jetting (a total of only 13 m cable buried) can cause SS elevation of such scale. Attention should also be given to the fact that such exceedances at all sampling stations occurred at the 1st round of water quality sampling before the hand jetting works started. It is hence considered that the Depth-averaged SS exceedances at the 2nd and 3rd rounds of sampling may represent a natural phenomenon and overall elevation in the background Depth-averaged SS level, which is not related to the diver burial operation of the Project.

Given the discussion as above, the exceedances of the Action Level at all impact stations in the 4th round of sampling (19:10 – 23:06) are unlikely to be caused by the Project either. Rather, the exceedances are considered to be a continuum of the performance of the natural background conditions for the day.

Table 4.2 Exceedances of Action Level on 27 December 2012

Date	27 December 2012 (Measured) 31 December 2012 (<i>In situ</i> results received by ERM) 2 January 2013 (Laboratory results received by ERM)
Monitoring Station	E8, S1, E7, F1, E9, S2 and S3
Parameter(s) with Exceedance(s)	Depth-averaged SS (mg/L)
Action Levels	6.27 mg/L, or 20% exceedance of value at any impact station compared with corresponding data from control station

Limit Levels	6.40 mg/L, and 30% exceedance of value at any impact station compared with corresponding data from control station	
Measured Levels at Impact Stations Where Exceedances Were Recorded	1 st Round	SS: E8=6.92 mg/L; S1=7.02 mg/L; E7=6.90 mg/L, F1=7.38 mg/L; E9=7.30 mg/L; S2= 6.92 mg/L; and S3=7.40 mg/L
	2 nd Round	SS: E8=6.93 mg/L; S1=7.15 mg/L; E7=7.03 mg/L, F1=7.17 mg/L; E9=7.02 mg/L; S2= 6.87 mg/L; and S3=7.25 mg/L
	3 rd Round	SS: E8=6.82 mg/L; S1=6.85 mg/L; E7=6.92 mg/L, F1=7.13 mg/L; E9=7.12 mg/L; S2= 6.95 mg/L; and S3=7.42 mg/L
	4 th Round	SS: E8=6.78 mg/L; S1=7.00 mg/L; E7=7.02 mg/L, F1=7.03 mg/L; E9=7.08 mg/L; S2= 6.87 mg/L; and S3=7.27 mg/L
Exceedances	1 st Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.
	2 nd Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.
	3 rd Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.
	4 th Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.

4.2.2 Exceedances on 28 December 2012

Exceedances of the Action Level in depth-averaged SS were recorded at Impact Stations E7, E8, E9, F1, S1, S2 and S3 in the 1st, 2nd, 3rd and 4th sampling rounds on 28 December 2012 (Table 4.3).

According to the daily barge operation report of 28 December 2012, there was preparation and equipment setting up works carried out by the Contractor before the hand jetting works, which commenced at 10:30. The water jetting works stopped at approximately 19:00 for the day. The actual time of hand jetting works on 28 December 2012 was between 10:30 to 19:00. This period overlapped with the marine water quality monitoring..

Hand jetting works for the Project did not start when the exceedances were recorded at all monitoring stations (i.e. C1, G1, G2, G3, E8, E7, F1, E9, S1 and S2) except S3 in the 1st round (07:00 – 10:21) of marine water quality monitoring. Therefore, the exceedances of the Action Level at these stations in the 1st sampling round are considered as representing natural background fluctuations rather than a result of the cable protection (hand jetting) works.

For the exceedances at impact station S3 in the 1st round of water quality sampling and all monitoring stations in the 2nd and 3rd rounds, considering the generally elevated Depth-averaged SS levels compared with the baseline data at all monitoring stations including the Control Station C1 to the east of Lei Yun Mun, it is unlikely that the localised and small scaled hand jetting (a total of only 42 m cable buried) can cause SS elevation of such scale. Attention should also be given to the fact that such exceedances at all sampling stations (except S3) occurred at the 1st round of water quality sampling before the hand

jetting works started. It is hence considered that the Depth-averaged SS exceedances at the 2nd and 3rd rounds of sampling may represent a natural phenomenon and overall elevation in the background Depth-averaged SS level, which is not related to the diver burial operation of the Project.

Given the discussion as above, the exceedances of the Action Level at all impact stations in the 4th round of sampling (19:10 – 23:04) are unlikely to be caused by the Project either. Rather, the exceedances are considered to be a continuum of the performance of the natural background conditions for the day.

Table 4.3 *Exceedances of Action and Limit Levels on 28 December 2012*

Date	28 December 2012 (Measured) 31 December 2012 (<i>In situ</i> results received by ERM) 2 January 2012 (Laboratory results received by ERM)	
Monitoring Station	E8, S1, E7, F1, E9, S2 and S3	
Parameter(s) with Exceedance(s)	Depth-averaged SS (mg/L)	
Action Levels	6.27 mg/L, or 20% exceedance of value at any impact station compared with corresponding data from control station	
Limit Levels	6.40 mg/L, and 30% exceedance of value at any impact station compared with corresponding data from control station	
Measured Levels at Impact Stations Where Exceedances Were Recorded	1 st Round	SS: E8=6.95 mg/L; S1=6.87 mg/L; E7=7.03 mg/L, F1=6.97 mg/L; E9=7.10 mg/L; S2= 6.95 mg/L; and S3=6.85 mg/L
	2 nd Round	SS: E8=7.07 mg/L; S1=7.12 mg/L; E7=6.88 mg/L, F1=6.93 mg/L; E9=7.02 mg/L; S2= 6.95 mg/L; and S3=7.07 mg/L
	3 rd Round	SS: E8=7.02 mg/L; S1=6.70 mg/L; E7=7.00 mg/L, F1=7.03 mg/L; E9=7.03 mg/L; S2= 6.97 mg/L; and S3=6.98 mg/L
	4 th Round	SS: E8=6.92 mg/L; S1=6.90 mg/L; E7=6.82 mg/L, F1=6.87 mg/L; E9=6.93 mg/L; S2= 7.07 mg/L; and S3=6.95 mg/L
Exceedances	1 st Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.
	2 nd Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.
	3 rd Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.
	4 th Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.

4.2.3 *Exceedances on 29 December 2012*

Exceedances of the Action Level in depth-averaged SS were recorded at Impact Station E7, E8, E9, F1, S1, S2 and S3 in the 1st, 2nd, 3rd and 4th sampling rounds on 29 December 2012 (Table 4.4).

According to the daily barge operation report of 29 December 2012, there was preparation and equipment setting up works carried out by the Contractor

before the hand jetting works, which commenced at 10:30. The water jetting works stopped at approximately 19:00 for the day. The actual time of hand jetting works on 29 December 2012 was between 10:30 to 19:00. This period overlapped with the marine water quality monitoring.

Hand jetting works for the Project did not start when the exceedances were recorded at all monitoring stations (i.e. C1, G1, G2, G3, E8, E7, F1, E9, S1 and S2) except S3 in the 1st round (07:00 – 10:22) of marine water quality monitoring. Therefore, the exceedances of the Action Level at these stations in the 1st sampling round are considered as representing natural background fluctuations rather than a result of the cable protection (hand jetting) works.

For the exceedances at impact station S3 in the 1st round of water quality sampling and all monitoring stations in the 2nd and 3rd rounds, considering the generally elevated Depth-averaged SS levels compared with the baseline data at all monitoring stations including the Control Station C1 to the east of Lei Yun Mun, it is unlikely that the localised and small scaled hand jetting (a total of only 64 m cable buried) can cause SS elevation of such scale. Attention should also be given to the fact that such exceedances at all sampling stations (except S3) occurred at the 1st round of water quality sampling before the hand jetting works started. It is hence considered that the Depth-averaged SS exceedances at the 2nd and 3rd rounds of sampling may represent a natural phenomenon and overall elevation in the background Depth-averaged SS level, which is not related to the diver burial operation of the Project.

Given the discussion as above, the exceedances of the Action Level at all impact stations in the 4th round of sampling (19:08 – 22:55) are unlikely to be caused by the Project either. Rather, the exceedances are considered to be a continuum of the performance of the natural background conditions for the day.

Table 4.4 Exceedances of Action and Limit Levels on 29 December 2012

Date	29 December 2012 (Measured) 2 January 2013 (In situ results received by ERM) 2 January 2013 (Laboratory results received by ERM)	
Monitoring Station	E8, S1, E7, F1, E9, S2 and S3	
Parameter(s) with Exceedance(s)	Depth-averaged SS (mg/L)	
Action Levels	6.27 mg/L, or 20% exceedance of value at any impact station compared with corresponding data from control station	
Limit Levels	6.40 mg/L, and 30% exceedance of value at any impact station compared with corresponding data from control station	
Measured Levels at Impact Stations Where Exceedances Were Recorded	1 st Round	SS: E8=7.25 mg/L; S1=7.08 mg/L; E7=7.02 mg/L, F1=7.12 mg/L; E9=6.98 mg/L; S2= 6.92 mg/L; and S3=6.97 mg/L
	2 nd Round	SS: E8=6.98 mg/L; S1=7.05 mg/L; E7=7.13 mg/L, F1=6.87 mg/L; E9=7.03 mg/L; S2= 6.98 mg/L; and S3=7.00 mg/L
	3 rd Round	SS: E8=7.13 mg/L; S1=6.92 mg/L; E7=6.98 mg/L, F1=7.38 mg/L; E9=7.23 mg/L; S2= 7.10 mg/L; and S3=7.02 mg/L
	4 th Round	SS: E8=7.13 mg/L; S1=7.10 mg/L; E7=6.98 mg/L, F1=7.05 mg/L; E9=7.10 mg/L; S2= 7.13 mg/L; and S3=7.18 mg/L
Exceedances	1 st Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.
	2 nd Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.
	3 rd Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.
	4 th Round	Exceedance of Action Level in SS: E8, S1, E7, F1, E9, S2 and S3.

5 ENVIRONMENTAL NON-CONFORMANCES

5.1 SUMMARY OF ENVIRONMENTAL EXCEEDANCE

Exceedances of the Action Level were recorded during the reporting period. The Event and Action Plan for the identified exceedances were implemented and followed the procedures as stipulated in the *EM&A Manual* and *Table 3.4*. It was concluded that the exceedances were considered to reflect natural background fluctuation rather than the impact caused by the Project (See *Section 4.2* for details).

5.2 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE

No non-compliance events were recorded during the reporting period.

5.3 SUMMARY OF ENVIRONMENTAL COMPLAINT

No complaints were received during the reporting period.

5.4 SUMMARY OF ENVIRONMENTAL SUMMONS AND PROSECUTION

No summons or prosecution on environmental matters were received during the reporting period.

6 *FUTURE KEY ISSUES*

6.1 *KEY ISSUES FOR THE COMING REPORTING PERIOD*

By the end of this reporting week, submarine-cable installation and post-installation works, in which jetting works are involved, have been completed. Given the completion of the marine construction phase involving jetting works of this project, no jetting works of any types are expected to be carried out except for any accident in the future that requires the said task.

6.2 *MONITORING SCHEDULE FOR THE COMING REPORTING PERIOD*

Since no jetting works are anticipated for the Project, impact water quality monitoring would not be required henceforth if no accident.

This Weekly Impact Monitoring Report presents the results of impact water quality monitoring undertaken in Zone A during the period from **24 December 2012** to **30 December 2012** in accordance with the *EM&A Manual* and the requirements under Environmental Permit (EP - 433/2011).

Water quality in Zone A was generally stable throughout the sampling period. Neither sudden drop in dissolved oxygen concentrations nor sharp increase in turbidity levels and suspended solid levels were observed. Exceedances of Action Level were recorded during the reporting week, but they are considered to reflect natural background fluctuation rather than impact caused by the Project.

It is concluded that no deterioration of water quality was observed and hence the impact of the Project on water quality is considered to be negligible.

By the end of this reporting week, submarine-cable installation and post-installation works, in which jetting works are involved, have been completed. Since no jetting works are anticipated for the Project in future, impact water quality monitoring would not be required henceforth if no accident.

Annex A

Impact Water Quality Monitoring Schedule

ASE Submarine Cable System - Tseung Kwan O
Impact Water Quality Monitoring Schedule - Fourth Week

as of 30 December 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Dec
2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	8-Dec
9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	15-Dec
16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec
23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec
				07:00 -23:00 (Zone A, 11 stations) <i>Impact Monitoring</i>	07:00 -23:00 (Zone A, 11 stations) <i>Impact Monitoring</i>	07:00 -23:00 (Zone A, 11 stations) <i>Impact Monitoring</i>

Annex B

QA/QC Results for Suspended Solids Testing

Annex B1 QA/QC Results of Laboratory Analysis of Total Suspended Solids (Zone A)

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
12/27/2012	95.9	C1-S1(0700)	6.06	G1-S2 (0700)	96.2
	104.6	G1-M1(0700)	2.8	G3-M2 (0700)	98
	96.2	G3-B1 (0700)	0.0	G2-B2(0700)	98.1
	94.6	S3-S1 (0700)	2.74	S3-B2 (0700)	98.0
	107.0	C1-S1(1100)	3.2	G1-S2 (1100)	100.0
	92.6	G1-M1(1100)	5.7	G3-M2 (1100)	93.9
	97.5	G3-B1 (1100)	2.82	G2-B2 (1100)	102.0
	98.6	S3-S1 (1100)	2.82	S3-B2 (1100)	95.8
	101.0	C1-S1(1500)	0.0	G1-S2 (1500)	100.0
	106.5	G1-M1(1500)	2.9	G3-M2 (1500)	98.0
	100.4	G3-B1 (1500)	2.8	G2-B2 (1500)	102.0
	95.5	S3-S1 (1500)	2.82	S3-B2 (1500)	106.1
	97.5	C1-S1(1900)	3.28	G1-S2 (1900)	106.0
	96.9	G1-M1(1900)	2.9	G3-M2 (1900)	98.0
	106.3	G3-B1 (1900)	0.00	G2-B2 (1900)	92.5
105.1	S3-S1 (1900)	2.9	S3-B2 (1900)	100.0	

Note: (*) % Recovery of QC sample should be between 80% to 120%.
 (#) % Error of Sample Duplicate should be between 0% to 10%.
 (@) % Recovery of Sample Spike should be between 80% to 120%.
 (**) % Error of Sample Duplicate >10% but invalid due to sample results less

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
12/28/2012	106.9	C1-S1(0700)	3.17	G1-S2 (0700)	92.0
	103.5	G1-M1(0700)	0.00	G3-M2 (0700)	91.7
	100.2	G3-B1 (0700)	5.56	G2-B2(0700)	95.9
	97.6	S3-S1 (0700)	0.00	S3-B2 (0700)	102.0
	101.7	C1-S1(1100)	0.00	G1-S2 (1100)	102.0
	103.6	G1-M1(1100)	0.00	G3-M2 (1100)	91.8
	100.2	G3-B1 (1100)	2.74	G2-B2 (1100)	108.2
	98.8	S3-S1 (1100)	3.08	S3-B2 (1100)	96.2
	103.9	C1-S1(1500)	3.17	G1-S2 (1500)	105.8
	98.1	G1-M1(1500)	0.00	G3-M2 (1500)	94.3
	101.6	G3-B1 (1500)	2.82	G2-B2 (1500)	101.9
	101.0	S3-S1 (1500)	0.00	S3-B2 (1500)	100.0
	96.3	C1-S1(1900)	3.28	G1-S2 (1900)	102.1
	106.8	G1-M1(1900)	2.82	G3-M2 (1900)	91.8
	92.8	G3-B1 (1900)	2.74	G2-B2 (1900)	98.0
107.5	S3-S1 (1900)	0.00	S3-B2 (1900)	102.0	

Note: (*) % Recovery of QC sample should be between 80% to 120%.
 (#) % Error of Sample Duplicate should be between 0% to 10%.
 (@) % Recovery of Sample Spike should be between 80% to 120%.
 (**) % Error of Sample Duplicate >10% but invalid due to sample results less than MDL.

Annex B2 QA/QC Results of Laboratory Analysis of Total Suspended Solids (Zone A)

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
12/29/2012	95.4	C1-S1(0700)	2.99	G1-S2 (0700)	100.0
	92.9	G1-M1(0700)	2.74	G3-M2 (0700)	94.2
	92.8	G3-B1 (0700)	0.00	G2-B2(0700)	103.8
	106.8	S3-S1 (0700)	3.17	S3-B2 (0700)	92.5
	92.6	C1-S1(1100)	3.08	G1-S2 (1100)	92.0
	107.9	G1-M1(1100)	2.82	G3-M2 (1100)	95.9
	103.7	G3-B1 (1100)	0.00	G2-B2 (1100)	93.8
	96.9	S3-S1 (1100)	3.17	S3-B2 (1100)	104.2
	106.2	C1-S1(1500)	3.08	G1-S2 (1500)	104.0
	96.9	G1-M1(1500)	0.00	G3-M2 (1500)	94.0
	92.8	G3-B1 (1500)	2.67	G2-B2 (1500)	104.1
	97.5	S3-S1 (1500)	0.00	S3-B2 (1500)	104.0
	99.0	C1-S1(1900)	6.25	G1-S2 (1900)	100.0
	105.8	G1-M1(1900)	0.00	G3-M2 (1900)	103.9
	98.7	G3-B1 (1900)	0.00	G2-B2 (1900)	93.9
92.5	S3-S1 (1900)	3.08	S3-B2 (1900)	105.8	

Note: (*) % Recovery of QC sample should be between 80% to 120%.
 (#) % Error of Sample Duplicate should be between 0% to 10%.
 (@) % Recovery of Sample Spike should be between 80% to 120%.
 (**) % Error of Sample Duplicate >10% but invalid due to sample results less than MDL.

Annex C

Impact Water Quality Monitoring Results

Annex C1 Impact Water Quality Monitoring Results during First Round Monitoring on 27 December 2012

Date: 27-Dec-12
 Weather: Cloudy
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	0710-0728	36.0	W	1.1	Surface	19.2	19.3	19.3	26.6	26.7	26.7	7.1	7.1	7.1	90.8	90.2	90.5	3.6	3.7	3.7		6.4	6.7	6.6	
					Middle	19.3	19.4	19.4	27.0	26.9	27.0	7.1	7.0	7.1	90.0	89.4	89.7	3.5	3.5	3.5	3.7	7.0	7.2	7.1	7.1
					Bottom	19.4	19.4	19.4	27.1	27.1	27.1	6.9	6.9	6.9	87.9	87.2	87.6	3.8	3.8	3.8		7.6	7.7	7.7	
E8	0735-0752	21.2	W	1.2	Surface	19.2	19.3	19.3	26.7	26.6	26.7	7.1	7.0	7.1	89.9	89.5	89.7	3.6	3.7	3.6		6.4	6.3	6.4	
					Middle	19.4	19.3	19.4	26.8	26.9	26.9	7.0	6.9	7.0	88.8	88.3	88.6	3.5	3.4	3.4	3.6	6.9	7.0	7.0	6.9
					Bottom	19.4	19.5	19.5	27.1	27.1	27.1	6.8	6.8	6.8	87.0	86.6	86.8	3.8	3.9	3.8		7.4	7.5	7.5	
S1	0800-0815	9.8	W	1.1	Surface	19.3	19.3	19.3	26.6	26.6	26.6	7.0	6.9	7.0	88.5	88.2	88.4	3.7	3.7	3.7		6.6	6.6	6.6	
					Middle	19.3	19.4	19.4	26.7	26.6	26.7	6.9	6.8	6.8	87.3	86.7	87.0	3.9	3.9	3.9	3.8	6.9	7.0	7.0	7.0
					Bottom	19.4	19.4	19.4	26.8	26.9	26.9	6.8	6.7	6.7	86.0	85.3	85.7	3.9	3.9	3.9		7.4	7.6	7.5	
G1	0817-0822	12.0	W	1.1	Surface	19.3	19.4	19.4	26.7	26.7	26.7	6.9	7.0	7.0	88.0	88.7	88.4	4.0	3.9	3.9		6.8	6.8	6.8	
					Middle	19.4	19.4	19.4	26.7	26.8	26.8	6.9	6.8	6.8	87.4	86.6	87.0	4.1	4.1	4.1	4.0	7.0	7.2	7.1	7.1
					Bottom	19.5	19.4	19.5	26.9	27.0	27.0	6.7	6.7	6.7	85.7	85.2	85.5	4.1	4.2	4.1		7.2	7.4	7.3	
E7	0823-0840	13.6	W	1.2	Surface	19.4	19.4	19.4	26.7	26.8	26.8	7.0	6.9	6.9	88.5	87.9	88.2	3.9	3.9	3.9		6.6	6.4	6.5	
					Middle	19.4	19.5	19.5	26.9	26.9	26.9	6.8	6.8	6.8	86.9	86.5	86.7	3.7	3.8	3.7	3.9	6.8	6.9	6.9	6.9
					Bottom	19.5	19.5	19.5	27.0	27.0	27.0	6.7	6.8	6.7	85.5	85.8	85.7	4.0	4.0	4.0		7.4	7.3	7.4	
F1	0848-0903	11.8	W	1.1	Surface	19.4	19.4	19.4	26.7	26.8	26.8	7.0	7.1	7.0	89.2	89.6	89.4	3.8	3.8	3.8		7.0	7.2	7.1	
					Middle	19.4	19.4	19.4	26.8	26.9	26.9	6.9	6.9	6.9	87.7	87.2	87.5	3.9	3.9	3.9	3.9	7.4	7.4	7.4	7.4
					Bottom	19.5	19.4	19.5	26.9	27.0	27.0	6.8	6.8	6.8	86.9	86.2	86.6	4.0	4.1	4.0		7.7	7.6	7.7	
G3	0909-0925	15.8	W	1.1	Surface	19.3	19.4	19.4	26.8	26.7	26.8	7.0	7.1	7.1	89.5	90.0	89.8	3.8	3.7	3.8		6.4	6.3	6.4	
					Middle	19.4	19.5	19.5	26.9	26.9	26.9	7.0	6.9	7.0	88.6	88.1	88.4	3.8	3.9	3.8	3.8	6.8	6.8	6.8	6.8
					Bottom	19.5	19.6	19.6	27.0	27.0	27.0	6.7	6.8	6.7	85.6	86.0	85.8	3.9	4.0	4.0		7.2	7.0	7.1	
E9	0930-0948	20.0	W	1.0	Surface	19.4	19.4	19.4	26.7	26.6	26.7	7.0	6.9	7.0	88.6	88.1	88.4	3.9	4.0	4.0		6.9	6.9	6.9	
					Middle	19.5	19.5	19.5	26.9	26.9	26.9	6.9	6.9	6.9	87.7	87.1	87.4	4.0	4.1	4.1	4.0	7.2	7.3	7.3	7.3
					Bottom	19.5	19.6	19.6	27.0	27.1	27.1	6.8	6.8	6.8	86.4	85.9	86.2	4.2	4.1	4.1		7.6	7.9	7.8	
S2	0953-1008	11.4	W	1.1	Surface	19.4	19.5	19.5	26.6	26.6	26.6	7.0	6.9	6.9	88.3	87.8	88.1	4.1	4.1	4.1		6.4	6.5	6.5	
					Middle	19.5	19.4	19.5	26.7	26.8	26.8	6.9	6.8	6.9	87.4	86.9	87.2	4.2	4.3	4.2	4.2	7.0	6.9	7.0	6.9
					Bottom	19.5	19.5	19.5	26.8	26.9	26.9	6.8	6.7	6.8	86.2	85.6	85.9	4.3	4.3	4.3		7.3	7.4	7.4	
G2	1013-1029	13.6	W	1.1	Surface	19.4	19.5	19.5	26.6	26.6	26.6	6.9	6.9	6.9	87.0	87.6	87.3	4.1	4.1	4.1		7.2	7.0	7.1	
					Middle	19.5	19.5	19.5	26.7	26.8	26.8	6.8	6.8	6.8	86.3	86.0	86.2	4.2	4.2	4.2	4.2	7.4	7.6	7.5	7.5
					Bottom	19.5	19.6	19.6	26.9	26.9	26.9	6.7	6.7	6.7	85.3	85.0	85.2	4.3	4.3	4.3		7.8	8.0	7.9	
S3	1035-1050	10.6	W	1.2	Surface	19.5	19.5	19.5	26.6	26.6	26.6	6.9	6.8	6.8	87.3	86.7	87.0	4.0	4.1	4.1		7.4	7.4	7.4	
					Middle	19.5	19.6	19.6	26.7	26.7	26.7	6.8	6.8	6.8	86.1	85.8	86.0	4.2	4.2	4.2	4.2	7.5	7.4	7.5	7.4
					Bottom	19.5	19.6	19.6	26.8	26.8	26.8	6.6	6.7	6.7	84.4	85.1	84.8	4.3	4.3	4.3		7.3	7.4	7.4	

Remark or Observation:

Note: * Average ** Depth Average

Annex C2 Impact Water Quality Monitoring Results during Second Round Monitoring on 27 December 2012

Date: 27-Dec-12
 Weather: Cloudy
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	1110-1126	35.8	E	1.0	Surface	19.4	19.3	19.4	26.6	26.7	26.7	7.2	7.2	7.2	91.3	91.6	91.5	3.5	3.6	3.5		6.2	6.4	6.3	
					Middle	19.4	19.4	19.4	26.9	26.9	26.9	7.0	7.0	7.0	89.2	89.0	89.1	3.7	3.8	3.7	3.7	6.7	6.8	6.8	6.8
					Bottom	19.4	19.5	19.5	27.0	27.1	27.1	6.7	6.8	6.8	85.6	86.1	85.9	3.8	3.9	3.8		7.3	7.2	7.3	
E8	1133-1150	21.0	E	0.8	Surface	19.4	19.3	19.4	26.5	26.6	26.6	7.0	6.9	7.0	89.0	88.1	88.6	3.8	3.7	3.7		6.5	6.4	6.5	
					Middle	19.4	19.5	19.5	26.9	27.0	27.0	6.8	6.8	6.8	86.9	86.4	86.7	3.8	3.8	3.8	3.8	6.9	7.0	7.0	6.9
					Bottom	19.4	19.4	19.4	27.0	27.0	27.0	6.7	6.7	6.7	84.9	85.3	85.1	3.9	4.0	4.0		7.4	7.4	7.4	
S1	1157-1214	9.4	E	0.9	Surface	19.4	19.3	19.4	26.7	26.6	26.7	6.9	6.8	6.9	87.6	86.9	87.3	3.8	3.9	3.8		6.6	6.8	6.7	
					Middle	19.4	19.5	19.5	26.8	26.9	26.9	6.7	6.8	6.8	85.6	86.1	85.9	3.9	3.9	3.9	3.9	7.3	7.1	7.2	7.2
					Bottom	19.5	19.5	19.5	27.1	27.0	27.1	6.7	6.8	6.8	85.3	86.1	85.7	4.0	4.0	4.0		7.5	7.6	7.6	
G1	1220-1239	11.8	E	1.0	Surface	19.4	19.4	19.4	26.6	26.7	26.7	7.1	7.2	7.2	90.4	91.4	90.9	3.6	3.7	3.7		6.7	6.6	6.7	
					Middle	19.4	19.4	19.4	26.9	27.0	27.0	7.0	7.1	7.0	89.2	89.5	89.4	3.9	3.8	3.8	3.8	6.8	7.0	6.9	7.0
					Bottom	19.5	19.5	19.5	27.0	27.7	27.4	6.9	7.0	7.0	88.1	88.4	88.3	4.0	4.1	4.1		7.2	7.4	7.3	
E7	1245-1302	13.2	E	1.0	Surface	19.3	19.4	19.4	26.5	26.6	26.6	7.1	7.1	7.1	89.9	90.2	90.1	3.7	3.8	3.8		6.6	6.6	6.6	
					Middle	19.4	19.4	19.4	26.8	26.9	26.9	6.9	6.9	6.9	88.1	87.9	88.0	3.8	3.7	3.8	3.9	7.1	7.0	7.1	7.0
					Bottom	19.4	19.5	19.5	27.1	27.1	27.1	6.9	6.9	6.9	87.2	87.6	87.4	4.1	4.2	4.2		7.4	7.5	7.5	
F1	1310-1327	11.4	E	1.1	Surface	19.4	19.4	19.4	26.4	26.5	26.5	6.9	7.0	7.0	87.9	88.6	88.3	3.8	3.8	3.8		6.8	6.8	6.8	
					Middle	19.5	19.4	19.5	26.9	27.0	27.0	6.8	6.9	6.8	86.6	86.9	86.8	3.8	3.9	3.9	3.9	7.1	7.3	7.2	7.2
					Bottom	19.5	19.5	19.5	27.1	27.0	27.1	6.9	6.9	6.9	87.0	87.2	87.1	4.1	4.1	4.1		7.5	7.5	7.5	
G3	1333-1350	15.2	E	1.1	Surface	19.4	19.4	19.4	26.5	26.6	26.6	6.9	6.9	6.9	87.4	87.6	87.5	3.7	3.7	3.7		6.5	6.3	6.4	
					Middle	19.4	19.4	19.4	26.9	26.9	26.9	6.8	6.8	6.8	86.7	86.5	86.6	3.8	3.7	3.8	3.9	7.0	6.8	6.9	6.8
					Bottom	19.5	19.4	19.5	27.0	27.1	27.1	6.7	6.8	6.8	85.3	86.1	85.7	4.2	4.2	4.2		7.0	7.2	7.1	
E9	1354-1410	19.6	E	1.0	Surface	19.4	19.4	19.4	26.7	26.7	26.7	7.2	7.2	7.2	91.2	91.4	91.3	3.5	3.5	3.5		6.4	6.6	6.5	
					Middle	19.5	19.5	19.5	27.0	27.1	27.1	6.9	6.9	6.9	87.9	88.1	88.0	3.7	3.8	3.7	3.8	6.9	7.0	7.0	7.0
					Bottom	19.5	19.5	19.5	27.1	27.1	27.1	6.7	6.7	6.7	85.1	85.6	85.4	4.1	4.1	4.1		7.7	7.5	7.6	
S2	1415-1430	11.0	E	1.0	Surface	19.5	19.4	19.5	26.6	26.7	26.7	7.1	7.1	7.1	90.2	90.7	90.5	3.6	3.7	3.7		6.3	6.5	6.4	
					Middle	19.5	19.5	19.5	26.9	26.9	26.9	7.0	7.0	7.0	89.3	89.0	89.2	3.8	3.9	3.9	3.9	6.9	7.1	7.0	6.9
					Bottom	19.6	19.5	19.6	27.0	27.1	27.1	6.9	6.9	6.9	86.9	87.6	87.3	4.1	4.2	4.2		7.3	7.1	7.2	
G2	1436-1451	13.2	E	1.1	Surface	19.4	19.4	19.4	26.6	26.7	26.7	7.0	7.0	7.0	88.3	88.8	88.6	3.7	3.8	3.8		6.8	6.6	6.7	
					Middle	19.5	19.5	19.5	26.9	27.0	27.0	6.8	6.9	6.8	86.5	87.2	86.9	4.0	3.9	4.0	4.0	7.1	7.3	7.2	7.1
					Bottom	19.5	19.5	19.5	27.1	27.1	27.1	6.7	6.8	6.8	85.3	86.1	85.7	4.3	4.2	4.3		7.6	7.4	7.5	
S3	1456-1505	10.2	E	1.1	Surface	19.4	19.3	19.4	26.6	26.7	26.7	7.0	6.9	7.0	88.8	87.9	88.4	3.6	3.6	3.6		7.0	7.1	7.1	
					Middle	19.4	19.4	19.4	27.0	27.0	27.0	6.7	6.8	6.8	85.6	86.1	85.9	3.8	3.8	3.8	3.9	7.4	7.4	7.4	7.3
					Bottom	19.5	19.5	19.5	27.1	27.1	27.1	6.6	6.7	6.7	84.3	85.5	84.9	4.4	4.4	4.4		7.2	7.4	7.3	

Remark or Observation:

Note: * Average ** Depth Average

Annex C3 Impact Water Quality Monitoring Results during Third Round Monitoring on 27 December 2012

Date: 27-Dec-12
 Weather: Cloudy
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	1510-1525	35.2	E	1.1	Surface	19.4	19.4	19.4	26.6	26.7	26.7	7.3	7.2	7.2	92.1	91.5	91.8	3.5	3.6	3.6		6.4	6.2	6.3	
					Middle	19.5	19.5	19.5	26.9	26.9	26.9	7.1	7.0	7.0	89.6	89.1	89.4	3.7	3.8	3.7	3.7	6.8	6.6	6.7	6.8
					Bottom	19.5	19.6	19.6	27.0	27.1	27.1	6.8	6.8	6.8	86.8	86.3	86.6	3.9	3.9	3.9		7.4	7.4	7.4	
E8	1532-1549	20.2	E	1.0	Surface	19.4	19.4	19.4	26.6	26.6	26.6	7.1	7.1	7.1	90.2	90.6	90.4	3.6	3.6	3.6		6.4	6.4	6.4	
					Middle	19.4	19.5	19.5	26.8	26.8	26.8	7.0	7.0	7.0	88.9	88.3	88.6	3.4	3.4	3.4	3.6	6.8	6.8	6.8	6.8
					Bottom	19.6	19.6	19.6	27.0	27.1	27.1	6.8	6.8	6.8	86.8	86.4	86.6	3.8	3.8	3.8		7.2	7.3	7.3	
S1	1556-1614	9.6	E	1.0	Surface	19.5	19.4	19.5	26.6	26.6	26.6	7.0	7.0	7.0	89.1	89.4	89.3	3.7	3.7	3.7		6.4	6.5	6.5	
					Middle	19.5	19.5	19.5	26.7	26.6	26.7	6.9	6.9	6.9	88.1	87.3	87.7	3.8	3.9	3.8	3.8	6.6	6.8	6.7	6.9
					Bottom	19.6	19.6	19.6	26.8	26.8	26.8	6.8	6.8	6.8	86.2	85.8	86.0	3.9	4.0	3.9		7.3	7.5	7.4	
G1	1621-1638	11.6	E	1.0	Surface	19.4	19.5	19.5	26.6	26.7	26.7	7.2	7.2	7.2	92.0	91.5	91.8	3.5	3.5	3.5		6.4	6.6	6.5	
					Middle	19.5	19.5	19.5	26.8	26.8	26.8	7.1	7.1	7.1	90.4	89.9	90.2	3.6	3.7	3.6	3.6	7.0	6.8	6.9	6.9
					Bottom	19.5	19.5	19.5	26.9	26.9	26.9	7.0	6.9	6.9	88.5	88.0	88.3	3.7	3.8	3.7		7.4	7.2	7.3	
E7	1643-1700	12.9	E	1.1	Surface	19.4	19.3	19.4	26.6	26.6	26.6	7.2	7.2	7.2	90.9	91.1	91.0	3.6	3.7	3.6		6.4	6.6	6.5	
					Middle	19.4	19.5	19.5	26.6	26.7	26.7	7.1	7.0	7.0	89.7	89.2	89.5	3.7	3.8	3.7	3.8	7.0	6.9	7.0	6.9
					Bottom	19.5	19.6	19.6	26.8	26.9	26.9	6.9	6.9	6.9	88.2	87.8	88.0	3.9	3.9	3.9		7.4	7.2	7.3	
F1	1709-1726	11.2	E	1.2	Surface	19.4	19.5	19.5	26.6	26.6	26.6	7.2	7.2	7.2	91.3	91.5	91.4	3.5	3.6	3.5		6.8	6.6	6.7	
					Middle	19.5	19.4	19.5	26.7	26.8	26.8	7.1	7.1	7.1	90.3	89.7	90.0	3.6	3.6	3.6	3.7	7.1	7.3	7.2	7.1
					Bottom	19.5	19.6	19.6	26.8	26.8	26.8	7.0	6.9	7.0	88.6	88.2	88.4	3.8	3.8	3.8		7.6	7.4	7.5	
G3	1732-1749	14.6	E	1.1	Surface	19.4	19.4	19.4	26.7	26.6	26.7	7.1	7.1	7.1	90.1	90.6	90.4	3.5	3.5	3.5		6.5	6.7	6.6	
					Middle	19.5	19.5	19.5	26.8	26.9	26.9	6.9	6.9	6.9	88.0	87.5	87.8	3.7	3.7	3.7	3.7	7.0	6.8	6.9	6.8
					Bottom	19.6	19.5	19.6	27.1	27.0	27.1	6.8	6.8	6.8	86.3	85.8	86.1	3.8	3.8	3.8		7.0	6.9	7.0	
E9	1753-1809	19.0	E	1.1	Surface	19.4	19.5	19.5	26.6	26.6	26.6	7.1	7.1	7.1	89.9	90.2	90.1	3.5	3.5	3.5		6.7	6.8	6.8	
					Middle	19.5	19.5	19.5	26.8	26.9	26.9	6.9	6.9	6.9	88.2	87.7	88.0	3.7	3.7	3.7	3.7	7.0	7.2	7.1	7.1
					Bottom	19.5	19.6	19.6	27.1	27.1	27.1	6.8	6.8	6.8	86.9	86.4	86.7	3.9	3.9	3.9		7.4	7.6	7.5	
S2	1814-1830	10.9	E	1.1	Surface	19.5	19.4	19.5	26.6	26.6	26.6	7.0	7.1	7.0	89.4	89.7	89.6	3.7	3.7	3.7		6.4	6.5	6.5	
					Middle	19.5	19.4	19.5	26.7	26.8	26.8	7.0	6.9	6.9	88.6	87.7	88.2	3.9	3.8	3.8	3.8	6.8	7.1	7.0	7.0
					Bottom	19.6	19.6	19.6	26.9	26.9	26.9	6.8	6.7	6.8	86.3	85.7	86.0	3.9	4.0	3.9		7.4	7.5	7.5	
G2	1835-1850	12.9	E	1.2	Surface	19.4	19.5	19.5	26.6	26.6	26.6	7.1	7.2	7.1	90.5	90.9	90.7	3.4	3.5	3.5		7.0	7.2	7.1	
					Middle	19.5	19.5	19.5	26.7	26.8	26.8	7.0	7.0	7.0	89.4	89.0	89.2	3.6	3.6	3.6	3.6	7.4	7.2	7.3	7.3
					Bottom	19.5	19.6	19.6	26.9	26.9	26.9	6.9	6.9	6.9	88.1	87.6	87.9	3.8	3.8	3.8		7.6	7.4	7.5	
S3	1856-1906	10.3	E	1.1	Surface	19.4	19.4	19.4	26.6	26.6	26.6	7.0	7.0	7.0	88.6	89.1	88.9	3.6	3.6	3.6		7.0	7.4	7.2	
					Middle	19.5	19.5	19.5	26.7	26.6	26.7	6.9	6.9	6.9	87.1	87.7	87.4	3.7	3.7	3.7	3.7	7.4	7.6	7.5	7.4
					Bottom	19.6	19.6	19.6	26.8	26.8	26.8	6.8	6.8	6.8	86.4	85.9	86.2	3.8	3.9	3.8		7.5	7.6	7.6	

Remark or Observation:

Note: * Average ** Depth Average

Annex C4 Impact Water Quality Monitoring Results during Fourth Round Monitoring on 27 December 2012

Date: 27-Dec-12
 Weather: Cloudy
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)				Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	1910-1924	36.1	W	1.0	Surface	19.4	19.5	19.5	26.5	26.5	26.5	7.2	7.3	7.2	91.8	92.3	92.1	3.5	3.5	3.3		6.2	6.3	6.3		
					Middle	19.5	19.5	19.5	26.7	26.8	26.8	7.1	7.1	7.1	90.3	89.7	90.0	3.7	3.7	3.4	3.4	6.8	6.9	6.9	6.8	
					Bottom	19.6	19.5	19.6	27.0	27.0	27.0	6.9	6.8	6.8	87.2	86.4	86.8	3.8	3.9	3.6		7.3	7.5	7.4		
E8	1931-1948	21.2	W	1.1	Surface	19.4	19.4	19.4	26.5	26.6	26.6	7.1	7.2	7.1	90.6	90.9	90.8	3.5	3.6	3.5		6.5	6.3	6.4		
					Middle	19.5	19.4	19.5	26.8	26.7	26.8	7.0	7.0	7.0	89.5	89.0	89.3	3.6	3.7	3.7	3.6	6.8	6.6	6.7	6.8	
					Bottom	19.6	19.6	19.6	26.9	27.0	27.0	6.9	6.8	6.8	87.1	86.7	86.9	3.8	3.8	3.7		7.3	7.2	7.3		
S1	1955-2014	10.2	W	1.0	Surface	19.4	19.4	19.4	26.6	26.5	26.6	7.1	7.0	7.0	89.7	89.4	89.6	3.6	3.7	3.4		6.6	6.4	6.5		
					Middle	19.4	19.5	19.5	26.7	26.7	26.7	7.0	6.9	6.9	88.5	88.0	88.3	3.8	3.8	3.5	3.5	7.1	7.2	7.2	7.0	
					Bottom	19.6	19.6	19.6	26.8	26.7	26.8	6.8	6.8	6.8	86.3	85.8	86.1	3.9	3.9	3.6		7.3	7.4	7.4		
G1	2021-2038	12.2	W	1.1	Surface	19.4	19.4	19.4	26.7	26.7	26.7	7.2	7.3	7.2	91.9	92.2	92.1	3.5	3.5	3.5		6.4	6.6	6.5		
					Middle	19.4	19.5	19.5	26.8	26.7	26.8	7.1	7.1	7.1	90.8	90.2	90.5	3.6	3.7	3.7	3.7	7.0	7.2	7.1	7.0	
					Bottom	19.5	19.5	19.5	26.9	26.9	26.9	7.0	7.0	7.0	88.7	88.3	88.5	3.8	3.8	3.8		7.4	7.6	7.5		
E7	2044-2102	13.6	W	1.0	Surface	19.4	19.3	19.4	26.6	26.7	26.7	7.1	7.1	7.1	90.7	90.4	90.6	3.6	3.6	3.3		6.5	6.3	6.4		
					Middle	19.4	19.4	19.4	26.7	26.8	26.8	7.0	7.0	7.0	89.5	89.0	89.3	3.7	3.7	3.5	3.5	7.3	7.1	7.2	7.0	
					Bottom	19.5	19.4	19.5	26.9	26.9	26.9	6.9	6.9	6.9	88.0	87.5	87.8	3.8	3.9	3.6		7.5	7.4	7.5		
F1	2111-2127	12.0	W	1.1	Surface	19.4	19.4	19.4	26.5	26.6	26.6	7.2	7.2	7.2	91.6	91.9	91.8	3.6	3.6	3.2		6.6	6.4	6.5		
					Middle	19.5	19.4	19.5	26.7	26.7	26.7	7.2	7.1	7.1	90.9	90.4	90.7	3.7	3.8	3.5	3.4	7.0	7.1	7.1	7.0	
					Bottom	19.5	19.6	19.6	26.8	26.8	26.8	7.0	7.0	7.0	89.2	88.7	89.0	3.9	3.9	3.5		7.5	7.6	7.6		
G3	2133-2151	15.8	W	1.0	Surface	19.4	19.4	19.4	26.6	26.6	26.6	7.1	7.1	7.1	89.7	90.2	90.0	3.5	3.6	3.3		6.4	6.1	6.3		
					Middle	19.5	19.4	19.5	26.8	26.8	26.8	7.0	6.9	6.9	88.3	87.8	88.1	3.7	3.7	3.5	3.5	6.7	7.0	6.9	6.7	
					Bottom	19.6	19.6	19.6	27.0	27.0	27.0	6.8	6.8	6.8	86.0	86.4	86.2	3.8	3.9	3.6		7.2	6.9	7.1		
E9	2200-2216	20.1	W	1.0	Surface	19.4	19.3	19.4	26.6	26.5	26.6	7.1	7.1	7.1	90.4	90.6	90.5	3.5	3.6	3.3		6.6	6.5	6.6		
					Middle	19.4	19.5	19.5	26.7	26.7	26.7	7.0	7.0	7.0	88.9	88.3	88.6	3.6	3.7	3.4	3.5	7.3	7.2	7.3	7.1	
					Bottom	19.5	19.6	19.6	26.9	27.0	27.0	6.9	6.8	6.9	87.4	86.9	87.2	3.9	3.9	3.7		7.4	7.5	7.5		
S2	2221-2237	11.4	W	1.0	Surface	19.4	19.4	19.4	26.6	26.6	26.6	7.1	7.0	7.0	89.6	89.0	89.3	3.7	3.7	3.6		6.6	6.4	6.5		
					Middle	19.5	19.5	19.5	26.7	26.7	26.7	6.9	6.9	6.9	88.2	87.8	88.0	3.8	3.8	3.6	3.7	6.8	6.9	6.9	6.9	
					Bottom	19.6	19.5	19.6	26.9	27.0	27.0	6.8	6.8	6.8	86.7	86.1	86.4	3.9	4.0	3.8		7.4	7.1	7.3		
G2	2243-2259	13.6	W	1.1	Surface	19.4	19.4	19.4	26.6	26.6	26.6	7.1	7.1	7.1	90.1	90.5	90.3	3.5	3.5	3.5		6.9	6.7	6.8		
					Middle	19.5	19.4	19.5	26.7	26.7	26.7	7.0	7.0	7.0	89.0	88.5	88.8	3.6	3.6	3.7	3.7	6.9	7.1	7.0	7.1	
					Bottom	19.5	19.6	19.6	26.8	26.9	26.9	6.9	6.8	6.9	87.3	86.8	87.1	3.8	3.8	3.9		7.3	7.6	7.5		
S3	2305-2320	10.8	W	1.0	Surface	19.4	19.3	19.4	26.6	26.6	26.6	7.0	7.1	7.1	89.5	89.9	89.7	3.6	3.6	3.6		6.8	6.9	6.9		
					Middle	19.4	19.4	19.4	26.7	26.6	26.7	6.9	6.9	6.9	88.2	87.8	88.0	3.7	3.7	3.8	3.7	7.4	7.5	7.5	7.3	
					Bottom	19.5	19.6	19.6	26.8	26.8	26.8	6.8	6.8	6.8	86.8	86.4	86.6	3.8	3.9	3.9		7.6	7.4	7.5		

Remark or Observation:

Note: * Average ** Depth Average

Annex C5 Summary of Compliance with Action and Limit Level for Zone A

Compliance with Action Level and Limit Level for Zone A - Round 1 (07:00), 27 December						
Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.38	8.52
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	4.75	9.23
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone A - Round 2 (11:00), 27 December						
Station	Limits	DO (Surface)	DO (Middle)	DO (Bottom)	Turbidity (*DA)	SS (*DA)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.45	8.12
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	4.82	8.80
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Annex C6 Summary of Compliance with Action and Limit Level for Zone A

Compliance with Action Level and Limit Level for Zone A - Round 3 (15:00), 27 December						
Station	Limits	DO (Surface)	DO (Middle)	DO (Bottom)	Turbidity (*DA)	SS (*DA)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.46	8.16
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	4.84	8.84
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone A - Round 4 (19:00), 27 December						
Station	Limits	DO (Surface)	DO (Middle)	DO (Bottom)	Turbidity (*DA)	SS (*DA)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.42	8.20
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	4.79	8.88
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Annex C7 Impact Water Quality Monitoring Results during First Round Monitoring on 28 December 2012

Date: 28-Dec-12
 Weather: Fine
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	0700-0717	36.1	W	1.1	Surface	19.3	19.3	19.3	26.6	26.6	26.6	7.2	7.2	7.2	90.9	91.3	91.1	3.6	3.6	3.6		6.2	6.3	6.3	
					Middle	19.4	19.4	19.4	26.7	26.8	26.8	7.1	7.0	7.0	89.7	89.1	89.4	3.7	3.7	3.7	3.7	6.7	6.8	6.8	6.8
					Bottom	19.5	19.6	19.6	27.0	27.0	27.0	6.9	6.9	6.9	88.1	87.6	87.9	3.9	4.0	3.9		7.3	7.5	7.4	
E8	0724-0740	21.3	W	1.3	Surface	19.3	19.2	19.3	26.7	26.6	26.7	7.1	7.1	7.1	90.1	89.7	89.9	3.5	3.6	3.5		6.6	6.3	6.5	
					Middle	19.4	19.4	19.4	26.8	26.8	26.8	7.0	6.9	6.9	88.3	87.9	88.1	3.7	3.7	3.7	3.7	7.0	7.2	7.1	7.0
					Bottom	19.5	19.5	19.5	27.0	27.0	27.0	6.8	6.8	6.8	86.9	86.4	86.7	3.8	3.8	3.8		7.4	7.2	7.3	
S1	0748-0804	9.8	W	1.0	Surface	19.3	19.2	19.3	26.6	26.7	26.7	7.1	7.1	7.1	90.4	89.9	90.2	3.6	3.7	3.7		6.5	6.3	6.4	
					Middle	19.3	19.3	19.3	26.7	26.7	26.7	6.9	6.9	6.9	87.7	88.2	88.0	3.8	3.8	3.8	3.8	7.0	7.0	7.0	6.9
					Bottom	19.4	19.5	19.5	26.9	26.8	26.9	6.8	6.8	6.8	86.7	86.2	86.5	4.0	4.0	4.0		7.3	7.1	7.2	
G1	0810-0827	12.0	W	1.2	Surface	19.3	19.3	19.3	26.6	26.7	26.7	7.0	7.0	7.0	88.8	89.4	89.1	3.8	3.9	3.9		6.3	6.2	6.3	
					Middle	19.3	19.4	19.4	26.7	26.7	26.7	7.1	7.1	7.1	90.2	90.7	90.5	4.0	4.0	4.0	4.0	7.0	6.9	7.0	6.9
					Bottom	19.5	19.5	19.5	26.9	26.8	26.9	6.9	6.9	6.9	88.0	87.4	87.7	4.1	4.1	4.1		7.4	7.3	7.4	
E7	0833-0850	13.8	W	1.3	Surface	19.4	19.3	19.4	26.7	26.7	26.7	7.1	7.1	7.1	89.9	90.2	90.1	3.7	3.7	3.7		6.2	6.4	6.3	
					Middle	19.5	19.4	19.5	26.8	26.9	26.9	7.0	7.0	7.0	88.7	88.3	88.5	3.8	3.8	3.8	3.8	7.1	7.3	7.2	7.0
					Bottom	19.6	19.6	19.6	27.0	27.0	27.0	6.9	6.9	6.9	87.6	87.1	87.4	3.9	4.0	4.0		7.7	7.5	7.6	
F1	0857-0913	11.7	W	1.1	Surface	19.4	19.4	19.4	26.7	26.8	26.8	7.0	7.1	7.0	89.1	89.6	89.4	3.8	3.8	3.8		6.3	6.4	6.4	
					Middle	19.4	19.4	19.4	26.9	26.9	26.9	6.9	6.9	6.9	88.2	87.7	88.0	3.9	3.9	3.9	3.9	7.1	7.1	7.1	7.0
					Bottom	19.5	19.5	19.5	26.9	27.0	27.0	6.8	6.8	6.8	86.8	86.4	86.6	4.0	4.0	4.0		7.3	7.6	7.5	
G3	0920-0936	15.7	W	1.2	Surface	19.3	19.4	19.4	26.7	26.7	26.7	7.2	7.1	7.1	91.0	90.5	90.8	3.6	3.7	3.6		6.1	6.3	6.2	
					Middle	19.4	19.4	19.4	26.8	26.9	26.9	7.1	7.0	7.0	89.6	88.9	89.3	3.7	3.8	3.8	3.8	6.8	7.0	6.9	6.8
					Bottom	19.5	19.6	19.6	27.0	27.1	27.1	6.9	6.9	6.9	87.8	87.3	87.6	3.9	3.9	3.9		7.0	7.3	7.2	
E9	0943-1000	20.1	W	1.1	Surface	19.4	19.3	19.4	26.6	26.7	26.7	7.1	7.1	7.1	90.6	90.1	90.4	3.8	3.8	3.8		6.4	6.6	6.5	
					Middle	19.5	19.5	19.5	26.8	26.8	26.8	7.0	7.0	7.0	88.7	88.3	88.5	3.9	4.0	4.0	4.0	7.1	7.3	7.2	7.1
					Bottom	19.6	19.7	19.7	27.0	27.0	27.0	6.8	6.8	6.8	86.9	86.4	86.7	4.1	4.1	4.1		7.6	7.6	7.6	
S2	1006-1021	11.5	W	1.2	Surface	19.3	19.4	19.4	26.6	26.6	26.6	7.1	7.1	7.1	89.9	90.2	90.1	3.9	3.9	3.9		6.3	6.5	6.4	
					Middle	19.5	19.5	19.5	26.7	26.7	26.7	7.0	7.0	7.0	88.8	88.3	88.6	4.0	4.1	4.0	4.0	7.0	6.8	6.9	7.0
					Bottom	19.6	19.6	19.6	26.8	26.8	26.8	6.9	6.8	6.9	87.3	86.8	87.1	4.1	4.2	4.2		7.6	7.5	7.6	
G2	1027-1042	13.6	W	1.2	Surface	19.4	19.4	19.4	26.5	26.6	26.6	7.1	7.1	7.1	90.4	89.9	90.2	3.9	3.9	3.9		7.0	6.9	7.0	
					Middle	19.5	19.4	19.5	26.7	26.7	26.7	7.0	7.0	7.0	88.6	88.3	88.5	3.9	3.8	3.8	3.9	7.3	7.2	7.3	7.2
					Bottom	19.6	19.6	19.6	26.9	26.8	26.9	6.9	6.8	6.9	87.2	86.9	87.1	4.0	4.1	4.0		7.5	7.4	7.5	
S3	1047-1104	10.8	W	1.2	Surface	19.4	19.5	19.5	26.6	26.6	26.6	7.0	7.1	7.1	89.5	90.0	89.8	3.8	3.8	3.8		6.6	6.4	6.5	
					Middle	19.6	19.6	19.6	26.7	26.7	26.7	6.9	6.9	6.9	88.2	87.8	88.0	3.9	4.0	3.9	3.9	6.7	6.9	6.8	6.9
					Bottom	19.6	19.7	19.7	26.8	26.8	26.8	6.8	6.8	6.8	86.8	86.3	86.6	4.0	4.1	4.1		7.1	7.4	7.3	

Remark or Observation:

Note: * Average ** Depth Average

Annex C8 Impact Water Quality Monitoring Results during Second Round Monitoring on 28 December 2012

Date: 28-Dec-12
 Weather: Fine
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	1110-1128	35.0	E	1.2	Surface	19.4	19.4	19.4	26.6	26.7	26.7	7.0	7.1	7.0	89.2	89.7	89.5	3.7	3.7	3.5		6.4	6.6	6.5	
					Middle	19.5	19.6	19.6	26.8	26.8	26.8	7.0	6.9	6.9	88.4	87.7	88.1	3.8	3.9	3.7	3.7	6.9	7.1	7.0	6.9
					Bottom	19.6	19.7	19.7	27.0	27.1	27.1	6.8	6.8	6.8	87.0	86.4	86.7	4.0	4.0	3.8		7.4	7.2	7.3	
E8	1135-1152	20.6	E	1.3	Surface	19.4	19.5	19.5	26.7	26.7	26.7	6.9	7.0	7.0	88.1	88.7	88.4	3.6	3.7	3.7		6.5	6.9	6.7	
					Middle	19.5	19.5	19.5	26.8	26.7	26.8	6.8	6.8	6.8	86.7	86.2	86.5	3.8	3.8	3.8	3.8	6.9	7.3	7.1	7.1
					Bottom	19.5	19.6	19.6	26.9	27.0	27.0	6.7	6.7	6.7	85.3	84.8	85.1	4.0	3.9	4.0		7.4	7.4	7.4	
S1	1159-1215	9.2	E	1.1	Surface	19.3	19.4	19.4	26.7	26.6	26.7	7.0	7.0	7.0	89.5	89.0	89.3	3.7	3.8	3.8		6.8	6.6	6.7	
					Middle	19.3	19.4	19.4	26.7	26.7	26.7	6.9	6.9	6.9	87.5	87.9	87.7	3.9	3.9	3.9	3.9	7.2	7.1	7.2	7.1
					Bottom	19.4	19.4	19.4	26.8	26.8	26.8	6.9	6.8	6.8	87.1	86.5	86.8	4.1	4.1	4.0		7.4	7.6	7.5	
G1	1221-1238	11.6	E	1.1	Surface	19.4	19.3	19.4	26.7	26.7	26.7	6.9	6.9	6.9	87.9	87.3	87.6	4.0	4.1	3.7		6.5	6.4	6.5	
					Middle	19.4	19.4	19.4	26.7	26.8	26.8	7.0	7.0	7.0	88.5	89.1	88.8	4.1	4.1	3.8	3.8	6.8	6.9	6.9	6.9
					Bottom	19.4	19.5	19.5	26.8	26.9	26.9	6.8	6.8	6.8	87.0	86.5	86.8	4.2	4.2	4.1		7.2	7.4	7.3	
E7	1244-1300	13.4	E	1.2	Surface	19.4	19.4	19.4	26.7	26.8	26.8	7.0	7.0	7.0	89.3	88.8	89.1	3.8	3.8	3.8		6.2	6.3	6.3	
					Middle	19.4	19.5	19.5	26.8	26.8	26.8	6.9	6.9	6.9	87.1	87.6	87.4	3.9	3.9	3.8	3.9	6.9	7.0	7.0	6.9
					Bottom	19.6	19.6	19.6	27.0	26.9	27.0	6.8	6.8	6.8	85.8	86.4	86.1	4.1	4.0	4.2		7.4	7.5	7.5	
F1	1307-1322	11.4	E	1.1	Surface	19.4	19.5	19.5	26.8	26.7	26.8	7.0	6.9	7.0	88.7	88.2	88.5	3.8	3.9	3.8		6.4	6.6	6.5	
					Middle	19.5	19.5	19.5	26.9	26.8	26.9	6.9	6.8	6.8	87.2	86.6	86.9	3.9	4.0	3.9	3.9	6.9	6.8	6.9	6.9
					Bottom	19.5	19.6	19.6	26.9	27.0	27.0	6.8	6.7	6.8	86.2	85.6	85.9	4.1	4.1	4.1		7.4	7.5	7.5	
G3	1329-1346	15.4	E	1.3	Surface	19.4	19.4	19.4	26.7	26.8	26.8	7.1	7.1	7.1	89.7	90.1	89.9	3.7	3.8	3.7		6.3	6.3	6.3	
					Middle	19.5	19.5	19.5	26.8	26.9	26.9	7.0	7.0	7.0	88.7	88.4	88.6	3.9	3.9	3.8	3.9	7.0	7.2	7.1	6.9
					Bottom	19.6	19.6	19.6	27.0	27.1	27.1	6.7	6.7	6.7	85.7	85.2	85.5	4.0	4.0	4.2		7.2	7.3	7.3	
E9	1353-1409	19.4	E	1.2	Surface	19.4	19.4	19.4	26.7	26.7	26.7	7.1	7.0	7.1	90.0	89.4	89.7	3.9	3.9	3.5		6.6	6.4	6.5	
					Middle	19.5	19.5	19.5	26.8	26.9	26.9	7.0	6.9	6.9	88.4	87.7	88.1	4.1	4.1	3.7	3.8	7.0	7.2	7.1	7.0
					Bottom	19.6	19.7	19.7	27.0	27.1	27.1	6.8	6.8	6.8	86.9	86.4	86.7	4.3	4.3	4.1		7.5	7.4	7.5	
S2	1414-1427	11.2	E	1.1	Surface	19.4	19.5	19.5	26.6	26.7	26.7	7.0	7.0	7.0	89.2	88.6	88.9	4.0	4.0	3.7		6.2	6.3	6.3	
					Middle	19.4	19.5	19.5	26.7	26.7	26.7	6.9	6.9	6.9	87.8	87.5	87.7	4.1	4.1	3.9	3.9	7.2	7.0	7.1	7.0
					Bottom	19.5	19.6	19.6	26.8	26.7	26.8	6.8	6.8	6.8	86.5	86.1	86.3	4.2	4.2	4.2		7.6	7.4	7.5	
G2	1432-1446	13.0	E	1.1	Surface	19.4	19.5	19.5	26.6	26.6	26.6	7.0	7.0	7.0	88.9	88.5	88.7	4.0	4.0	3.8		6.6	6.4	6.5	
					Middle	19.5	19.5	19.5	26.6	26.7	26.7	6.9	6.8	6.9	87.4	87.0	87.2	3.9	3.9	4.0	4.0	7.2	7.2	7.2	7.0
					Bottom	19.6	19.6	19.6	26.8	26.8	26.8	6.8	6.7	6.7	85.8	85.2	85.5	4.2	4.1	4.3		7.4	7.4	7.4	
S3	1451-1505	10.6	E	1.0	Surface	19.5	19.5	19.5	26.6	26.7	26.7	6.9	7.0	6.9	88.0	88.3	88.2	3.9	3.9	3.6		6.6	6.9	6.8	
					Middle	19.5	19.5	19.5	26.6	26.7	26.7	6.8	6.9	6.8	86.6	87.2	86.9	4.1	4.0	3.8	3.9	6.9	7.1	7.0	7.1
					Bottom	19.5	19.6	19.6	26.7	26.8	26.8	6.7	6.7	6.7	84.6	85.1	84.9	4.2	4.2	4.4		7.3	7.6	7.5	

Remark or Observation:

Note: * Average ** Depth Average

Annex C9 Impact Water Quality Monitoring Results during Third Round Monitoring on 28 December 2012

Date: 28-Dec-12
 Weather: Fine
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	1510-1525	35.4	W	1.2	Surface	19.4	19.4	19.4	26.7	26.6	26.7	7.1	7.2	7.1	90.4	90.8	90.6	3.6	3.7	3.6		6.4	6.2	6.3	
					Middle	19.5	19.5	19.5	26.9	27.0	27.0	7.0	7.0	7.0	89.4	89.2	89.3	3.8	3.7	3.8	3.8	6.9	7.1	7.0	6.8
					Bottom	19.6	19.5	19.6	27.0	27.0	27.0	6.9	7.0	6.9	87.9	88.4	88.2	4.1	4.1	4.1		7.1	7.3	7.2	
E8	1533-1550	20.8	W	1.1	Surface	19.5	19.5	19.5	26.7	26.7	26.7	7.0	6.9	7.0	88.8	87.8	88.3	3.5	3.5	3.5		6.4	6.6	6.5	
					Middle	19.5	19.5	19.5	26.8	26.9	26.9	26.9	6.9	16.9	88.1	87.8	88.0	3.6	3.7	3.6	3.7	7.2	7.1	7.2	7.0
					Bottom	19.6	19.5	19.6	26.9	27.0	27.0	6.9	6.9	6.9	87.5	87.1	87.3	3.8	3.9	3.9		7.5	7.3	7.4	
S1	1557-1615	9.6	W	1.0	Surface	19.5	19.4	19.5	26.7	26.6	26.7	7.1	7.1	7.1	89.9	90.4	90.2	3.7	3.7	3.7		6.3	6.1	6.2	
					Middle	19.4	19.4	19.4	26.7	26.7	26.7	6.9	7.0	6.9	87.6	88.4	88.0	3.8	3.7	3.8	3.9	6.9	6.8	6.9	6.7
					Bottom	19.5	19.5	19.5	27.0	27.1	27.1	6.7	6.8	6.8	85.6	86.1	85.9	4.2	4.2	4.2		7.0	7.1	7.1	
G1	1622-1639	12.0	W	1.0	Surface	19.3	19.4	19.4	26.6	26.6	26.6	7.1	7.2	7.2	90.7	90.9	90.8	3.9	3.9	3.9		6.4	6.6	6.5	
					Middle	19.4	19.4	19.4	26.7	26.7	26.7	7.1	7.1	7.1	89.5	89.9	89.7	4.0	4.1	4.1	4.0	7.2	7.3	7.3	7.1
					Bottom	19.5	19.5	19.5	26.7	26.8	26.8	6.9	7.0	7.0	87.9	88.6	88.3	4.1	4.2	4.2		7.5	7.4	7.5	
E7	1645-1702	13.6	W	0.9	Surface	19.4	19.4	19.4	26.7	26.6	26.7	7.1	7.1	7.1	89.9	90.4	90.2	3.7	3.8	3.8		6.1	6.3	6.2	
					Middle	19.4	19.5	19.5	26.7	26.8	26.8	6.9	6.9	6.9	87.5	88.0	87.8	3.9	4.0	4.0	4.0	7.2	7.4	7.3	7.0
					Bottom	19.5	19.5	19.5	27.0	27.1	27.1	6.8	6.8	6.8	86.2	85.7	86.0	4.1	4.2	4.1		7.4	7.6	7.5	
F1	1710-1727	11.8	W	1.1	Surface	19.5	19.5	19.5	26.7	26.7	26.7	6.9	6.9	6.9	87.8	88.1	88.0	3.8	3.8	3.8		6.4	6.4	6.4	
					Middle	19.5	19.4	19.5	26.8	26.9	26.9	6.7	6.7	6.7	85.3	85.6	85.5	3.8	3.9	3.8	3.9	7.2	7.3	7.3	7.0
					Bottom	19.6	19.5	19.6	27.1	27.1	27.1	6.6	6.6	6.6	84.1	83.8	84.0	4.2	4.1	4.2		7.5	7.4	7.5	
G3	1733-1750	15.8	W	1.0	Surface	19.4	19.4	19.4	26.6	26.7	26.7	7.1	7.2	7.2	90.6	91.3	91.0	3.8	3.8	3.8		6.3	6.2	6.3	
					Middle	19.4	19.5	19.5	26.7	26.8	26.8	7.0	7.0	7.0	88.8	88.3	88.6	3.9	3.9	3.9	3.9	7.0	7.2	7.1	6.9
					Bottom	19.5	19.5	19.5	27.0	27.0	27.0	6.8	6.8	6.8	86.9	86.4	86.7	4.0	4.1	4.1		7.2	7.4	7.3	
E9	1754-1810	20.4	W	1.2	Surface	19.4	19.4	19.4	26.8	26.7	26.8	7.1	7.2	7.1	90.4	90.9	90.7	3.8	3.8	3.8		6.3	6.4	6.4	
					Middle	19.5	19.5	19.5	26.9	26.8	26.9	7.0	7.0	7.0	89.0	89.3	89.2	4.1	4.2	4.1	4.1	7.1	7.4	7.3	7.0
					Bottom	19.6	19.5	19.6	27.0	27.1	27.1	6.9	6.9	6.9	87.9	87.6	87.8	4.3	4.3	4.3		7.6	7.4	7.5	
S2	1815-1831	11.8	W	1.1	Surface	19.5	19.4	19.5	26.7	26.8	26.8	7.1	7.1	7.1	89.5	90.0	89.8	3.8	3.9	3.9		6.3	6.3	6.3	
					Middle	19.5	19.5	19.5	26.8	26.9	26.9	6.9	6.8	6.9	87.4	86.6	87.0	3.9	4.0	4.0	3.9	6.9	7.1	7.0	7.0
					Bottom	19.5	19.4	19.5	27.0	27.0	27.0	6.7	6.8	6.8	85.6	85.9	85.8	4.0	3.9	4.0		7.7	7.5	7.6	
G2	1836=1850	13.8	W	1.4	Surface	19.5	19.4	19.5	26.7	26.7	26.7	6.9	6.9	6.9	87.2	87.6	87.4	4.1	4.2	4.2		6.6	6.8	6.7	
					Middle	19.5	19.5	19.5	26.7	26.8	26.8	6.8	6.7	6.8	86.2	85.5	85.9	4.0	3.9	4.0	4.0	7.1	7.3	7.2	7.2
					Bottom	19.5	19.5	19.5	26.9	27.0	27.0	6.7	6.7	6.7	84.6	84.9	84.8	3.9	3.9	3.9		7.7	7.6	7.7	
S3	1855-1905	11.0	W	1.6	Surface	19.4	19.4	19.4	26.7	26.6	26.7	7.0	6.9	7.0	88.8	87.8	88.3	4.0	3.9	4.0		6.6	6.4	6.5	
					Middle	19.5	19.5	19.5	26.8	26.9	26.9	6.9	6.9	6.9	86.9	87.4	87.2	4.1	4.1	4.1	4.1	7.0	7.3	7.2	7.0
					Bottom	19.6	19.6	19.6	26.9	27.0	27.0	6.8	6.7	6.7	85.9	85.3	85.6	4.2	4.1	4.2		7.2	7.4	7.3	

Remark or Observation:

Note: * Average ** Depth Average

Annex C10 Impact Water Quality Monitoring Results during Fourth Round Monitoring on 28 December 2012

Date: 28-Dec-12
 Weather: Fine
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)				Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	1910-1926	35.2	E	1.1	Surface	19.5	19.4	19.5	26.6	26.5	26.6	7.1	7.1	7.1	90.0	90.6	90.3	3.4	3.5	3.3		6.0	6.3	6.2		
					Middle	19.5	19.5	19.5	26.8	26.9	26.9	6.7	6.8	6.8	85.6	85.9	85.8	3.9	3.9	3.4	3.4	6.9	6.9	6.9	6.8	
					Bottom	19.5	19.5	19.5	26.9	27.0	27.0	6.9	6.9	6.9	87.4	87.6	87.5	4.3	4.2	3.6		7.1	7.4	7.3		
E8	1934-1949	20.2	E	1.2	Surface	19.4	19.4	19.4	26.6	26.7	26.7	7.1	7.1	7.1	89.8	90.3	90.1	3.4	3.4	3.5		6.3	6.3	6.3		
					Middle	19.4	19.5	19.5	26.7	26.7	26.7	6.9	6.8	6.9	87.5	86.6	87.1	3.7	3.7	3.7	3.6	7.1	7.1	7.1	6.9	
					Bottom	19.5	19.5	19.5	26.9	26.9	26.9	6.8	6.8	6.8	86.2	85.7	86.0	3.9	4.0	3.7		7.3	7.4	7.4		
S1	1956-2014	9.2	E	1.4	Surface	19.4	19.5	19.5	26.6	26.7	26.7	7.2	7.2	7.2	91.1	91.4	91.3	3.5	3.6	3.4		6.4	6.2	6.3		
					Middle	19.5	19.5	19.5	26.7	26.8	26.8	7.0	7.1	7.1	89.4	90.4	89.9	3.9	4.0	3.5	3.5	6.9	7.2	7.1	6.9	
					Bottom	19.6	19.5	19.6	27.0	27.1	27.1	6.6	6.7	6.7	84.1	85.1	84.6	4.2	4.3	3.6		7.2	7.5	7.4		
G1	2023-2040	12.2	E	0.8	Surface	19.4	19.3	19.4	26.5	26.4	26.5	7.1	7.0	7.1	90.2	89.2	89.7	3.7	3.8	3.5		6.6	6.4	6.5		
					Middle	19.4	19.4	19.4	26.6	26.6	26.6	7.0	6.9	7.0	89.0	88.0	88.5	3.9	4.0	3.7	3.7	7.2	7.3	7.3	7.1	
					Bottom	19.4	19.3	19.4	26.8	26.9	26.9	6.9	6.9	6.9	88.0	87.8	87.9	4.1	4.1	3.8		7.4	7.6	7.5		
E7	2044-2103	13.0	E	1.2	Surface	19.5	19.4	19.5	26.6	26.5	26.6	7.0	6.9	7.0	88.6	87.8	88.2	3.9	4.0	3.3		6.3	6.4	6.4		
					Middle	19.4	19.3	19.4	26.7	26.7	26.7	6.9	6.8	6.9	87.2	86.7	87.0	3.8	3.9	3.5	3.5	6.9	6.9	6.9	6.8	
					Bottom	19.4	19.4	19.4	26.9	26.9	26.9	6.7	6.8	6.7	85.3	85.9	85.6	3.9	3.9	3.6		7.3	7.1	7.2		
F1	2111-2128	11.2	E	1.4	Surface	19.4	19.3	19.4	26.7	26.6	26.7	6.9	6.9	6.9	86.9	87.4	87.2	3.7	3.6	3.2		6.3	6.0	6.2		
					Middle	19.5	19.5	19.5	26.8	26.8	26.8	6.7	6.7	6.7	85.3	85.5	85.4	3.8	3.8	3.5	3.4	6.9	7.1	7.0	6.9	
					Bottom	19.4	19.4	19.4	26.9	26.8	26.9	6.5	6.6	6.6	83.1	83.6	83.4	3.9	4.0	3.5		7.3	7.6	7.5		
G3	2134-2151	15.2	E	1.0	Surface	19.3	19.3	19.3	26.6	26.5	26.6	7.0	7.0	7.0	89.3	89.0	89.2	3.7	3.8	3.3		6.3	6.2	6.3		
					Middle	19.4	19.5	19.5	26.7	26.6	26.7	6.9	6.9	6.9	87.4	87.5	87.5	3.8	3.8	3.5	3.5	6.9	7.2	7.1	6.9	
					Bottom	19.5	19.4	19.5	26.8	26.9	26.9	6.6	6.7	6.7	84.1	84.8	84.5	3.7	3.7	3.6		7.2	7.5	7.4		
E9	2155-2211	20.0	E	1.2	Surface	19.3	19.3	19.3	26.4	26.5	26.5	7.0	6.9	7.0	88.6	87.9	88.3	3.7	3.6	3.3		6.3	6.5	6.4		
					Middle	19.4	19.4	19.4	26.5	26.6	26.6	6.8	6.7	6.8	86.4	85.3	85.9	4.0	3.9	3.4	3.5	7.0	7.2	7.1	6.9	
					Bottom	19.5	19.4	19.5	26.6	26.6	26.6	6.7	6.8	6.8	85.6	86.1	85.9	4.2	4.2	3.7		7.4	7.2	7.3		
S2	2216-2230	11.2	E	1.3	Surface	19.4	19.4	19.4	26.5	26.4	26.5	6.9	6.8	6.9	87.2	86.7	87.0	3.6	3.5	3.6		6.6	6.7	6.7		
					Middle	19.4	19.5	19.5	26.6	26.7	26.7	6.8	6.7	6.7	85.9	85.1	85.5	4.0	3.9	3.6	3.7	7.1	7.1	7.1	7.1	
					Bottom	19.5	19.5	19.5	26.7	26.8	26.8	6.7	6.7	6.7	85.1	85.6	85.4	4.1	4.2	3.8		7.6	7.3	7.5		
G2	2235-2249	13.2	E	1.0	Surface	19.3	19.3	19.3	26.6	26.5	26.6	7.0	6.9	6.9	88.3	88.0	88.2	3.5	3.4	3.5		6.6	6.8	6.7		
					Middle	19.4	19.5	19.5	26.7	26.7	26.7	6.7	6.7	6.7	85.3	84.8	85.1	3.8	3.9	3.7	3.7	7.2	7.2	7.2	7.2	
					Bottom	19.5	19.5	19.5	26.7	26.8	26.8	6.7	6.6	6.7	84.9	84.3	84.6	4.1	4.1	3.9		7.5	7.6	7.6		
S3	2254-2304	10.8	E	0.9	Surface	19.3	19.4	19.4	26.6	26.6	26.6	7.0	6.9	7.0	88.8	87.8	88.3	3.7	3.6	3.6		6.4	6.5	6.5		
					Middle	19.4	19.4	19.4	26.6	26.7	26.7	6.8	6.8	6.8	86.4	86.7	86.6	3.9	3.9	3.8	3.7	7.1	7.0	7.1	7.0	
					Bottom	19.4	19.4	19.4	26.8	26.9	26.9	6.7	6.7	6.7	84.5	84.6	84.6	4.1	4.2	3.9		7.3	7.4	7.4		

Remark or Observation:

Note: * Average ** Depth Average

Annex C11 Summary of Compliance with Action and Limit Level for Zone A

Compliance with Action Level and Limit Level for Zone A - Round 1 (07:00), 28 December						
Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.49	8.16
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	4.87	8.84
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone A - Round 2 (11:00), 28 December						
Station	Limits	DO (Surface)	DO (Middle)	DO (Bottom)	Turbidity (*DA)	SS (*DA)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.61	8.32
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	5.00	9.01
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Annex C12 Summary of Compliance with Action and Limit Level for Zone A

Compliance with Action Level and Limit Level for Zone A - Round 3 (15:00), 28 December						
Station	Limits	DO (Surface)	DO (Middle)	DO (Bottom)	Turbidity (*DA)	SS (*DA)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.61	8.20
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	4.99	8.88
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone A - Round 4 (19:00), 28 December						
Station	Limits	DO (Surface)	DO (Middle)	DO (Bottom)	Turbidity (*DA)	SS (*DA)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.65	8.12
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	5.04	8.80
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Annex C13 Impact Water Quality Monitoring Results during First Round Monitoring on 29 December 2012

Date: 29-Dec-12
 Weather: Cloudy
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	0700-0717	36.4	E	0.3	Surface	19.0	19.1	19.1	26.8	26.7	26.8	6.8	6.8	6.8	86.5	87.0	86.8	3.7	3.6	3.6		6.6	6.6	6.6	
					Middle	19.2	19.1	19.2	26.9	26.9	26.9	6.7	6.7	6.7	85.8	85.2	85.5	3.6	3.6	3.7	3.7	7.3	7.2	7.3	7.1
					Bottom	19.2	19.1	19.2	26.9	27.0	27.0	6.8	6.7	6.7	86.0	85.6	85.8	3.8	3.8	3.9		7.5	7.6	7.6	
E8	0724-0740	21.6	E	0.4	Surface	19.0	19.0	19.0	26.8	26.9	26.9	6.9	6.9	6.9	88.0	87.5	87.8	3.7	3.7	3.5		6.8	6.6	6.7	
					Middle	19.2	19.1	19.2	27.0	27.0	27.0	6.8	6.8	6.8	86.4	85.9	86.2	3.8	3.8	3.7	3.7	7.3	7.1	7.2	7.3
					Bottom	19.2	19.2	19.2	27.1	27.2	27.2	6.7	6.7	6.7	85.2	85.7	85.5	3.9	3.9	3.8		7.8	7.9	7.9	
S1	0747-0804	10.2	E	0.4	Surface	19.1	19.1	19.1	26.9	26.8	26.9	6.7	6.7	6.7	85.3	84.9	85.1	3.6	3.7	3.7		6.3	6.5	6.4	
					Middle	19.1	19.2	19.2	27.0	27.1	27.1	6.6	6.6	6.6	84.0	83.6	83.8	3.8	3.7	3.8	3.8	7.4	7.2	7.3	7.1
					Bottom	19.2	19.2	19.2	27.0	27.1	27.1	6.6	6.6	6.6	84.4	83.9	84.2	3.9	3.8	4.0		7.5	7.6	7.6	
G1	0811-0828	12.4	E	0.5	Surface	19.1	19.0	19.1	26.9	26.9	26.9	6.9	7.0	6.9	88.0	88.4	88.2	3.4	3.4	3.9		6.8	6.8	6.8	
					Middle	19.2	19.1	19.2	26.9	26.9	26.9	6.7	6.7	6.7	85.7	85.2	85.5	3.8	3.8	4.0	4.0	7.2	7.2	7.2	7.2
					Bottom	19.3	19.3	19.3	27.0	27.1	27.1	6.7	6.7	6.7	85.2	85.7	85.5	3.9	4.0	4.1		7.7	7.5	7.6	
E7	0834-0849	13.8	E	0.4	Surface	19.1	19.2	19.2	26.8	26.9	26.9	7.0	7.0	7.0	88.8	88.4	88.6	3.6	3.5	3.7		6.6	6.4	6.5	
					Middle	19.2	19.2	19.2	27.0	27.0	27.0	6.8	6.9	6.8	86.9	87.3	87.1	3.7	3.7	3.8	3.8	7.2	7.1	7.2	7.0
					Bottom	19.3	19.4	19.4	27.1	27.2	27.2	6.9	6.8	6.8	87.2	86.6	86.9	3.8	3.8	4.0		7.5	7.3	7.4	
F1	0858-0914	12.2	E	0.6	Surface	19.2	19.1	19.2	26.9	26.9	26.9	7.0	7.0	7.0	89.2	88.7	89.0	3.7	3.7	3.8		6.8	6.5	6.7	
					Middle	19.2	19.1	19.2	27.1	27.1	27.1	6.8	6.8	6.8	86.4	85.9	86.2	3.8	3.9	3.9	3.9	6.9	7.1	7.0	7.1
					Bottom	19.2	19.3	19.3	27.2	27.1	27.2	6.7	6.6	6.7	84.9	84.4	84.7	3.9	3.8	4.0		7.6	7.8	7.7	
G3	0920-0935	15.8	E	0.5	Surface	19.2	19.2	19.2	26.9	27.0	27.0	7.0	7.0	7.0	88.4	88.8	88.6	3.6	3.7	3.6		6.4	6.3	6.4	
					Middle	19.3	19.2	19.3	27.1	27.0	27.1	6.8	6.8	6.8	86.5	87.0	86.8	3.8	3.7	3.8	3.8	6.8	6.8	6.8	6.8
					Bottom	19.3	19.3	19.3	27.1	27.2	27.2	6.7	6.7	6.7	85.4	84.9	85.2	3.9	3.9	3.9		7.4	7.3	7.4	
E9	0943-1001	21.0	E	0.6	Surface	19.2	19.2	19.2	26.9	26.9	26.9	6.9	6.8	6.9	87.4	87.0	87.2	3.6	3.6	3.8		6.3	6.4	6.4	
					Middle	19.3	19.2	19.3	27.0	27.1	27.1	6.8	6.8	6.8	85.9	86.3	86.1	3.8	3.7	4.0	4.0	7.1	6.9	7.0	7.0
					Bottom	19.3	19.4	19.4	27.1	27.1	27.1	6.8	6.7	6.8	86.1	85.8	86.0	3.9	3.9	4.1		7.7	7.5	7.6	
S2	1007-1022	11.8	E	0.4	Surface	19.2	19.1	19.2	26.9	26.9	26.9	6.9	6.9	6.9	88.0	87.5	87.8	3.5	3.6	3.9		6.3	6.3	6.3	
					Middle	19.3	19.2	19.3	27.1	27.0	27.1	6.8	6.8	6.8	86.9	86.4	86.7	3.9	3.8	4.0	4.0	7.0	6.9	7.0	6.9
					Bottom	19.4	19.3	19.4	27.2	27.2	27.2	6.8	6.8	6.8	86.5	85.9	86.2	3.9	4.0	4.2		7.4	7.6	7.5	
G2	1028-1041	13.6	E	0.5	Surface	19.2	19.2	19.2	26.8	26.7	26.8	6.9	6.9	6.9	88.3	87.8	88.1	3.6	3.6	3.9		6.5	6.4	6.5	
					Middle	19.3	19.4	19.4	27.0	27.1	27.1	6.8	6.8	6.8	86.6	87.0	86.8	3.9	3.9	3.8	3.9	6.9	7.1	7.0	7.0
					Bottom	19.4	19.3	19.4	27.1	27.0	27.1	6.8	6.8	6.8	86.1	85.8	86.0	3.9	3.9	4.0		7.4	7.4	7.4	
S3	1048-1103	10.8	E	0.7	Surface	19.2	19.1	19.2	26.9	26.9	26.9	7.0	7.1	7.1	89.6	90.0	89.8	3.7	3.7	3.8		6.4	6.2	6.3	
					Middle	19.3	19.2	19.3	27.1	27.1	27.1	7.0	7.0	7.0	88.4	88.8	88.6	3.8	3.7	3.9	3.9	7.1	7.3	7.2	7.0
					Bottom	19.3	19.4	19.4	27.2	27.2	27.2	6.8	6.8	6.8	86.9	86.4	86.7	3.9	3.9	4.1		7.4	7.4	7.4	

Remark or Observation:

Note: * Average ** Depth Average

Annex C14 Impact Water Quality Monitoring Results during Second Round Monitoring on 29 December 2012

Date: 29-Dec-12
 Weather: Cloudy
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	1110-1117	35.8	E	0.3	Surface	19.3	19.2	19.3	26.9	26.9	26.9	7.0	7.0	7.0	89.6	89.2	89.4	3.6	3.6	3.5		6.4	6.6	6.5	
					Middle	19.3	19.4	19.4	27.2	27.2	27.2	6.9	6.9	6.9	88.0	87.7	87.9	3.8	3.8	3.7	3.7	6.9	6.9	6.9	6.9
					Bottom	19.5	19.4	19.5	27.3	27.2	27.3	6.8	6.8	6.8	87.0	86.5	86.8	3.9	3.8	3.8		7.4	7.3	7.4	
E8	1134-1151	21.4	E	0.3	Surface	19.3	19.3	19.3	26.8	26.9	26.9	7.1	7.1	7.1	90.3	89.8	90.1	3.6	3.7	3.7		6.3	6.5	6.4	
					Middle	19.4	19.4	19.4	27.1	27.1	27.1	6.8	6.8	6.8	86.9	86.4	86.7	3.8	3.7	3.8	3.8	7.1	6.9	7.0	7.0
					Bottom	19.5	19.5	19.5	27.2	27.1	27.2	6.8	6.7	6.7	85.8	85.3	85.6	3.9	3.9	4.0		7.5	7.6	7.6	
S1	1158-1214	10.4	E	0.4	Surface	19.3	19.2	19.3	26.9	26.9	26.9	7.0	7.0	7.0	88.9	88.4	88.7	3.5	3.6	3.8		6.3	6.6	6.5	
					Middle	19.4	19.3	19.4	27.1	27.2	27.2	6.8	6.8	6.8	85.9	86.3	86.1	3.9	3.8	3.9	3.9	6.9	7.1	7.0	7.1
					Bottom	19.4	19.5	19.5	27.2	27.1	27.2	6.8	6.7	6.8	86.3	85.8	86.1	4.0	4.0	4.0		7.8	7.6	7.7	
G1	1221-1237	12.2	E	0.6	Surface	19.3	19.2	19.3	26.8	26.7	26.8	7.0	7.0	7.0	89.2	89.6	89.4	3.5	3.5	3.7		6.2	6.4	6.3	
					Middle	19.2	19.1	19.2	27.1	27.1	27.1	6.8	6.7	6.8	86.2	85.7	86.0	3.9	4.0	3.8	3.8	7.0	7.3	7.2	7.0
					Bottom	19.3	19.4	19.4	27.2	27.2	27.2	6.8	6.9	6.8	86.8	87.2	87.0	3.9	3.9	4.1		7.6	7.7	7.7	
E7	1245-1300	13.4	E	0.7	Surface	19.3	19.2	19.3	26.9	26.8	26.9	7.1	7.0	7.0	89.7	89.2	89.5	3.7	3.8	3.8		6.5	6.8	6.7	
					Middle	19.3	19.3	19.3	27.0	27.1	27.1	6.9	6.9	6.9	88.3	87.8	88.1	3.8	3.8	3.8	3.9	7.1	7.3	7.2	7.1
					Bottom	19.4	19.3	19.4	27.2	27.2	27.2	6.9	6.9	6.9	87.8	88.2	88.0	3.9	3.9	4.2		7.6	7.5	7.6	
F1	1308-1322	12.4	E	0.5	Surface	19.3	19.3	19.3	26.9	26.9	26.9	7.0	7.0	7.0	88.4	88.8	88.6	3.6	3.7	3.8		6.3	6.5	6.4	
					Middle	19.3	19.4	19.4	27.1	27.1	27.1	6.9	6.9	6.9	87.8	88.3	88.1	3.8	3.8	3.9	3.9	7.0	6.8	6.9	6.9
					Bottom	19.4	19.4	19.4	27.2	27.1	27.2	6.8	6.8	6.8	86.3	85.8	86.1	3.9	3.8	4.1		7.3	7.3	7.3	
G3	1328-1345	15.4	E	0.6	Surface	19.3	19.2	19.3	26.9	26.8	26.9	7.0	7.1	7.1	89.6	90.0	89.8	3.6	3.6	3.7		6.3	6.2	6.3	
					Middle	19.4	19.3	19.4	27.1	27.1	27.1	6.9	6.9	6.9	87.5	87.2	87.4	3.8	3.7	3.8	3.9	6.9	7.0	7.0	6.9
					Bottom	19.3	19.4	19.4	27.3	27.2	27.3	6.8	6.8	6.8	86.8	86.3	86.6	3.9	3.9	4.2		7.4	7.5	7.5	
E9	1352-1410	20.8	E	0.5	Surface	19.3	19.2	19.3	26.9	26.9	26.9	7.0	7.0	7.0	88.4	88.8	88.6	3.6	3.6	3.5		6.2	6.4	6.3	
					Middle	19.3	19.2	19.3	27.0	27.0	27.0	6.9	6.9	6.9	87.8	88.2	88.0	3.8	3.7	3.7	3.8	7.2	7.0	7.1	7.0
					Bottom	19.4	19.3	19.4	27.1	27.0	27.1	6.8	6.8	6.8	85.8	86.2	86.0	3.9	3.8	4.1		7.8	7.6	7.7	
S2	1415-1427	11.6	E	0.5	Surface	19.3	19.3	19.3	26.9	26.9	26.9	7.0	7.1	7.0	89.4	89.7	89.6	3.6	3.7	3.7		6.4	6.4	6.4	
					Middle	19.3	19.4	19.4	27.2	27.1	27.2	7.0	6.9	7.0	88.8	88.3	88.6	3.9	3.9	3.9	3.9	7.2	7.1	7.2	7.0
					Bottom	19.4	19.4	19.4	27.2	27.2	27.2	6.8	6.8	6.8	87.0	86.5	86.8	3.9	3.9	4.2		7.5	7.3	7.4	
G2	1433-1445	13.8	E	0.6	Surface	19.3	19.2	19.3	26.8	2.9	14.9	7.1	7.0	7.0	89.8	89.4	89.6	3.5	3.5	3.8		6.4	6.6	6.5	
					Middle	19.4	19.3	19.4	27.0	27.1	27.1	6.9	6.8	6.9	87.4	87.0	87.2	3.6	3.7	4.0	4.0	7.0	7.3	7.2	7.2
					Bottom	19.3	19.2	19.3	27.2	27.2	27.2	6.8	6.8	6.8	86.5	86.3	86.4	3.9	3.9	4.3		7.7	8.0	7.9	
S3	1450-1503	11.2	E	0.7	Surface	19.3	19.3	19.3	26.8	26.9	26.9	7.0	7.1	7.0	89.3	89.7	89.5	3.5	3.5	3.6		6.2	6.4	6.3	
					Middle	19.4	19.4	19.4	27.1	27.1	27.1	6.8	6.8	6.8	86.4	85.9	86.2	3.7	3.8	3.8	3.9	7.1	7.0	7.1	7.0
					Bottom	19.4	19.3	19.4	27.2	27.2	27.2	6.9	6.8	6.8	87.3	86.9	87.1	3.9	4.0	4.4		7.5	7.8	7.7	

Remark or Observation:

Note: * Average ** Depth Average

Annex C15 Impact Water Quality Monitoring Results during Third Round Monitoring on 29 December 2012

Date: 29-Dec-12
 Weather: Cloudy
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)				Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**	
C1	1507-1521	36.6	E	0.8	Surface	19.0	18.9	19.0	26.8	26.8	26.8	6.9	6.9	6.9	87.5	88.1	87.8	3.7	3.8	3.8		6.6	6.5	6.6		
					Middle	19.0	19.1	19.1	26.9	27.0	27.0	6.7	6.7	6.7	84.8	85.4	85.1	3.6	3.6	3.6	3.8	6.8	7.0	6.9	6.9	
					Bottom	19.1	19.1	19.1	27.2	27.3	27.3	6.6	6.6	6.6	83.9	84.3	84.1	4.0	3.9	3.9		7.4	7.2	7.3		
E8	1526-1540	21.8	E	0.7	Surface	19.0	19.0	19.0	26.8	26.9	26.9	6.9	6.8	6.8	87.3	86.8	87.1	3.8	3.9	3.8		6.6	6.8	6.7		
					Middle	19.0	18.9	19.0	27.0	27.0	27.0	6.7	6.7	6.7	85.4	85.7	85.6	3.8	3.7	3.8	3.9	7.2	7.4	7.3	7.1	
					Bottom	19.0	19.1	19.1	27.2	27.2	27.2	6.6	6.6	6.6	83.6	84.1	83.9	4.0	4.0	4.0		7.3	7.5	7.4		
S1	1546-1600	10.6	E	0.7	Surface	18.9	19.0	19.0	26.8	26.8	26.8	6.7	6.8	6.8	85.7	86.2	86.0	3.7	3.7	3.7		6.3	6.5	6.4		
					Middle	19.0	19.0	19.0	26.8	26.9	26.9	6.7	6.7	6.7	85.2	84.8	85.0	3.7	3.6	3.7	3.7	6.9	6.8	6.9	6.9	
					Bottom	19.0	19.0	19.0	27.0	27.0	27.0	6.5	6.6	6.5	82.9	83.3	83.1	3.8	3.9	3.9		7.4	7.6	7.5		
G1	1605-1620	12.6	E	0.5	Surface	18.9	18.9	18.9	26.8	26.9	26.9	7.0	6.9	7.0	88.9	88.1	88.5	3.6	3.6	3.6		6.3	6.6	6.5		
					Middle	18.9	19.0	19.0	26.9	27.0	27.0	6.8	6.8	6.8	86.4	87.0	86.7	3.7	3.8	3.7	3.7	7.0	7.3	7.2	7.1	
					Bottom	19.0	19.0	19.0	27.1	27.1	27.1	6.7	6.7	6.7	85.4	85.1	85.3	3.9	3.8	3.9		7.8	7.6	7.7		
E7	1624-1639	13.8	E	0.5	Surface	18.9	19.0	19.0	26.8	26.8	26.8	6.9	6.9	6.9	87.5	88.0	87.8	3.5	3.5	3.5		6.3	6.2	6.3		
					Middle	19.0	19.0	19.0	26.9	27.0	27.0	6.8	6.8	6.8	86.6	86.2	86.4	3.7	3.7	3.7	3.7	6.9	7.2	7.1	7.0	
					Bottom	19.0	19.0	19.0	27.0	27.1	27.1	6.7	6.6	6.6	84.7	84.2	84.5	3.9	3.9	3.9		7.7	7.6	7.7		
F1	1645-1700	12.4	E	0.6	Surface	18.9	18.9	18.9	26.8	26.9	26.9	7.0	7.0	7.0	88.7	89.0	88.9	3.7	3.8	3.7		6.7	6.9	6.8		
					Middle	19.0	19.0	19.0	27.0	27.0	27.0	6.8	6.8	6.8	87.0	86.6	86.8	3.8	3.9	3.9	3.8	7.4	7.6	7.5	7.4	
					Bottom	19.0	19.1	19.1	27.1	27.1	27.1	6.7	6.7	6.7	85.1	85.6	85.4	4.0	3.9	3.9		7.8	7.9	7.9		
G3	1706-1720	16.0	E	0.6	Surface	19.0	18.9	19.0	26.8	26.8	26.8	6.9	6.9	6.9	87.8	87.3	87.6	3.7	3.7	3.7		6.3	6.2	6.3		
					Middle	19.0	19.1	19.1	27.0	27.1	27.1	6.8	6.8	6.8	86.5	86.1	86.3	3.8	3.9	3.8	3.8	7.1	7.2	7.2	7.0	
					Bottom	19.1	19.1	19.1	27.2	27.2	27.2	6.6	6.7	6.6	84.2	84.6	84.4	4.0	4.0	4.0		7.4	7.5	7.5		
E9	1726-1741	21.2	E	0.7	Surface	19.0	19.0	19.0	26.9	27.0	27.0	6.8	6.9	6.8	86.5	87.1	86.8	3.7	3.7	3.7		6.6	6.8	6.7		
					Middle	19.1	19.1	19.1	27.2	27.1	27.2	6.7	6.7	6.7	85.7	85.2	85.5	3.9	3.9	3.9	3.9	7.2	7.3	7.3	7.2	
					Bottom	19.1	19.2	19.2	27.3	27.2	27.3	6.5	6.6	6.6	83.1	83.7	83.4	4.1	4.1	4.1		7.7	7.8	7.8		
S2	1746-1802	12.0	E	0.6	Surface	19.1	19.0	19.1	26.9	26.9	26.9	6.9	6.9	6.9	87.5	88.0	87.8	3.6	3.6	3.6		6.4	6.5	6.5		
					Middle	19.0	19.0	19.0	27.0	27.1	27.1	6.8	6.8	6.8	86.4	86.0	86.2	3.8	3.8	3.8	3.8	7.1	7.1	7.1	7.1	
					Bottom	19.1	19.1	19.1	27.2	27.1	27.2	6.7	6.7	6.7	85.4	85.0	85.2	3.9	4.0	3.9		7.7	7.8	7.8		
G2	1810-1827	13.6	E	0.6	Surface	19.0	18.9	19.0	26.9	26.9	26.9	7.0	6.9	6.9	88.4	87.8	88.1	3.6	3.7	3.6		6.3	6.4	6.4		
					Middle	19.0	19.0	19.0	27.1	27.1	27.1	6.9	6.8	6.8	87.3	86.6	87.0	3.8	3.9	3.9	3.8	7.2	7.3	7.3	7.2	
					Bottom	19.0	19.1	19.1	27.2	27.2	27.2	6.6	6.6	6.6	84.0	84.5	84.3	4.0	4.0	4.0		7.8	8.0	7.9		
S3	1838-1855	11.0	E	0.5	Surface	18.9	18.9	18.9	26.9	27.0	27.0	7.0	7.0	7.0	88.7	89.3	89.0	3.7	3.7	3.7		6.4	6.6	6.5		
					Middle	18.9	19.0	19.0	27.1	27.1	27.1	6.9	6.9	6.9	87.8	87.4	87.6	3.8	3.8	3.8	3.8	6.9	7.1	7.0	7.0	
					Bottom	18.9	19.0	19.0	27.1	27.2	27.2	6.7	6.8	6.7	85.4	85.9	85.7	3.9	4.0	4.0		7.5	7.6	7.6		

Remark or Observation:

Note: * Average ** Depth Average

Annex C16 Impact Water Quality Monitoring Results during Fourth Round Monitoring on 29 December 2012

Date: 29-Dec-12
 Weather: Cloudy
 Sea Conditions: Small Wave
 Zone: A

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms ⁻¹)	Monitoring Depth	Temperature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
C1	1908-1923	38.0	E	0.7	Surface	18.9	18.9	18.9	26.9	26.9	26.9	6.8	6.8	6.8	87.0	86.5	86.8	3.8	3.9	3.3		6.6	6.4	6.5	
					Middle	18.9	19.0	19.0	27.1	27.2	27.2	6.7	6.7	6.7	85.4	85.7	85.6	3.7	3.7	3.4	3.4	6.8	6.9	6.9	7.0
					Bottom	19.0	19.0	19.0	27.3	27.3	27.3	6.5	6.5	6.5	82.9	82.4	82.7	4.0	4.1	3.6		7.4	7.7	7.6	
E8	1929-1943	22.0	E	0.5	Surface	18.9	19.0	19.0	26.9	27.0	27.0	6.8	6.7	6.8	86.2	85.6	85.9	3.9	3.9	3.5		6.8	6.8	6.8	
					Middle	18.9	18.9	18.9	27.0	27.1	27.1	6.7	6.7	6.7	85.1	84.7	84.9	3.7	3.7	3.7	3.6	7.1	7.0	7.1	7.1
					Bottom	19.0	19.0	19.0	27.2	27.1	27.2	6.5	6.5	6.5	83.2	82.8	83.0	4.0	4.0	3.7		7.5	7.6	7.6	
S1	1950-2005	10.8	E	0.4	Surface	18.8	18.9	18.9	26.8	26.9	26.9	6.7	6.6	6.7	85.7	84.0	84.9	3.7	3.8	3.4		6.3	6.4	6.4	
					Middle	18.9	18.9	18.9	26.9	26.9	26.9	6.6	6.6	6.6	84.3	83.7	84.0	3.7	3.8	3.5	3.5	7.3	7.4	7.4	7.1
					Bottom	18.9	19.0	19.0	27.1	27.0	27.1	6.5	6.5	6.5	82.2	82.7	82.5	3.9	3.9	3.6		7.6	7.6	7.6	
G1	2010-2025	12.8	E	0.4	Surface	18.9	18.9	18.9	26.9	26.8	26.9	6.7	6.7	6.7	85.0	85.6	85.3	3.7	3.7	3.5		6.3	6.4	6.4	
					Middle	19.0	19.0	19.0	26.9	27.0	27.0	6.6	6.7	6.6	84.1	84.6	84.4	3.9	3.9	3.7	3.7	7.2	7.4	7.3	7.1
					Bottom	19.0	19.0	19.0	27.1	27.0	27.1	6.4	6.5	6.4	81.8	82.2	82.0	4.0	4.1	3.8		7.5	7.8	7.7	
E7	2031-2045	14.0	E	0.5	Surface	18.9	19.0	19.0	26.9	26.9	26.9	6.8	6.8	6.8	86.4	85.9	86.2	3.6	3.6	3.3		6.6	6.3	6.5	
					Middle	19.0	19.0	19.0	27.0	27.1	27.1	6.7	6.7	6.7	85.2	84.8	85.0	3.8	3.8	3.5	3.5	6.9	7.1	7.0	7.0
					Bottom	19.0	18.9	19.0	27.2	27.1	27.2	6.5	6.5	6.5	82.7	83.2	83.0	4.0	4.0	3.6		7.6	7.4	7.5	
F1	2052-2107	12.6	E	0.5	Surface	18.8	18.9	18.9	26.8	26.8	26.8	6.9	6.9	6.9	87.6	87.1	87.4	3.7	3.8	3.2		6.4	6.4	6.4	
					Middle	18.9	19.0	19.0	26.9	27.0	27.0	6.8	6.8	6.8	86.5	85.9	86.2	3.9	3.9	3.5	3.4	7.1	7.1	7.1	7.1
					Bottom	19.0	19.0	19.0	27.1	27.1	27.1	6.7	6.6	6.6	84.6	84.1	84.4	4.1	4.1	3.5		7.5	7.8	7.7	
G3	2113-2128	16.2	E	0.6	Surface	18.8	18.8	18.8	26.8	26.9	26.9	6.8	6.8	6.8	86.9	86.1	86.5	3.7	3.8	3.3		6.5	6.6	6.6	
					Middle	18.8	18.9	18.9	27.1	27.2	27.2	6.7	6.7	6.7	84.6	85.1	84.9	3.9	4.0	3.5	3.5	7.1	7.4	7.3	7.1
					Bottom	18.9	19.0	19.0	27.2	27.3	27.3	6.4	6.5	6.4	81.5	82.3	81.9	4.1	4.2	3.6		7.6	7.5	7.6	
E9	2135-2149	21.2	E	0.6	Surface	18.9	18.9	18.9	26.9	27.0	27.0	6.8	6.8	6.8	86.0	86.5	86.3	3.8	3.8	3.3		6.5	6.6	6.6	
					Middle	18.9	18.8	18.9	27.1	27.1	27.1	6.7	6.7	6.7	85.2	84.7	85.0	4.0	4.0	3.4	3.5	7.1	7.2	7.2	7.1
					Bottom	18.9	18.9	18.9	27.2	27.2	27.2	6.5	6.4	6.4	82.3	81.5	81.9	4.2	4.2	3.7		7.6	7.6	7.6	
S2	2155-2210	12.2	W	0.5	Surface	18.9	19.0	19.0	26.9	27.0	27.0	6.8	6.9	6.8	86.9	87.3	87.1	3.7	3.8	3.6		6.5	6.6	6.6	
					Middle	18.9	18.9	18.9	27.0	27.0	27.0	6.7	6.7	6.7	85.7	85.2	85.5	3.9	3.9	3.6	3.7	7.1	7.3	7.2	7.1
					Bottom	19.0	19.0	19.0	27.1	27.1	27.1	6.6	6.6	6.6	84.5	84.1	84.3	4.0	4.0	3.8		7.7	7.6	7.7	
G2	2217-2232	14.2	W	0.4	Surface	18.9	18.9	18.9	27.0	27.0	27.0	6.9	6.9	6.9	87.6	87.1	87.4	3.7	3.8	3.5		6.6	6.4	6.5	
					Middle	18.9	18.8	18.9	27.1	27.2	27.2	6.7	6.7	6.7	85.0	85.6	85.3	3.9	4.0	3.7	3.7	7.1	7.3	7.2	7.2
					Bottom	18.9	18.9	18.9	27.2	27.3	27.3	6.6	6.5	6.5	83.3	82.8	83.1	4.1	4.1	3.9		7.7	7.8	7.8	
S3	2239-2255	11.6	W	0.4	Surface	18.8	18.9	18.9	27.0	26.9	27.0	6.9	6.9	6.9	88.3	87.8	88.1	3.8	3.8	3.6		6.4	6.5	6.5	
					Middle	18.8	18.8	18.8	27.0	27.1	27.1	6.9	6.8	6.9	86.5	86.8	86.7	4.0	3.9	3.8	3.7	7.3	7.6	7.5	7.2
					Bottom	18.8	18.9	18.9	27.2	27.1	27.2	6.7	6.7	6.7	84.8	85.2	85.0	4.0	4.0	3.9		7.7	7.6	7.7	

Remark or Observation:

Note: * Average ** Depth Average

Annex C17 Summary of Compliance with Action and Limit Level for Zone A

Compliance with Action Level and Limit Level for Zone A - Round 1 (07:00), 29 December						
Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.41	8.56
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	4.77	9.27
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone A - Round 2 (11:00), 29 December						
Station	Limits	DO (Surface)	DO (Middle)	DO (Bottom)	Turbidity (*DA)	SS (*DA)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.50	8.30
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	4.87	8.99
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Annex C18 Summary of Compliance with Action and Limit Level for Zone A

Compliance with Action Level and Limit Level for Zone A - Round 3 (15:00), 29 December						
Station	Limits	DO (Surface)	DO (Middle)	DO (Bottom)	Turbidity (*DA)	SS (*DA)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.52	8.30
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	4.90	8.99
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone A - Round 4 (19:00), 29 December						
Station	Limits	DO (Surface)	DO (Middle)	DO (Bottom)	Turbidity (*DA)	SS (*DA)
	Action Level (Baseline)	4.36	4.36	4.39	4.38	6.27
	Or Action Level (C1*1.2)	N.A.	N.A.	N.A.	4.63	8.36
	Limit Level (Baseline)	4.25	4.25	4.33	4.43	6.40
	And Limit Level (C1*1.3)	N.A.	N.A.	N.A.	5.02	9.06
E7	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E8	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
E9	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
F1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S1	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S2	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N
S3	Exceedance of Action Level	N	N	N	N	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

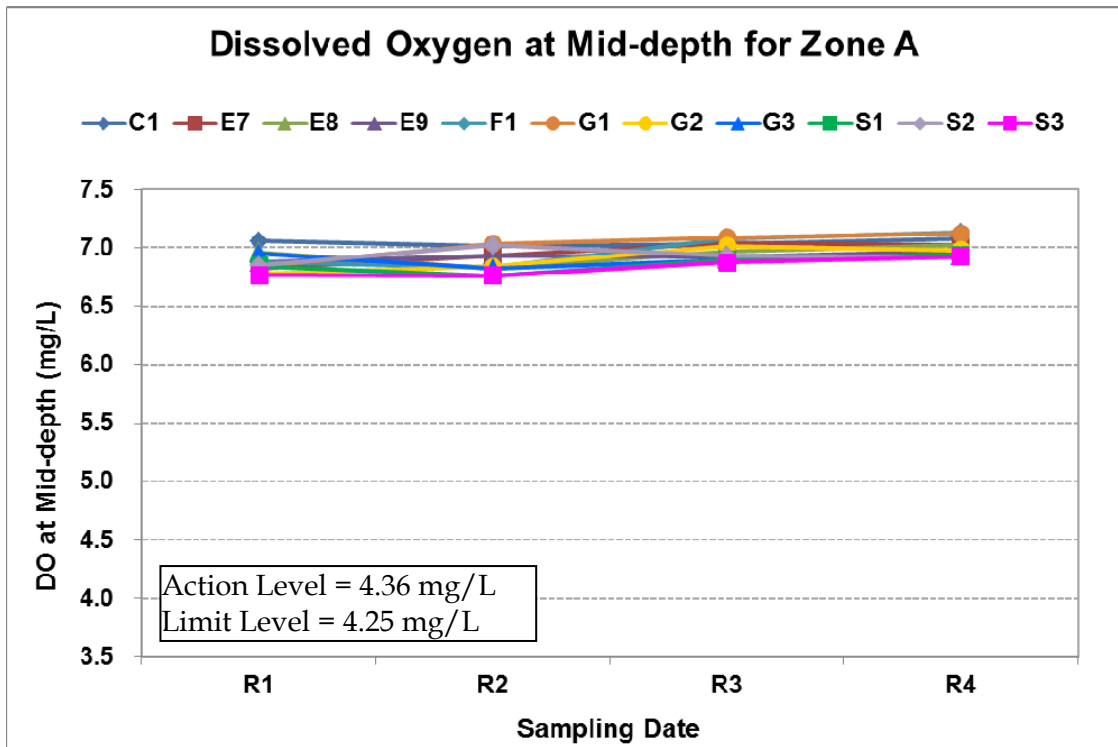
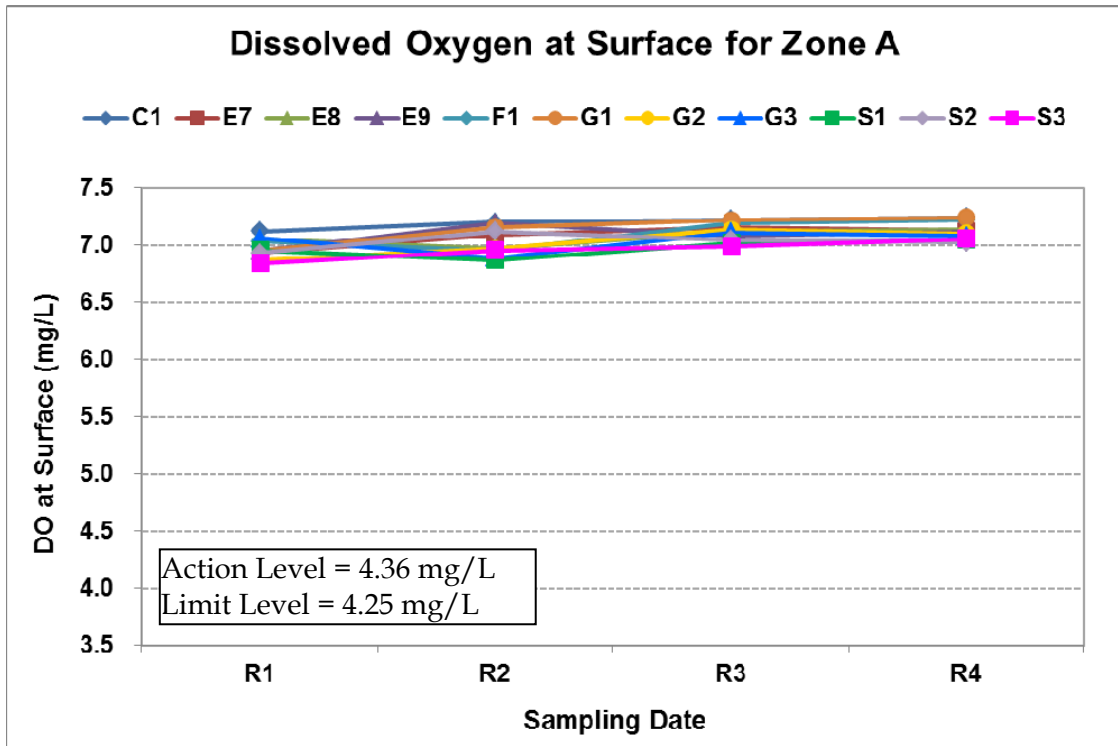


Figure C1 Dissolved oxygen (mg/L) at surface and mid-depth of water column measured during the impact monitoring on 27 December 2012 for Zone A



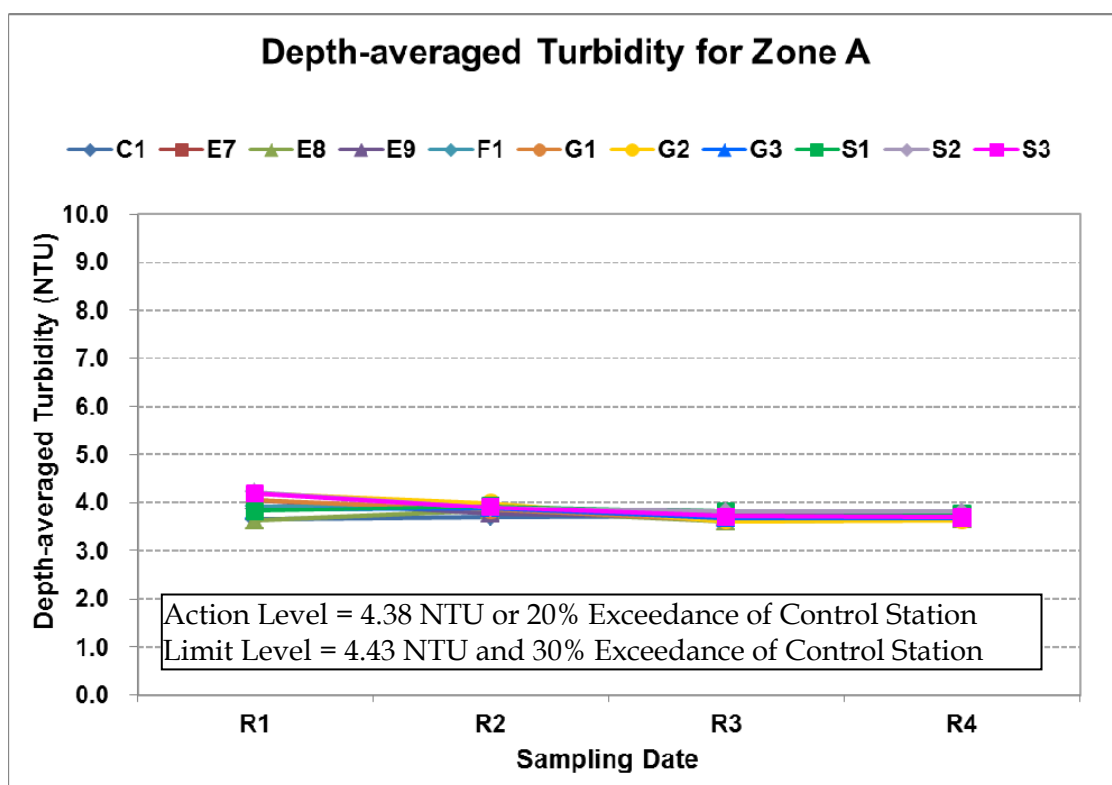
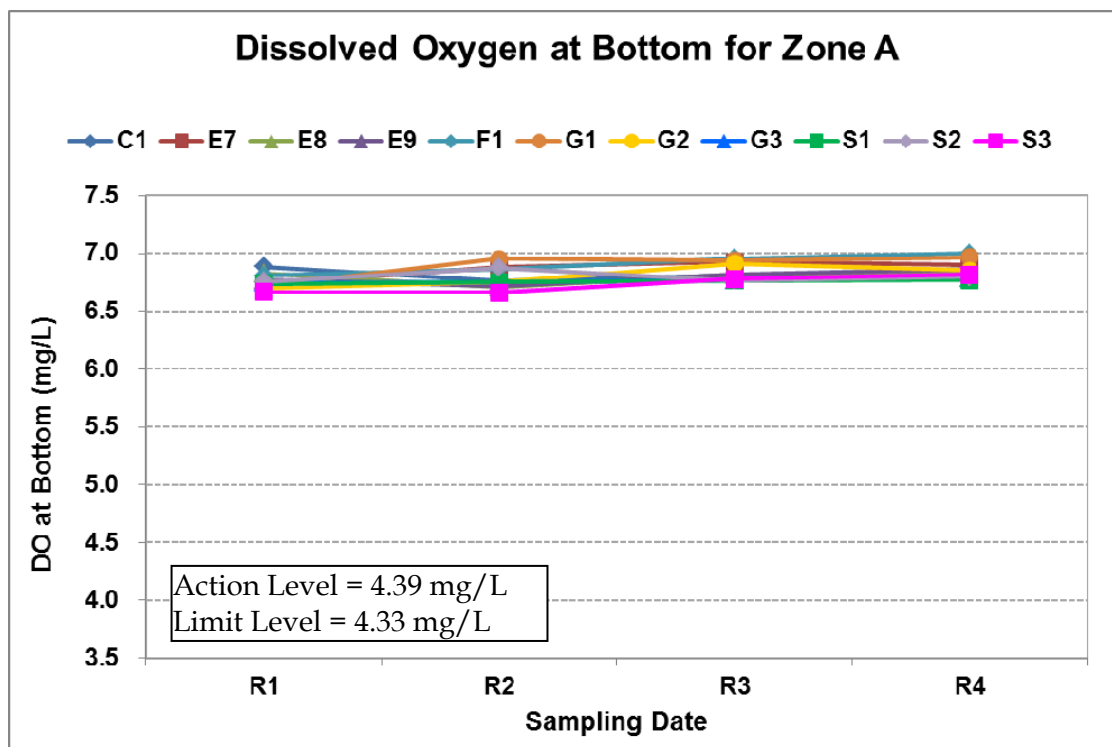


Figure C2 Dissolved oxygen (mg/L) at bottom of water column and depth-averaged Turbidity (NTU) measured during the impact monitoring on 27 December 2012 for Zone A



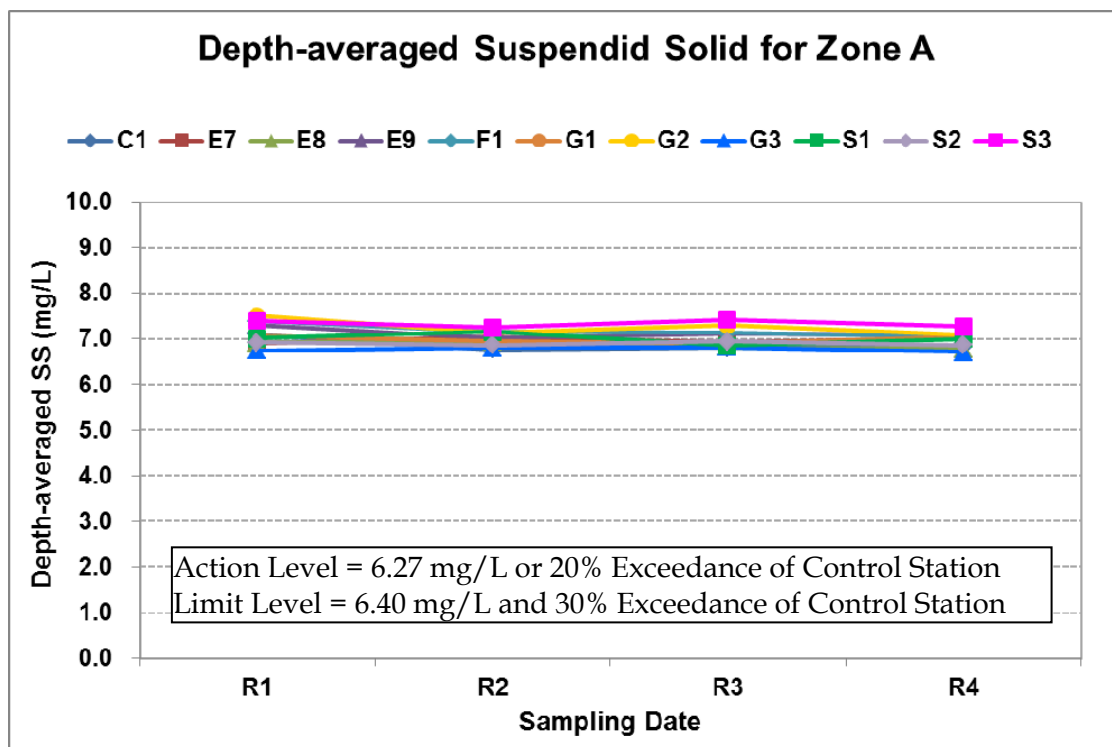


Figure C3 Depth-averaged suspended solid (mg/L) during the impact monitoring on 27 December 2012 for Zone A



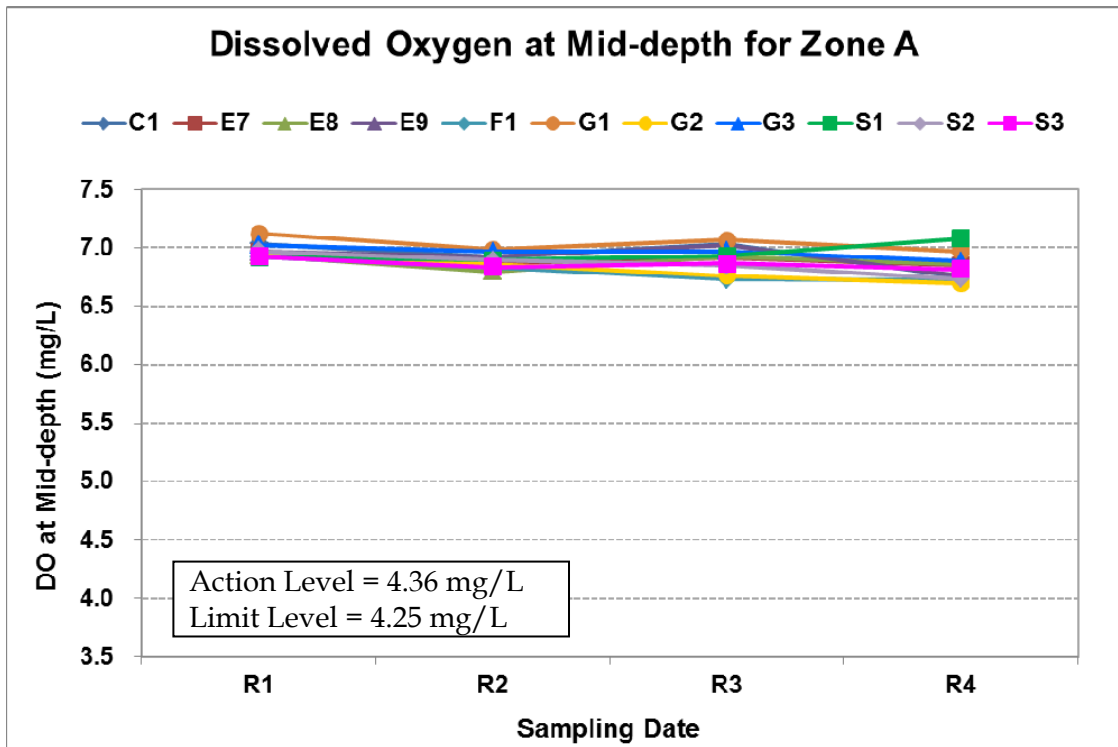
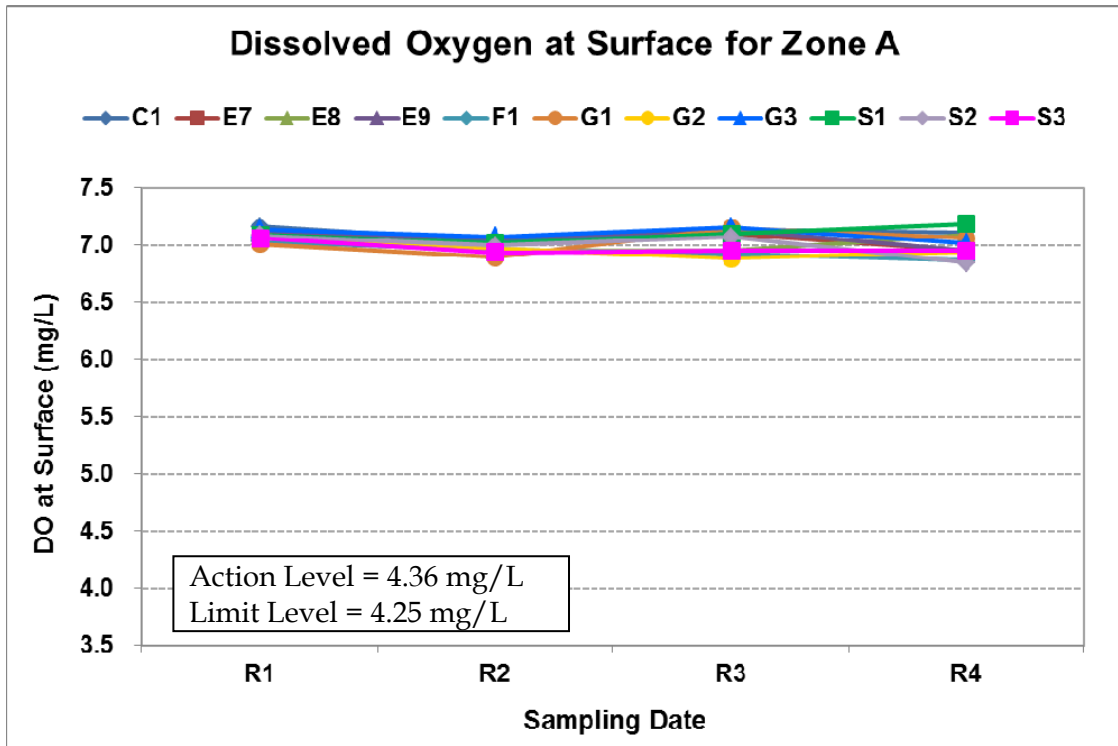


Figure C4 Dissolved oxygen (mg/L) at surface and mid-depth of water column measured during the impact monitoring on 28 December 2012 for Zone A



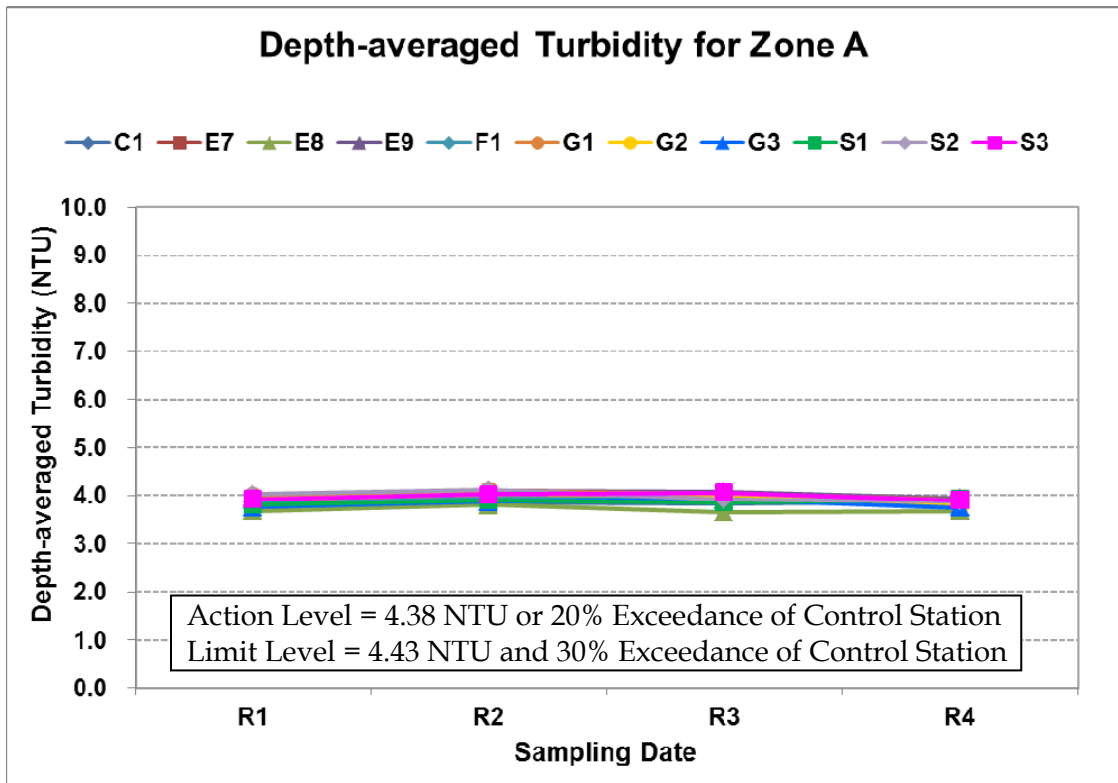
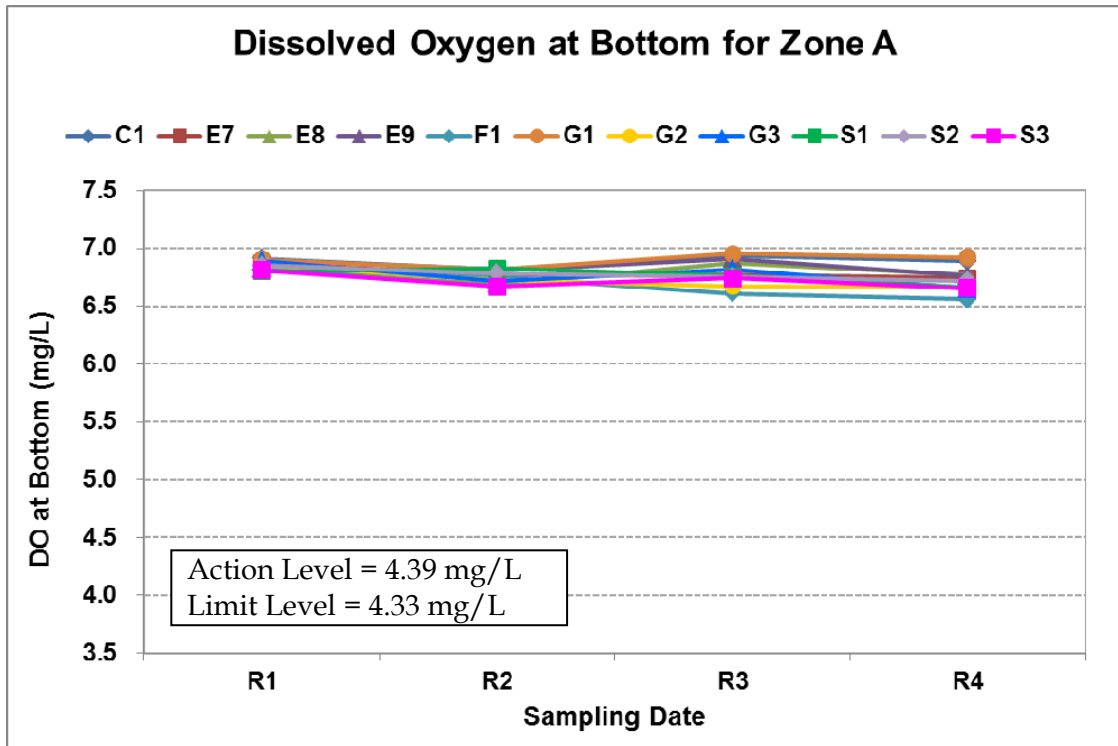


Figure C5 Dissolved oxygen (mg/L) at bottom of water column and depth-averaged Turbidity (NTU) measured during the impact monitoring on 28 December 2012 for Zone A



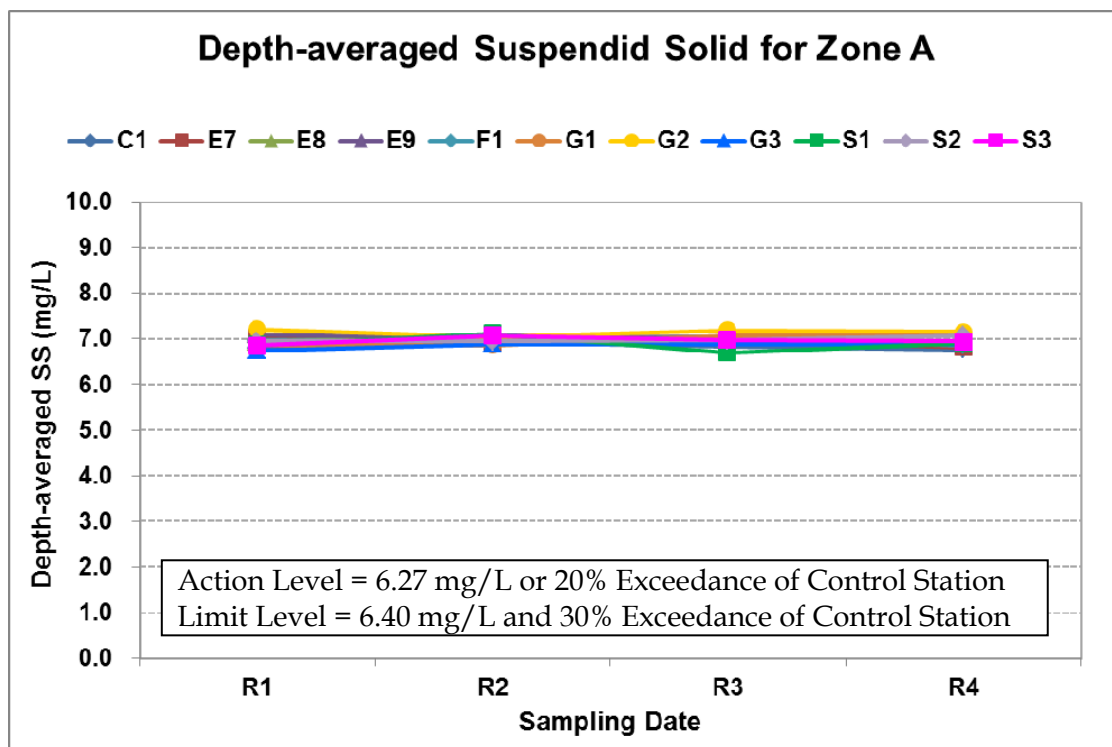


Figure C6 Depth-averaged suspended solid (mg/L) during the impact monitoring on 28 December 2012 for Zone A



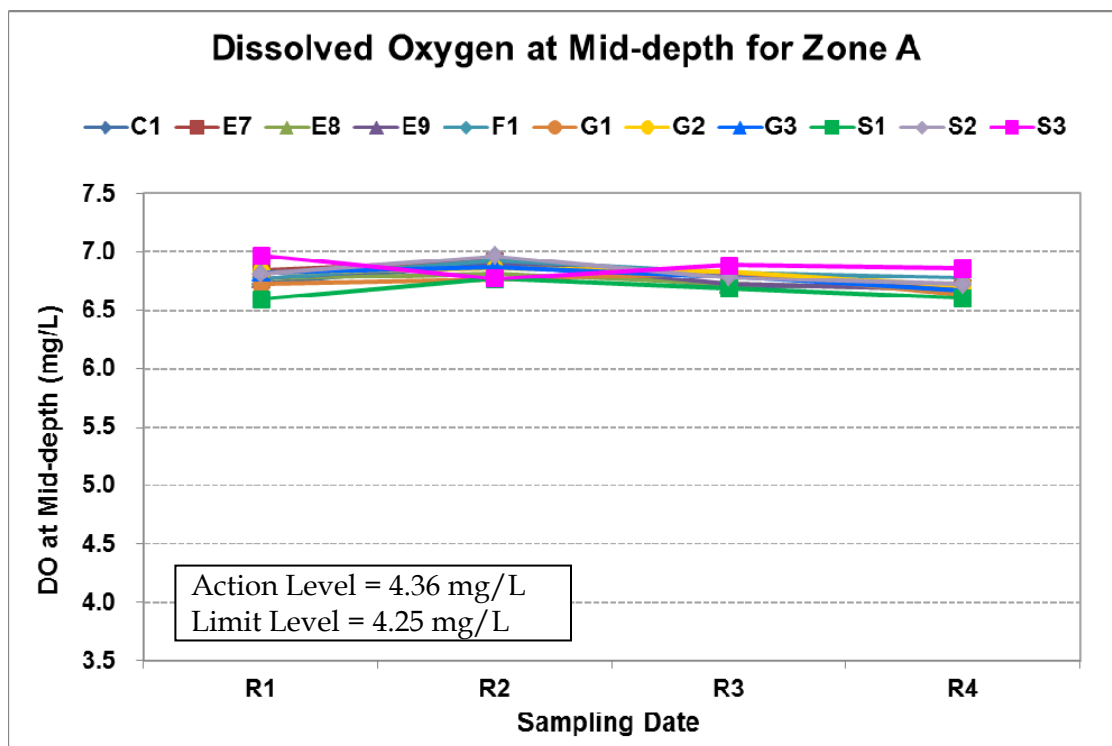
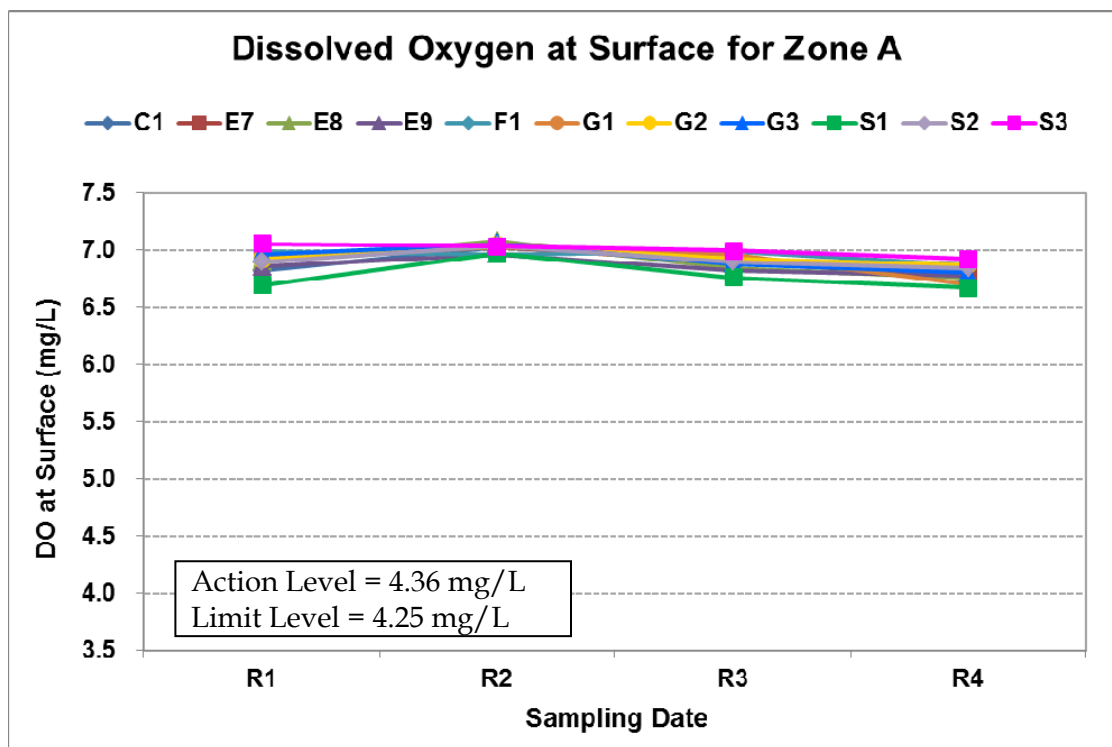


Figure C7 Dissolved oxygen (mg/L) at surface and mid-depth of water column measured during the impact monitoring on 29 December 2012 for Zone A



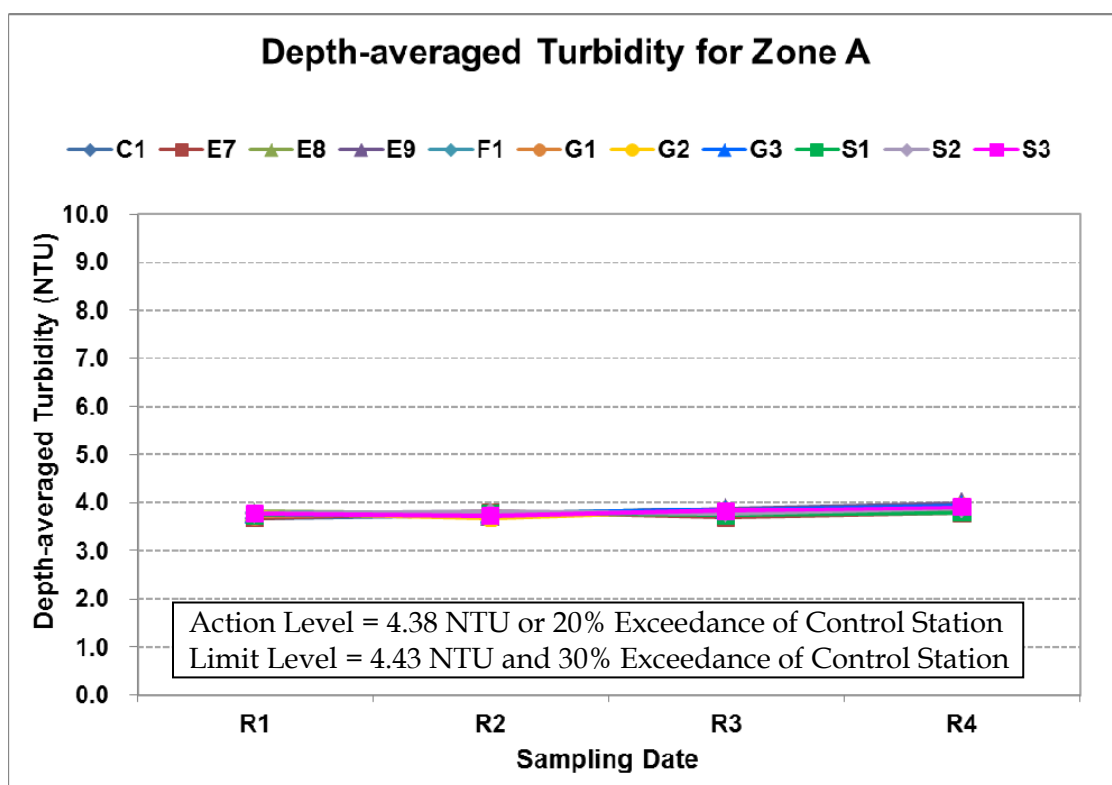
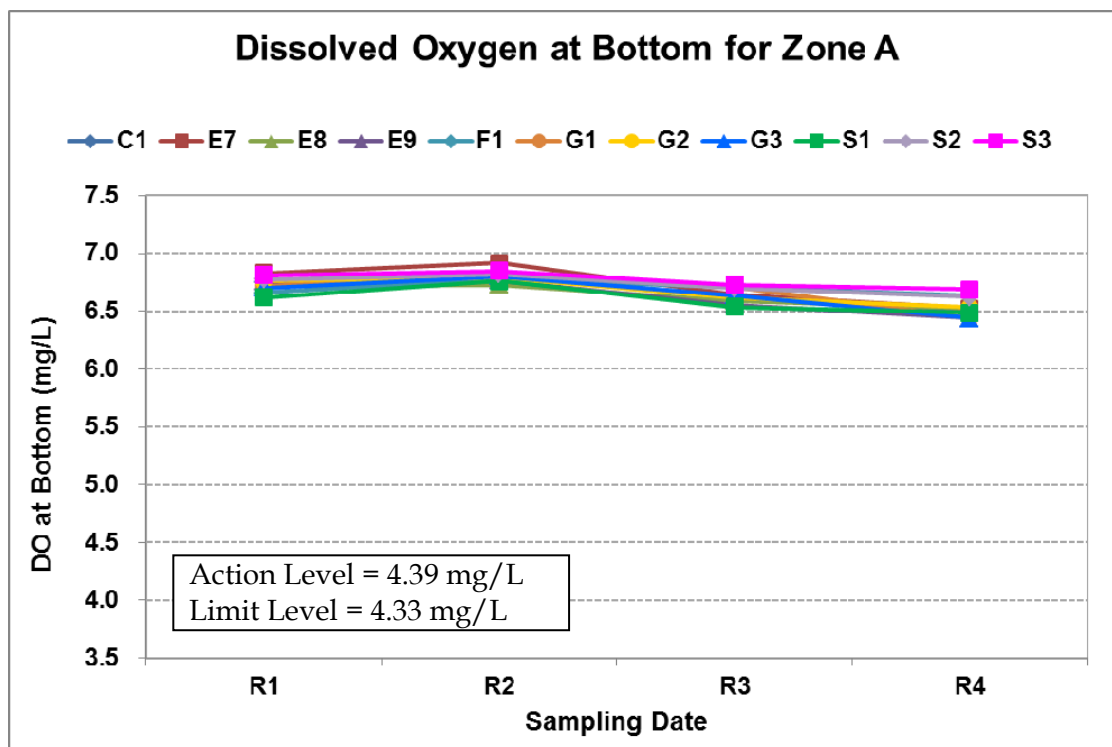


Figure C8 Dissolved oxygen (mg/L) at bottom of water column and depth-averaged Turbidity (NTU) measured during the impact monitoring on 29 December 2012 for Zone A



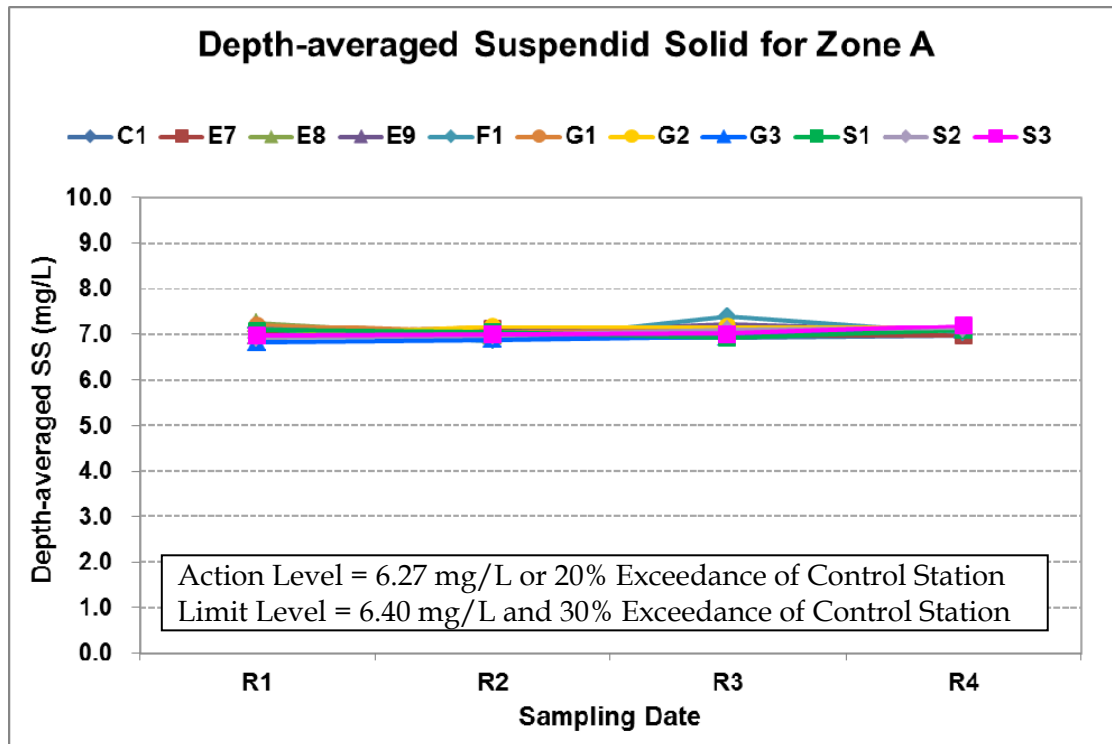


Figure C9 Depth-averaged suspended solid (mg/L) during the impact monitoring on 29 December 2012 for Zone A



ERM has over 140 offices
Across the following
countries worldwide

Argentina	New Zealand
Australia	Panama
Belgium	Peru
Brazil	Poland
Canada	Portugal
China	Puerto Rico
Colombia	Romania
France	Russia
Germany	Singapore
Hong Kong	South Africa
Hungary	Spain
India	Sweden
Indonesia	Taiwan
Ireland	Thailand
Italy	The Netherlands
Japan	United Arab Emirates
Kazakhstan	United Kingdom
Korea	United States
Malaysia	Vietnam
Mexico	

Environmental Resources Management

**16/F DCH Commercial Centre
25 Westlands Road
Quarry Bay, Hong Kong**

T: 2271 3000

F: 2723 5660

www.erm.com

