The Hongkong Electric Co Ltd
香港電燈有限公司

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) ORDINANCE, CAP. 499

ENVIRONMENTAL PERMIT NO. EP-165/2003

LAMMA POWER STATION
NAVIGATION CHANNEL IMPROVEMENT

Report Title	Monthly EM&A Report (November 2004)
Date	13/12/2004
Certified by	(Mr. Ip Tat-Yan, Environmental Team Leader)
Verified by	(Nature & Technologies (HK) Ltd, Independent Environmental Checker)

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EXECUTIVE SUMMARY

This is the seventeenth monthly Environmental Monitoring and Audit (EM&A) report for the Project "Lamma Navigation Channel Improvement" prepared by the Environmental Team (ET). This report presents the results of impact monitoring on marine water quality for the said project in November 2004.

Marine water quality monitoring was performed. The results were checked against the established Action/Limit (AL) levels. On-site audit was conducted once per week. The implementation status of the environmental mitigation measures, Event/Action Plan and environmental complaint handling procedures were also checked.

Construction Activities Undertaken

The dredging contractor had temporarily suspended the dredging work since 3rd November 2004. After the review of the survey results, the one-day dredging operation was carried out on 26th November 2004 for removal of the remaining high spot over the channel.

Construction activities for the project during the reporting month was dredging and dumping of dredged mud. The maximum hourly and daily dredging rates actually achieved by the contractors were within the limits specified in the latest dredging schedule.

Environmental Monitoring Works

Marine water monitoring was conducted as scheduled in the reporting month. As the dredging work for removal of high spot was carried out on 1st, 2nd and 26th November 2004, marine water monitoring was conducted during the above periods on 1st and 26th November 2004 according to the monitoring schedule.

Water Quality
There was no exceedance of Action and Limit Levels for water quality in the reporting month.

Site Environmental Audit

Site audits were carried out on a weekly basis to monitor environmental issues on the construction site. As the dredging work for removal of high spot was carried out on 1st, 2nd and 26th November 2004, site audits were conducted during the above periods on 1st and 26th November 2004. The site conditions were generally satisfactory. All required mitigation measures were implemented.

Environmental Licensing and Permitting

Description	Permit No.	Valid Period		Issued To	Date of Issuance
		From	To		
Environmental Permit	EP-165/2003	08/04/03	-	HEC	08/04/03
Construction Noise Permit	GW-RS0379-04	31/08/04	30/11/04	Contractor	27/08/04

Description	Permit No.	Valid Period		Issued To	Date of Issuance
		From	To		
Marine Dumping Permit	EP/MD/05-074	16/10/04	30/11/04	Contractor	14/10/04
Registration of Chemical Waste Producer	WPN5296-912-P2800-17	22/07/03	-	Contractor	22/07/03

Implementation Status of Environmental Mitigation Measures

Environmental mitigation measures for the construction activities as recommended in the EM&A manual were implemented in the reporting month.

Environmental Complaints

No complaint was received in the reporting month.

Future Key Issues

The one-day dredging work for removal of the remaining high spot over the channel was carried out on 26th November 2004. The preliminary hydrographic survey results showed that the high spot had been removed successfully. When the final report is available, the hydrographic survey results shall be provided under a separate submission and the post-project monitoring for seawater quality for 4 weeks (with the same schedule as the impact monitoring during the project, i.e. thrice weekly) shall be arranged.

Concluding Remarks

The environmental performance of the project was generally satisfactory.

1. INTRODUCTION

1.1 Background

The Environmental Team (hereinafter called the "ET") was formed within the Hongkong Electric Co. Ltd (HEC) to undertake Environmental Monitoring and Audit for "Lamma Power Station Navigation Channel Improvement" (hereinafter called the "Project"). Under the requirements of Clause 4 of Environmental Permit EP-165/2003, an EM&A programme for impact environmental monitoring is required to be implemented. In accordance with the EM&A Manual, environmental monitoring of water quality and regular environmental audits are required for the Project.

The Project involves restoring the depth of existing channel by dredging to a water depth of –16 mPD approximately with an estimated total dredging volume of 2.98 million m^3.

The Project Area is illustrated in Figure 1.1. The shaded area shows the region of the Channel where dredging will be required under this Project. According to the latest bathymetric survey of the Channel, there is already sufficient water depth in the remaining section of the Channel in the south (beyond the shaded area in Figure 1.1) and no dredging will be required.

The dredging options for the Project are:
(1) continuous dredging using grab dredgers with cage-type silt curtains or
(2) intermittent dredging using one Trailer Suction Hopper Dredger (TSHD).

Only one of these two dredging options will be deployed. The contractor has chosen to adopt the continuous dredging method using grab dredgers with cage-type silt curtains.

This report summarizes the environmental monitoring and audit work for the Project for the month of November 2004.

1.2 Project Organisation

The management structure to oversee the Project includes the following:

- Environmental Protection Department (The Authority);
- Chief Engineer (Projects) (The official contact person between HEC and EPD);
- Engineer;
- Independent Environmental Checker (IEC);
- Environmental Team (ET);
- Contractor.

The project organisation chart for the construction EM&A programme is shown in Appendix A.

1.3 Construction Works undertaken during the Reporting Month

The dredging contractor had temporarily suspended the dredging work since 3rd November 2004. After the review of the survey results, the one-day dredging operation was carried out on 26th November 2004 for removal of the remaining high spot over the channel. Construction activities undertaken during the reporting month for this Project were dredging and dumping of dredged mud. The total volume of dredged materials in November 2004 was 3,500m^3. Uncontaminated materials were dumped at the designated location within the South Cheung Chau Spoil Disposal Area and the total dumped volume in November 2004 was 3,500 m^3. Figure 1.2 shows all dumping locations for this project. Daily records of dredged / dumped volume are presented in Appendix B. The maximum hourly and daily dredging rates actually achieved by the contractors were within the limits specified in the latest dredging schedule.

The main construction activities carried out during the reporting month and the corresponding environmental mitigation measures are summarized in Table 1.1. The implementation of major mitigation measures in the month is provided in Appendix I.

Table 1.1 Construction Activities and Their Corresponding Environmental Mitigation Measures

Construction Activities	**Environmental Mitigation Measures**
Dredging	**Water Quality** – One number of grab dredger with grab capacity of no less than 8m^3 was operated on site. – Both maximum total hourly and daily dredging rates specified in the latest dredging schedule were strictly followed. – Daily dredging volume was spread as evenly as possible over the 24-hour period. – Cage-type silt curtain was deployed for the grab dredger. – The grab was tightly closed and the hoist speed was suitably low. – All barges for transportation of dredged materials were fitted with tight bottom seals. **Noise** – General noise mitigation measures were employed at work site throughout the construction phase. – The number of dredgers and operation conditions as specified in the CNP were strictly followed.

Construction Activities	Environmental Mitigation Measures
	Dredging Waste – All vessels for marine transportation of dredged sediment were fitted with tight fitting seals at the bottom openings to prevent leakage. – All vessels were filled to a level such that dredged materials would not spill over during loading and transportation. – Dredged wastes were disposed of at licensed dumping site – South Cheung Chau Spoil Disposal Area. – Records of the quantities of waste generated and disposed of off-site were taken. **Marine Ecology** – All construction related vessels approached the site from the designated route to avoid the Finless Porpoise habitat area. – The dumping of chemicals, rubbish, oils etc. into the water was strictly prohibited.

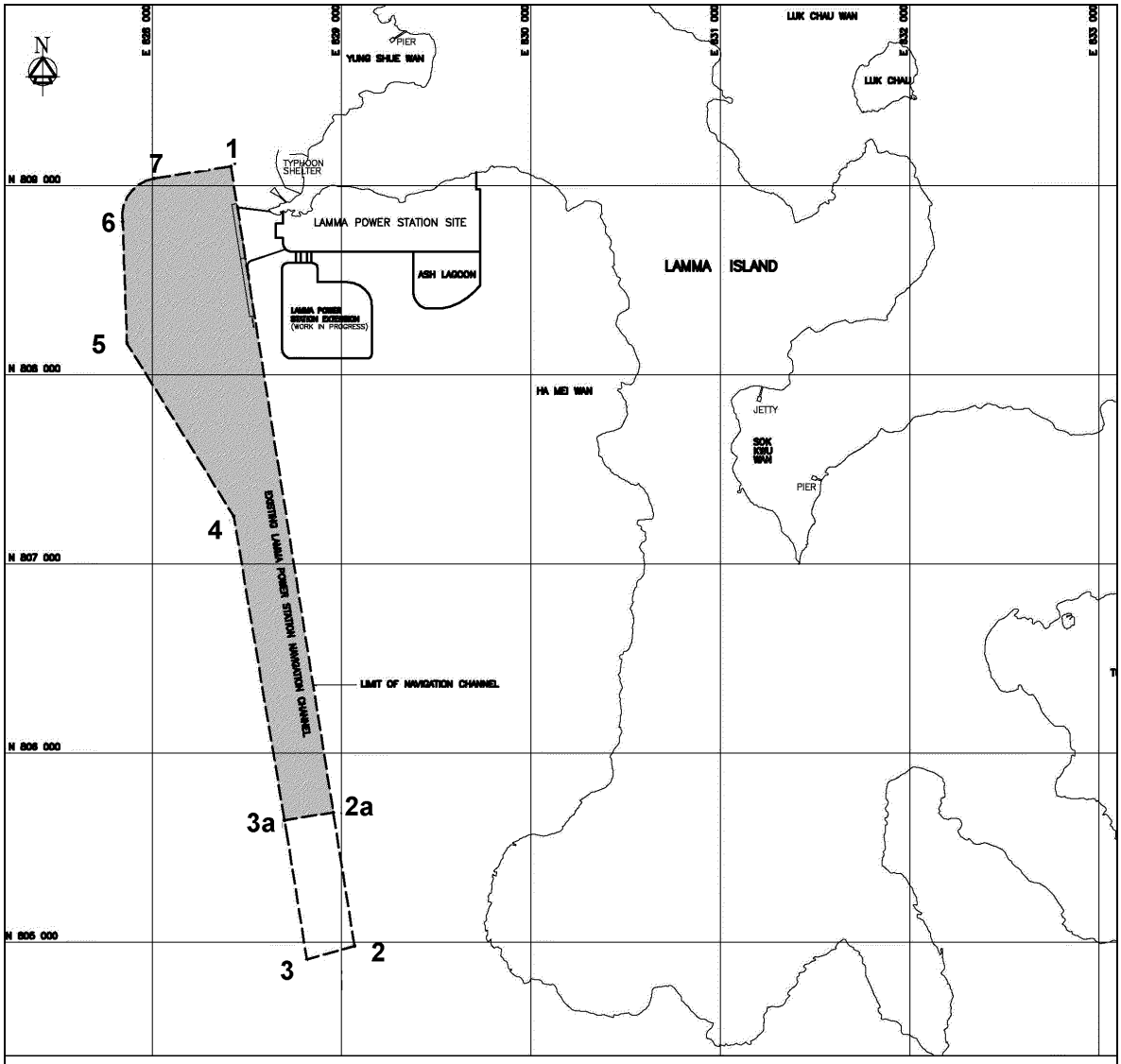
1.4 Summary of EM&A Requirements

The EM&A program requires environmental monitoring of water quality. Regular environmental site audits for water quality and waste management were carried out. The detailed EM&A monitoring work for water quality are described in Sections 2.

The following environmental audits are summarized in Section 3 of this report:

- Environmental monitoring results;
- Waste Management Records;
- Weekly site audit results;
- The status of environmental licensing and permits for the Project;
- The implementation status of environmental protection and pollution control/ mitigation measures.

Future key issues will be reported in Section 4 of this report.



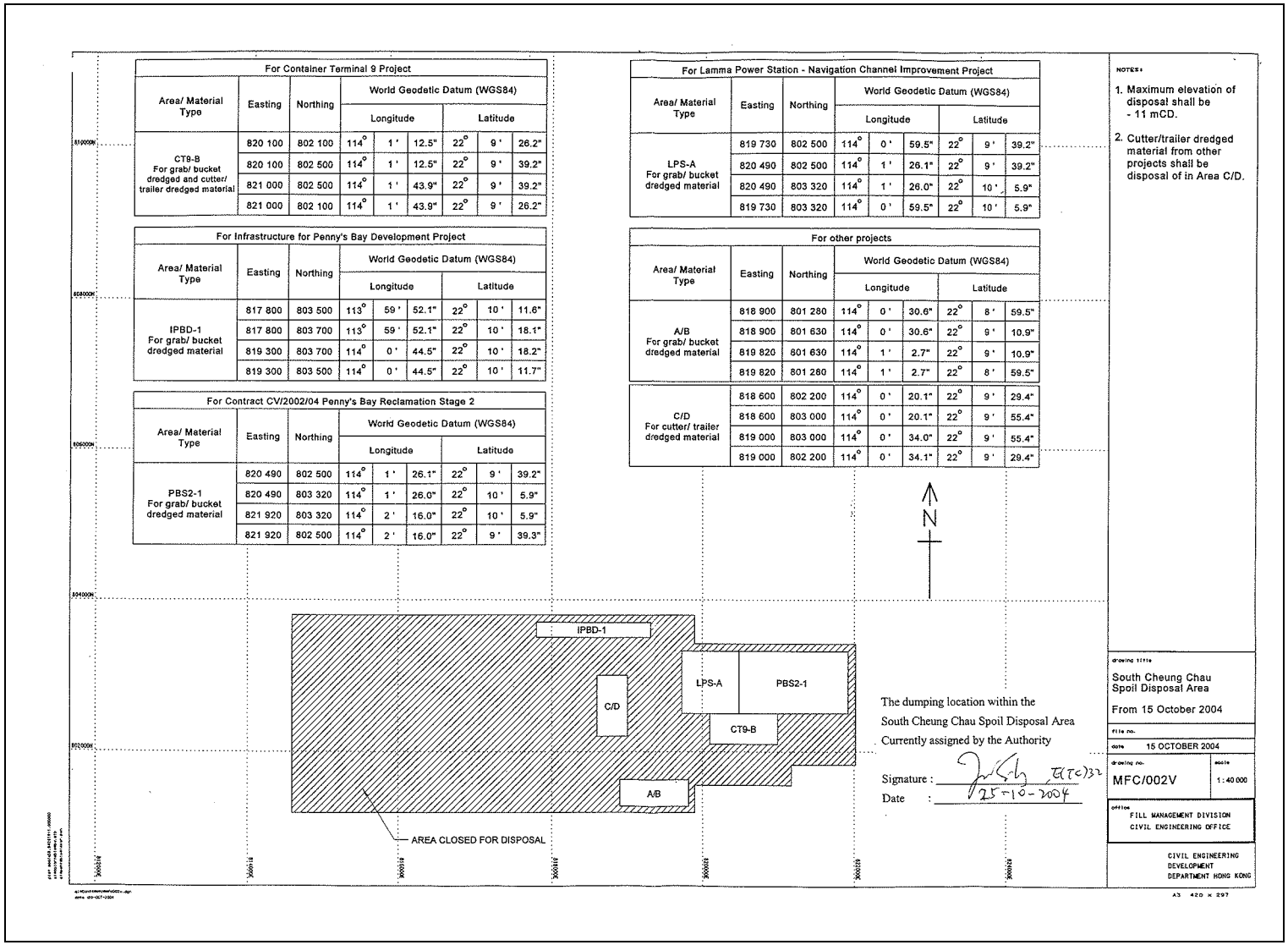
SETTING OUT OF NAVIGATION CHANNEL LIMIT

POINT	EASTING (m)	NORTHING (m)
1	828 414.393	809 101.605
2	829 067.326	804 979.151
3	828 815.532	804 906.872
4	828 430.000	807 250.000
5	827 864.900	808 168.200
6	827 843.188	808 808.639
7	828 009.441	809 037.467

SETTING OUT OF POINT "2a" & "3a"

POINT	EASTING (m)	NORTHING (m)
2a	828 956.222	805 680.633
3a	828 704.149	805 608.273

Figure 1.1 Layout of Work Site



For Container Terminal 9 Project

Area/ Material Type	Easting	Northing	World Geodetic Datum (WGS84) Longitude			Latitude		
CT9-B For grab/ bucket dredged and cutter/ trailer dredged material	820 100	802 100	114°	1 '	12.5"	22°	9 '	26.2"
	820 100	802 500	114°	1 '	12.5"	22°	9 '	39.2"
	821 000	802 500	114°	1 '	43.9"	22°	9 '	39.2"
	821 000	802 100	114°	1 '	43.9"	22°	9 '	26.2"

For Infrastructure for Penny's Bay Development Project

Area/ Material Type	Easting	Northing	World Geodetic Datum (WGS84) Longitude			Latitude		
IPBD-1 For grab/ bucket dredged material	817 800	803 500	113°	59 '	52.1"	22°	10 '	11.6"
	817 800	803 700	113°	59 '	52.1"	22°	10 '	18.1"
	819 300	803 700	114°	0 '	44.5"	22°	10 '	18.2"
	819 300	803 500	114°	0 '	44.5"	22°	10 '	11.7"

For Contract CV/2002/04 Penny's Bay Reclamation Stage 2

Area/ Material Type	Easting	Northing	World Geodetic Datum (WGS84) Longitude			Latitude		
PBS2-1 For grab/ bucket dredged material	820 490	802 500	114°	1 '	26.1"	22°	9 '	39.2"
	820 490	803 320	114°	1 '	26.0"	22°	10 '	5.9"
	821 920	803 320	114°	2 '	16.0"	22°	10 '	5.9"
	821 920	802 500	114°	2 '	16.0"	22°	9 '	39.3"

For Lamma Power Station - Navigation Channel Improvement Project

Area/ Material Type	Easting	Northing	World Geodetic Datum (WGS84) Longitude			Latitude		
LPS-A For grab/ bucket dredged material	819 730	802 500	114°	0 '	59.5"	22°	9 '	39.2"
	820 490	802 500	114°	1 '	26.1"	22°	9 '	39.2"
	820 490	803 320	114°	1 '	26.0"	22°	10 '	5.9"
	819 730	803 320	114°	0 '	59.5"	22°	10 '	5.9"

For other projects

Area/ Material Type	Easting	Northing	World Geodetic Datum (WGS84) Longitude			Latitude		
A/B For grab/ bucket dredged material	818 900	801 280	114°	0 '	30.6"	22°	8 '	59.5"
	818 900	801 630	114°	0 '	30.6"	22°	9 '	10.9"
	819 820	801 630	114°	1 '	2.7"	22°	9 '	10.9"
	819 820	801 280	114°	1 '	2.7"	22°	8 '	59.5"
C/D For cutter/ trailer dredged material	818 600	802 200	114°	0 '	20.1"	22°	9 '	29.4"
	818 600	803 000	114°	0 '	20.1"	22°	9 '	55.4"
	819 000	803 000	114°	0 '	34.0"	22°	9 '	55.4"
	819 000	802 200	114°	0 '	34.1"	22°	9 '	29.4"

Figure 1.2 Location of Dumping Area

2. WATER QUALITY MONITORING

2.1 Monitoring Requirements

Marine water quality monitoring at the monitoring locations adjacent to the project area was carried out. The purpose was to ensure that deterioration of water quality, if any, would immediately be detected and that timely action could be taken to rectify the situation. The impact monitoring data were checked against the AL levels set out in the Baseline Monitoring Report (Revision 1).

2.2 Monitoring Locations

A total of 10 water quality monitoring locations were selected. 7 Sensitive Receiver (SR) stations were chosen on the basis of their proximity to the construction site. 3 Marine Control stations (CS) as recommended in the EIA were selected to facilitate comparison of the water quality of the SR stations with ambient water quality conditions. Table 2.1 describes the locations of these monitoring stations. Their locations are shown in Figure 2.1.

Table 2.1 Water Quality Monitoring Locations

Type	Monitoring Location	HK Metric Grid E	HK Metric Grid N
Sensitive Receiver Stations	SR6	830 150	811 500
	SR7	829 004	810 903
	SR10	829 194	808 600
	SR11	830 119	808 650
	SR12	830 386	807 189
	SR14	829 977	805 758
	SR15	829 566	804 545
Marine Control Stations	CS1	828 000	813 492
	CS2	825 000	808 000
	CS3	829 000	802 000

2.3 Monitoring Equipment

Table 2.2 summarizes the equipment used in the water-quality monitoring programme.

Table 2.2 Water Quality Monitoring Equipment

Equipment	Detection Limit
YSI 6920 Water Quality Monitor	Temperature: -5 to 45 ^{0}C; +/- 0.15 ^{0}C Salinity: 0 to 70 ppt; +/- 0.1 ppt Dissolved Oxygen: 0 to 200%; +/- 0.2% 0 to 20 mg/L; +/- 0.2 mg/L Turbidity: 0 to 1000 NTU; +/- 5% of the range pH: 0 to 14 units; +/- 0.2 units
Trimble NT300D GPS	Accuracy better than 3m
Eagle Fisheasy ST Portable Depth Finder	Accuracy better than 0.5m

2.4 Monitoring Parameters, Frequency and Duration

Table 2.3 summarizes the monitoring parameters, frequencies and total duration of water quality monitoring. The monitoring schedule for reporting month is shown in Appendix D.

Table 2.3 Water Quality Monitoring Parameters and Frequency

Monitoring Stations	Parameters	Frequency	No. of Depths	No. of Samples
Sensitive Receiver Stations SR6, SR7, SR10, SR11, SR12, SR14 & SR15 Marine Control Stations CS1, CS2, CS3	• Depth, m • Temperature, ^{o}C • Salinity, ppt • DO, mg/L • DO Saturation, % • Turbidity, NTU • SS, mg/L • pH	Three times per week	3 Surface, Mid-Depth and Bottom	2 Mid-ebb and Mid-flood

2.5 Monitoring Procedures and Calibration Details

Monitoring Procedures

- The monitoring stations were accessed using survey boat to within 3m, guided by Differential Global Positioning System (DGPS).

- The water depth of the monitoring location at sampling time was measured using depth meter. Afterwards, the probes of the in-situ measurement equipment were lowered to the predetermined depths and the measurements taken accordingly.

- A water sampler was lowered into the water to the required sampling depths. Upon reaching the pre-determined depth, a messenger to activate the sampler was released which travel down the wire. The water sample was sealed within the sampler before retrieving.

- All measurements were taken at 3 water depths where appropriate, namely 1m below water surface, mid-depth, and 1 meter from seabed, except where the water depth was less than 6m, whereupon the mid-depth measurement would be omitted. If the water depth was less than 3m, only the mid-depth position was monitored.

- One duplicate in-situ measurement and water sample for laboratory analyses were taken at all sampling locations.

- At each measurement depth, two consecutive measurements were taken. The probe was retrieved out of the water after the first measurement and then redeployed for the second measurement. When the difference in value between the first and second measurement of on-site parameters was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.

- A water sampler, consisting of a transparent PVC or glass cylinder of not less than two litres which could be effectively sealed with cups at both ends, was used. The water sampler had a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler was at the selected water depth.

- Water samples for SS measurements were transferred directly to high density polythene sample bottles, packed in ice (cooled to $4^{o}C$ without being frozen), and delivered to a HOKLAS laboratory as soon as possible after collection.

- In addition, field information such as the general meteorological conditions and observations regarding any significant activities in the vicinity of each monitoring location were also recorded.

Equipment Calibration

The equipment deployed for in-situ measurement of marine water quality was calibrated before use. The methodologies for the calibration follow the instruction manuals provided by the corresponding manufacturers. The calibration records are shown in Appendix F.

Laboratory Analysis & QA/QC

The collected marine water samples were analyzed for Suspended Solids with methodologies shown in Table 2.4.

Table 2.4 Laboratory Analysis Methodologies of Marine Water Samples

Parameter	**Method**	**Limit of Reporting (mg/L)**
Suspended Solids	APHA 17 ed 2540 D	1.0

In order to ensure that the laboratory analysis works were carried out properly, stringent QA/QC procedures (which include sample preparation as well as subsequent instrumentation analysis) were followed. According to the requirements stipulated in the EM&A Manual, QA/QC requirements for laboratory testing include:

1) "Blind" duplicate samples analysis of 10% collected marine water samples; and
2) in-house QA/QC procedures of the testing laboratory (this includes the use of blank, batch duplicates and quality control samples).

Blind Duplicate:
In order to cross check the accuracy of the measurement results by the laboratory analysis, “blind” duplicate samples of 10% of the collected marine water samples were analyzed alongside the normal samples. The sample codes for the “blind” duplicates were determined by the sampling team and are not identifiable by the laboratory. The results of the “blind” duplicate samples are summarized in Appendix F.

Blank:
A laboratory blank is an analyte free matrix to which all reagents are added in the same volumes or proportions as used in the standard sample preparation to monitor contamination introduced in laboratory. All the laboratory blank values and acceptance criterion of suspended solids are summarized in Appendix F.

Batch Duplicate:
Batch duplicate is an intra-laboratory split sample randomly selected from the sample batch to monitor the method precision in a given matrix. The acceptance limit of duplicate values of suspended solids and their duplicate results are summarized in Appendix F.

Quality Control Sample:
The quality control sample is the analysis of a material with a known concentration of contaminants to determine the accuracy of results in a given matrix. The results of quality control samples for suspended solids are shown in Appendix F.

A total of 240 sets of samples for Suspended Solids analysis were received during the marine monitoring period including both ebb and flood tides. At least 5% laboratory blanks, batch duplicates and quality control samples for Suspended Solids were used. The acceptance criteria are outlined in Quality Control data.

The QA/QC results in Appendix F indicated that the laboratory analysis works of the collected marine water samples were properly carried out and the measurement results obtained were valid in accordance with the Hong Kong Laboratory Accreditation Scheme (HOKLAS) requirements. Moreover, the "blind" duplicate measurement results indicated that the precision of the measurements for Suspended Solids complied with HOKLAS requirements.

2.6 Results and Observations

Marine water monitoring was conducted as scheduled in the reporting month. As the dredging work for removal of high spot was carried out on 1st, 2nd and 26th November 2004, marine water monitoring was conducted during the above periods on 1st and 26th November 2004. All monitoring data and graphical presentation of the monitoring results are provided in Appendix E.

There was no Action / Limit Level exceedance for water quality in the reporting month.

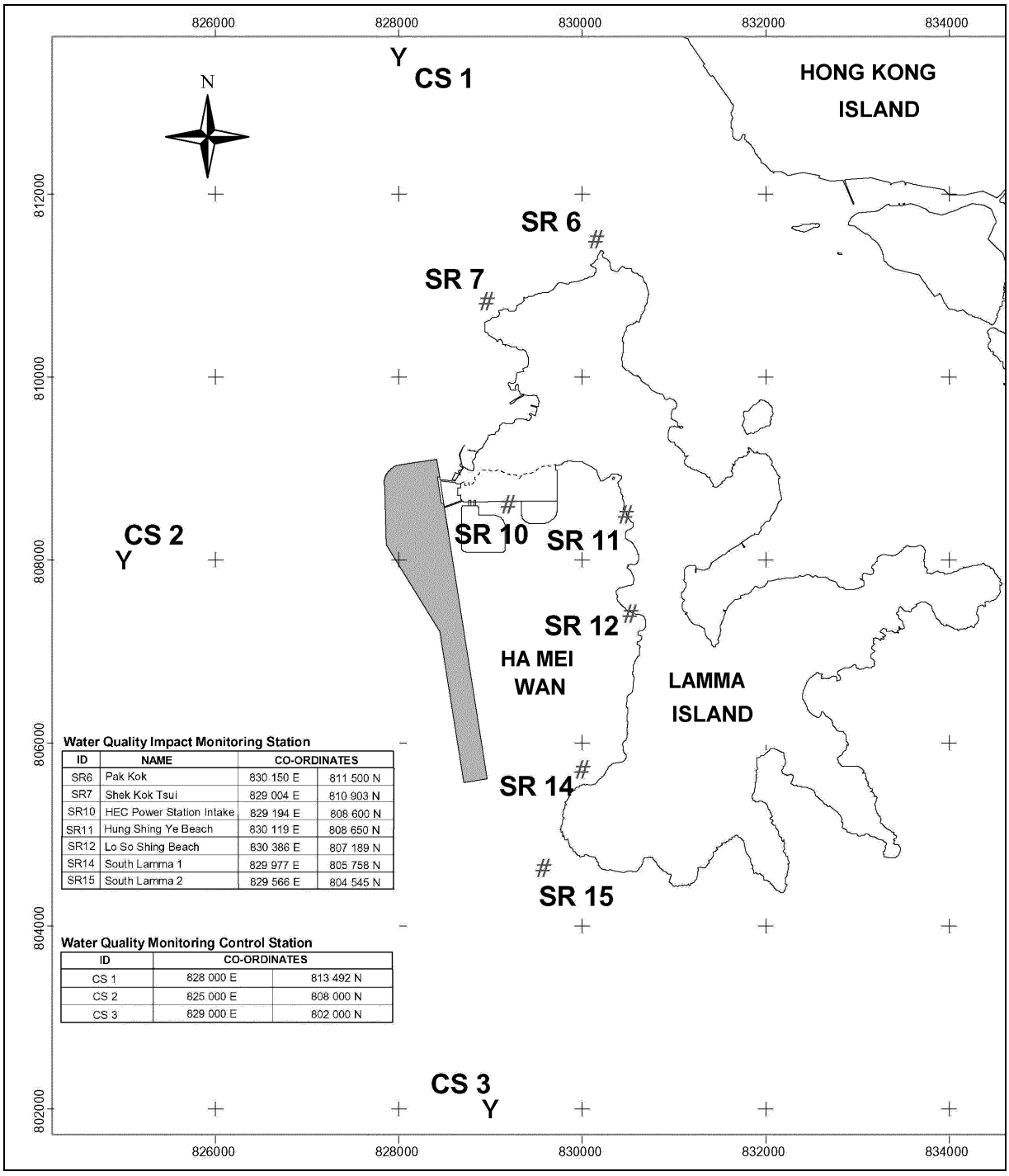


Figure 2.1 Location of Water Quality Monitoring Stations

3. ENVIRONMENTAL AUDIT

3.1 Review of Environmental Monitoring Procedures

The environmental monitoring procedures were regularly reviewed by the Environmental Team. No modification to the existing monitoring procedures was recommended.

3.2 Assessment of Environmental Monitoring Results

Monitoring results for Water Quality

The environmental monitoring results for Water Quality in the reporting month presented in Sections 2 are summarized in Table 3.1.

Table 3.1 Summary of AL Level Exceedances on Monitoring Parameters

Item	Parameter Monitored	Monitoring Period	No. of Exceedances In		Event/Action Plan Implementation Status and Results
			Action Level	Limit Level	
Water					
1	DO (Surface & Middle)	01/11/04 30/11/04	0	0	
2	DO (Bottom)	01/11/04 30/11/04	0	0	
3	SS	01/11/04 30/11/04	0	0	
4	Turbidity	01/11/04 30/11/04	0	0	

Waste Management Records

The estimated amounts of different types of waste generated in November 2004 are shown in Table 3.2.

Table 3.2 Estimated Amounts of Waste Generated in November 2004

Waste Type	Examples	Estimated Amount (m^3)
Dredged Materials	Marine Mud	3,500

The total bulk volume of dredged material was 3,500 m^3.

3.3 Site Environmental Audit

Site audits were carried out by ET on a weekly basis to monitor environmental issues at the project area to ensure that all mitigation measures were implemented timely and properly. As the dredging work for removal of high spot was carried out on 1st, 2nd and 26th November 2004, site audits were conducted during the above periods on 1st and 26th November 2004. The site conditions were generally satisfactory. All required mitigation measures were implemented. The weekly site inspection results are attached in Appendix H.

3.4 Status of Environmental Licensing and Permitting

All permits/licenses obtained for the project are summarised in Table 3.3.

Table 3.3 Summary of Environmental Licensing and Permit Status

Description	Permit No.	Valid Period		highlights	Status
		From	To		
Environmental Permit	EP-165/2003	08/04/03	-	The whole construction work site	Valid
Construction Noise Permit	GW-RS0379-04	31/08/04	30/11/04	Operation of PME's (2 grab dredgers and 2 tug boats) allowed during the restricted hours (07:00-07:00 of next day on holidays and 19:00-07:00 of next day on all other days). Not more than one grab dredger allowed to be operated within each zone (viz. Zone A, B and C) between 2300 and 0700 hrs. Only one tug boat allowed to be operated within Zone A and B combined between 2300 and 0700 hrs.	Valid
Marine Dumping Permit	EP/MD/05-074	16/10/04	30/11/04	Dumping at South Cheung Chau Spoil Disposal Area	Valid
Registration of Chemical Waste Producer	WPN5296-912-P2800-17	22/7/03	-	Major Chemical Waste Type: Waste solvent and waste lubricating oil	Valid

3.5 Implementation Status of Environmental Mitigation Measures

Mitigation measures detailed in the permits and the EM&A Manual (Construction Phase) are required to be implemented. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix I.

3.6 Implementation Status of Action/Limit Plans

The Action/Event Plans for water quality extracted from the EM&A Manual (Construction Phase) and the review report on marine water quality monitoring are presented in Appendix G.

3.7 Implementation Status of Environmental Complaint Handling Procedures

In November 2004, no complaint against the construction activities was received.

Table 3.4 Environmental Complaints / Enquiries Received in November 2004

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions /Actions Taken	Conclusion / Status
N/A	N/A	N/A

Table 3.5 Outstanding Environmental Complaints / Enquiries Carried Over

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions /Actions Taken	Conclusion / Status
Nil	N/A	N/A

4. FUTURE KEY ISSUES

4.1 Key Issues for the Coming Month

The one-day dredging work for removal of the remaining high spot over the channel was carried out on 26th November 2004. The preliminary hydrographic survey results showed that the high spot had been removed successfully. When the final report is available, the hydrographic survey results shall be provided under a separate submission and the post-project monitoring for seawater quality for 4 weeks (with the same schedule as the impact monitoring during the project, i.e. thrice weekly) shall be arranged.

5. CONCLUSION

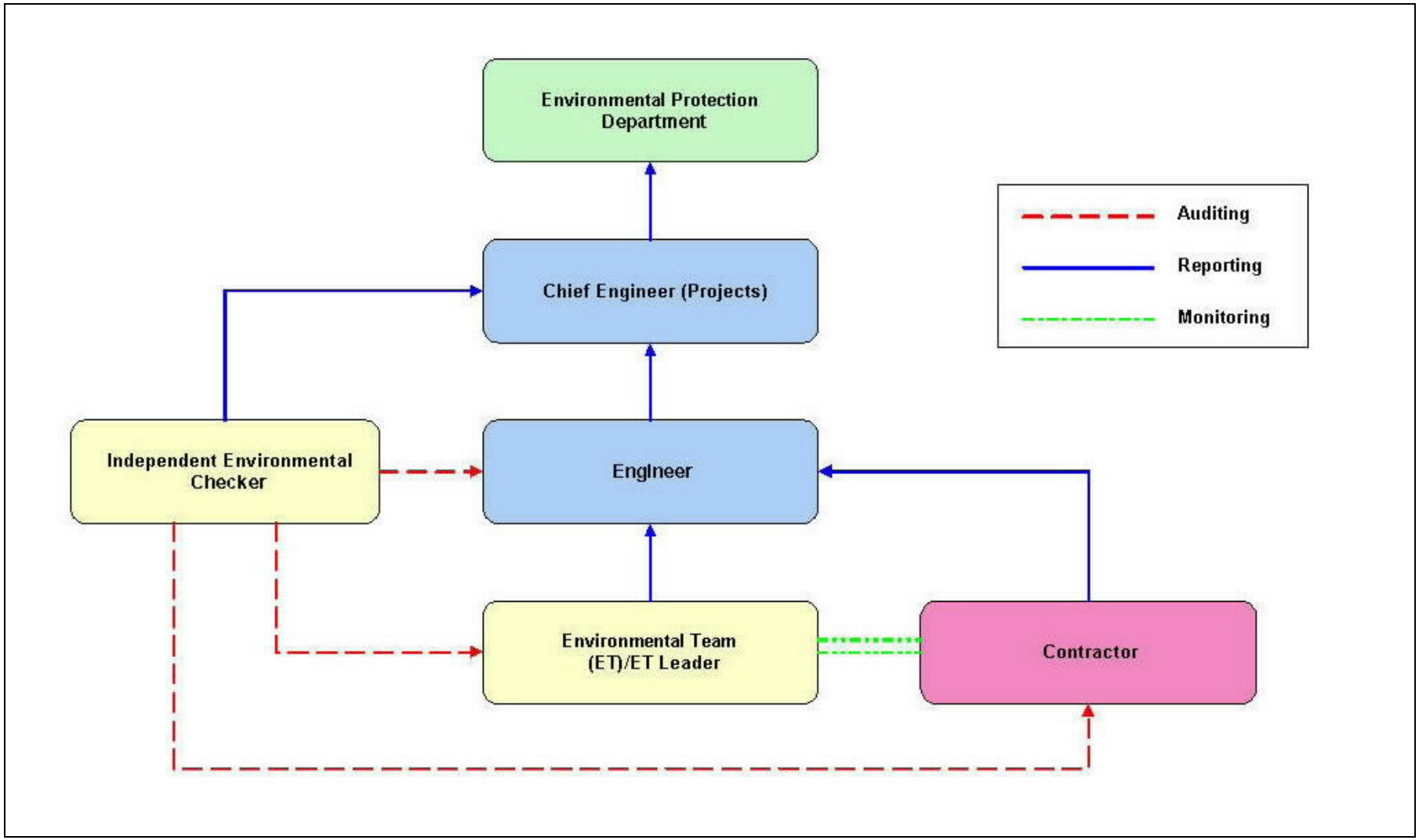
Marine water monitoring was conducted as scheduled in the reporting month. As the dredging work for removal of high spot was carried out on 1st, 2nd and 26th November 2004, marine water monitoring was conducted during the above periods on 1st and 26th November 2004. All monitoring results were checked and reviewed. No Action/Limit level exceedance on water quality parameters was recorded in the reporting month.

The maximum hourly and daily dredging rates actually achieved by the contractor were within the limits specified in the latest dredging schedule.

Environmental mitigation measures recommended in the EM&A manual for the Project were implemented in the reporting month. No compliant against the Project was received. No prosecution was received for this Project in the reporting period.

The environmental performance of the Project was generally satisfactory.

Appendix A Organization Chart



Appendix B

Table B1 Amount of Dredged and Dumped Marine Sediment

Date	Dredged Marine Mud (bulk volume m^3)	Dumped Marine Mud (bulk volume m^3)	Maximum Hourly Dredging Rate (bulk volume m^3/hr)
1/11/2004	2,100	2,100	88
2/11/2004	700	700	29
3/11/2004	0	0	0
4/11/2004	0	0	0
5/11/2004	0	0	0
6/11/2004	0	0	0
7/11/2004	0	0	0
8/11/2004	0	0	0
9/11/2004	0	0	0
10/11/2004	0	0	0
11/11/2004	0	0	0
12/11/2004	0	0	0
13/11/2004	0	0	0
14/11/2004	0	0	0
15/11/2004	0	0	0
16/11/2004	0	0	0
17/11/2004	0	0	0
18/11/2004	0	0	0
19/11/2004	0	0	0
20/11/2004	0	0	0
21/11/2004	0	0	0
22/11/2004	0	0	0
23/11/2004	0	0	0
24/11/2004	0	0	0
25/11/2004	0	0	0
26/11/2004	700	700	29
27/11/2004	0	0	0
28/11/2004	0	0	0
29/11/2004	0	0	0
30/11/2004	0	0	0

Summary of dredging rates for the reporting month

1. According to the latest dredging schedule (Table B2), the allowable daily and hourly dredging rates for November 2004 are 33,200m^3/day and 1,522m^3/hour respectively. The unit is in "in-situ" volume.

2. For the reporting month, the largest quantity of dredged mud was 2,100m^3 (bulk volume). The volume of dredged mud equals to (2,100m^3/1.3) 1,615m^3/day in in-situ volume, where 1.3 is a bulking factor. Similarly, the largest maximum hourly dredging rate for the reporting month was (88m^3/1.3) 68m^3/hour in in-situ volume.

3. Hence, it can be concluded that the maximum hourly and daily dredging rates actually achieved by the contractors were within the limit specified in the latest dredging schedule.

Table B3 Dredging Schedule for Grab Dredger Option (Revision 6) – Effective from September 2004

Working Zone*	Construction Programme	
	September 2004	October – November 2004
ABn	3 Nos.**	3 Nos.**
ABs		
BCn		
BCs		
Maximum total daily dredging rate (m^3/day)	21,200	33,200
Maximum total hourly dredging rate (m^3/hour)	972	1,522

Remarks:
*: This table should be read in conjunction with Figure 4 of Environmental Permit No. EP-165/2003
** : A maximum of 3 numbers of grab dredgers, each with a grab capacity of no less than 8 m^3 is allowed.

Note:
The above maximum daily dredging rates are derived based on 24-hour dredging operations. If the daily workings hours are restricted, the maximum daily dredging rates will have to be reduced proportionally based on the allowable working hours.

Appendix C Action and Limit Levels for Water Quality Monitoring

Table C1 Action / Limit Levels for Dissolved Oxygen (mg/L)

(a) Surface and Middle – Dry Season (November – March)

	SR6	SR7	SR11	SR12	SR14	SR15
Action Level (5%-ile)	5.2*	5.2*				
1%-ile	4.3**	4.6**				
Limit Level	4.0***					

Note:

1. * - figure 5.2 mg/L represents 5%-ile of baseline monitoring data and Marine Water Quality (MWQ) in Hong Kong from 1997 to 2001
2. ** - figures 4.3 and 4.6 mg/L represent 1%-ile of baseline monitoring data and MWQ in Hong Kong from 1997 to 2001
3. *** - WQO for DO in non-FCZ
4. All the figures may be subjected to review by EPD as and when necessary.

(b) Surface and Middle – Wet Season (April – October)

	SR6	SR7	SR11	SR12	SR14	SR15
Action Level (5%-ile)	4.2*	4.6*				
1%-ile	3.9**	4.3**				
Limit Level	4.0***					

Note:

1. * - figures 4.2 and 4.6 mg/L represent 5%-ile MWQ in Hong Kong from 1997 to 2001
2. ** - figures 3.9 and 4.3 mg/L represent 1%-ile of MWQ in Hong Kong from 1997 to 2001
3. *** - the WQO for DO in non-FCZ
4. All the figures may be subjected to review by EPD as and when necessary.

(c) Bottom – Dry Season (November – March)

	SR6	SR7	SR11	SR12	SR14	SR15
Action Level (5%-ile)	5.5*	5.4*				
1%-ile	4.1**	4.8**				
Limit Level	2.0***					

Note:

1. * - figures 5.5 and 5.4 mg/L represent 5%-ile of baseline monitoring data and MWQ in Hong Kong from 1997 to 2001
2. ** - figures 4.1 and 4.8 mg/L represent 1%-ile of baseline monitoring data and MWQ in Hong Kong from 1997 to 2001
3. *** - WQO for DO in non-FCZ
4. All the figures may be subjected to review by EPD as and when necessary.

(d) Bottom – Wet Season (April – October)

	SR6	SR7	SR11	SR12	SR14	SR15
Action Level (5%-ile)	2.7*	3.5*				
1%-ile	2.3**	2.0**				
Limit Level	2.0***					

Note:

a. * - figures 2.7 and 3.5 mg/L represent 5%-ile of MWQ in Hong Kong from 1997 to 2001

b. ** - figures 2.3 and 2.0 mg/L represent 1%-ile of MWQ in Hong Kong from 1997 to 2001

c. *** - WQO for DO in non-FCZ

d. All the figures may be subjected to review by EPD as and when necessary.

Table C2 Action / Limit Levels for Turbidity (NTU)

(depth-average)

	SR6	SR7	SR11	SR12	SR14	SR15
Action Level (95%-ile)	16.4	15.3	13.5	14.2	16.1	16.1
Limit Level (99%-ile)	17.4	16.1	16.2	16.2	16.5	16.8

Note:

1. 95% ile of baseline data is adopted for setting the Action Level for various SRs according to the EM&A Manual.
2. 99% ile of baseline data is adopted for setting the Limit Level for various SRs according to the EM&A Manual.
3. All the figures may be subjected to review by EPD as and when necessary.

Table C3 Action / Limit Levels for Suspended Solids (mg/L)

(depth-average)

	SR6	SR7	SR10	SR11	SR12	SR14	SR15
95%-ile	16.8	16.4	16.0	16.1	16.8	17.9	16.7
Action Level	16.8	16.4	--	16.1	16.8	17.9	16.7
99%-ile	16.9	16.8	16.2	16.4	17.0	18.8	17.8
Limit Level	16.9	16.8	100	16.4	17.0	18.8	17.8

Note:

1. No Action Level is applied to SR10 according to the EM&A Manual
2. Limit Level of SR10 is 100 mg/L according to the EM&A Manual
3. 95% ile of baseline data is adopted for setting the Action Level for various SRs according to the EM&A Manual.
4. 99% ile of baseline data is adopted for setting the Limit Level for various SRs according to the EM&A Manual.

5. All the figures may be subjected to review by EPD as and when necessary.

Appendix D

Environmental Monitoring Schedule

The Hongkong Electric Co., Ltd.
Navigation Channel Improvement - EM&A Marine Water Monitoring Schedule

Nov-2004

No.	Date		Tide	High tide	Low tide	Tentative Start Time
1	1/11/2004	Mon	Mid-flood	12:31	05:55	08:30
			Mid-ebb	12:31	15:46	13:00
2	5/11/2004	Fri	Mid-ebb	4/11/2004 23:47	5/11/2004 09:53	08:30
			Mid-flood	6/11/2004 01:11	5/11/2004 09:53	16:00
3	7/11/2004	Sun	Mid-ebb	03:30	11:47	08:30
			Mid-flood	19:30	11:47	14:30
4	9/11/2004	Tue	Mid-ebb	06:18	13:02	08:30
			Mid-flood	19:28	13:02	15:15
5	11/11/2004	Thu	Mid-ebb	08:31	14:02	10:15
			Mid-flood	20:02	14:02	16:00
6	13/11/2004	Sat	Mid-ebb	10:25	15:01	11:45
			Mid-flood	20:47	15:01	16:00
7	15/11/2004	Mon	Mid-flood	12:33	05:14	08:30
			Mid-ebb	12:33	15:57	13:15
8	17/11/2004	Wed	Mid-flood	15:02	07:16	10:00
			Mid-ebb	15:02	16:24	15:00
9	20/11/2004	Sat	Mid-ebb	02:25	10:31	08:30
			Mid-flood	18:32	10:31	13:30
10	22/11/2004	Mon	Mid-ebb	05:34	12:06	08:30
			Mid-flood	19:14	12:06	14:45
11	24/11/2004	Wed	Mid-ebb	07:52	13:14	09:30
			Mid-flood	19:53	13:14	15:30
12	26/11/2004	Fri	Mid-ebb	09:37	13:57	10:45
			Mid-flood	20:24	13:57	16:00
13	29/11/2004	Mon	Mid-flood	11:46	05:04	08:30
			Mid-ebb	11:46	14:41	12:15

Notes: 1. The time of high tide and low tide is made reference to tidal information at Chi Ma Wan provided by the HKO.

2. Monitoring works will not be arranged during night time period for safety reasons.

3. Monitoring works should be carried out three days per week at mid-flood and mid-ebb.

4. The interval between two sets of monitoring should not be less than 36 hours.

Appendix E

Water Quality Monitoring Results

Date: 1/11/2004
Weather: Overcast
Sea Condition: Calm
Tide: Mid-Flood

Water Quality Monitoring Result

Location	Time	Depth (m)		Temp. (°C)	Salinity (ppt)	pH	D.O. Sat. (%)	D.O. (mg/L)		Turbidity (NTU)		S.S. (mg/L)	
								Value	DA	Value	DA	Average	DA
SR6	10:38	Surface	1	25.6 25.6	39.5 39.5	8.16 8.16	93.7 93.9	6.32 6.33	6.31	13.8 13.6	13.1	11.1	11.3
		Middle	11	25.4 25.4	39.6 39.6	8.17 8.17	93.5 93.2	6.30 6.29		13.8 13.1		11.9	
		Bottom	20.5	25.0 25.0	39.6 39.6	8.17 8.17	92.9 93.2	6.27 6.29	6.28	12.4 12.0		10.9	
	Other Observations:			Nil									
SR7	10:26	Surface	1	25.7 25.7	39.7 39.7	8.19 8.19	87.0 86.4	5.90 5.84	5.78	13.2 12.2	12.8	12.1	11.2
		Middle	4.5	25.7 25.7	39.7 39.7	8.20 8.20	84.1 83.5	5.70 5.67		13.6 13.5		12.2	
		Bottom	8	25.6 25.6	39.6 39.6	8.19 8.19	84.2 84.4	5.70 5.71	5.71	11.7 12.8		9.5	
	Other Observations:			Nil									
SR10	10:15	Surface	1	26.0 26.0	39.8 39.8	8.29 8.29	86.7 87.7	5.87 5.94	5.85	12.4 12.2	11.8	9.5	9.4
		Middle	4	25.9 25.9	39.9 39.9	8.30 8.30	85.3 85.8	5.78 5.79		11.8 11.0		9.4	
		Bottom	7	25.5 25.5	39.8 39.8	8.30 8.30	85.7 85.8	5.79 5.79	5.79	11.7 11.6		9.4	
	Other Observations:			Nil									
SR11	10:05	Surface	1	25.5 25.5	39.8 39.8	8.38 8.38	102.3 102.8	6.97 6.98	6.90	12.2 12.4	11.9	10.9	10.5
		Middle	4	25.4 25.4	39.9 39.9	8.39 8.39	100.1 100.7	6.82 6.84		11.8 11.6		12.0	
		Bottom	7	25.4 25.4	39.9 39.8	8.39 8.39	100.4 100.8	6.83 6.84	6.84	11.7 11.6		8.8	
	Other Observations:			Nil									
SR12	09:55	Surface	1	25.5 25.5	39.8 39.8	8.38 8.38	100.4 100.8	6.77 6.79	6.76	12.1 12.3	12.2	11.5	9.6
		Middle	4	25.4 25.4	39.8 39.8	8.38 8.38	99.5 99.9	6.73 6.74		12.2 12.8		10.2	
		Bottom	7	25.3 25.3	39.9 39.9	8.36 8.36	98.4 98.9	6.66 6.68	6.67	11.9 11.6		7.2	
	Other Observations:			Nil									
SR14	09:45	Surface	1	25.5 25.5	39.8 39.8	8.34 8.34	100.6 100.1	6.78 6.75	6.73	13.3 13.3	13.3	10.8	11.4
		Middle	4.5	25.3 25.3	39.8 39.8	8.35 8.35	99.1 99.6	6.69 6.71		13.2 13.2		11.4	
		Bottom	8	25.2 25.2	39.9 39.9	8.36 8.36	97.8 98.3	6.61 6.64	6.63	13.3 13.3		12.0	
	Other Observations:			Nil									
SR15	09:35	Surface	1	25.6 25.6	39.8 39.8	8.36 8.36	98.6 96.8	6.69 6.56	6.52	12.3 12.7	12.0	11.0	9.3
		Middle	10.5	25.3 25.3	39.9 39.9	8.36 8.36	94.8 94.3	6.43 6.41		11.6 11.0		8.6	
		Bottom	19.5	25.0 25.0	39.9 39.9	8.32 8.32	92.9 92.5	6.30 6.27	6.29	12.4 12.2		8.4	
	Other Observations:			Nil									
CS1	08:45	Surface	1	25.4 25.4	39.5 39.5	8.21 8.21	102.9 102.3	6.98 6.96	6.92	13.5 13.4	14.5	10.8	11.6
		Middle	4.5	25.4 25.4	39.6 39.6	8.22 8.22	101.4 101.0	6.87 6.85		13.6 13.8		9.8	
		Bottom	7.5	25.3 25.3	39.6 39.6	8.22 8.22	100.9 101.6	6.89 6.91	6.90	16.8 15.9		14.3	
	Other Observations:			Nil									
CS2	09:00	Surface	1	25.6 25.6	39.8 39.8	8.32 8.32	98.6 98.0	6.69 6.67	6.64	13.0 13.5	13.9	11.9	12.1
		Middle	5.5	25.4 25.4	39.8 39.8	8.32 8.32	96.8 96.9	6.59 6.59		14.0 14.4		11.7	
		Bottom	9.5	25.3 25.3	39.8 39.8	8.30 8.30	96.1 96.3	6.54 6.55	6.55	14.5 14.0		12.6	
	Other Observations:			Nil									
CS3	09:20	Surface	1	25.7 25.7	39.8 39.8	8.36 8.36	94.4 94.0	6.40 6.37	6.36	12.2 11.6	12.2	11.1	10.2
		Middle	10.5	25.2 25.2	39.8 39.8	8.36 8.36	93.7 93.1	6.35 6.32		12.2 12.4		8.6	
		Bottom	20	25.1 25.1	39.9 39.9	8.34 8.34	92.8 92.0	6.29 6.25	6.27	12.5 12.0		10.8	
	Other Observations:			Nil									

* Contains sample results < detection limit but assumed to be at the detection limit for the sake of computation.

Date: 1/11/2004
Weather: Overcast
Sea Condition: Calm
Tide: Mid-Ebb

Water Quality Monitoring Result

Location	Time	Depth (m)		Temp. (°C)	Salinity (ppt)	pH	D.O. Sat. (%)	D.O. (mg/L)		Turbidity (NTU)		S.S. (mg/L)	
								Value	DA	Value	DA	Average	DA
SR6	15:05	Surface	1	26.0 26.0	39.8 39.8	8.23 8.23	100.0 99.7	6.77 6.75	6.73	11.4 12.6	12.4	11.6	11.1
		Middle	11	25.5 25.5	39.9 39.9	8.25 8.25	98.6 98.9	6.69 6.71		11.0 12.3		11.0	
		Bottom	20.5	25.4 25.4	39.9 39.9	8.24 8.24	98.0 98.2	6.66 6.67	6.67	13.8 13.3		10.8	
	Other Observations:			Nil									
SR7	14:50	Surface	1	25.6 25.6	39.8 39.9	8.23 8.23	88.1 89.1	5.98 6.03	6.02	11.5 11.4	11.6	9.0	10.6
		Middle	5	25.5 25.5	39.9 39.9	8.25 8.25	88.8 89.1	6.03 6.05		11.5 11.0		12.2	
		Bottom	8.5	25.4 25.4	39.9 39.9	8.24 8.24	89.5 89.7	6.07 6.08	6.08	11.7 12.3		10.5	
	Other Observations:			Nil									
SR10	14:35	Surface	1	25.8 25.8	39.8 39.8	8.29 8.29	88.3 88.8	5.99 6.03	5.96	10.7 10.6	11.0	10.0	10.2
		Middle	4.5	25.5 25.5	39.9 39.9	8.29 8.29	87.5 87.0	5.94 5.89		10.9 10.4		10.0	
		Bottom	7.5	25.4 25.4	39.8 39.8	8.29 8.29	87.5 87.3	5.94 5.93	5.94	11.9 11.3		10.7	
	Other Observations:			Nil									
SR11	14:20	Surface	1	25.9 25.9	39.8 39.8	8.34 8.34	93.1 92.7	6.31 6.29	6.24	11.0 11.6	11.3	9.5	9.7
		Middle	4	25.5 25.5	39.8 39.8	8.32 8.32	91.1 90.9	6.18 6.17		11.6 11.4		10.2	
		Bottom	7	25.4 25.4	39.8 39.8	8.30 8.30	90.5 94.7	6.14 6.44	6.29	11.0 11.3		9.4	
	Other Observations:			Nil									
SR12	14:10	Surface	1	25.6 25.6	39.9 39.9	8.30 8.30	96.3 96.0	6.55 6.53	6.52	11.3 11.1	10.9	6.8	8.3
		Middle	4.5	25.6 25.6	39.8 39.8	8.29 8.28	95.2 95.8	6.49 6.52		10.8 10.3		8.1	
		Bottom	7.5	25.6 25.6	39.8 39.8	8.28 8.28	94.8 98.9	6.45 6.69	6.57	10.9 10.7		10.1	
	Other Observations:			Nil									
SR14	14:00	Surface	1	25.6 25.6	39.9 39.9	8.30 8.30	101.5 100.8	6.86 6.82	6.80	10.7 10.6	10.8	9.4	9.7
		Middle	5	25.5 25.5	39.9 39.9	8.29 8.29	99.8 100.2	6.75 6.77		10.6 10.3		9.5	
		Bottom	8.5	25.4 25.4	39.8 39.8	8.28 8.28	98.9 99.4	6.68 6.73	6.71	11.0 11.3		10.2	
	Other Observations:			Nil									
SR15	13:50	Surface	1	25.8 25.8	39.6 39.6	8.29 8.29	100.4 100.8	6.79 6.81	6.76	10.2 10.0	10.6	8.5	8.6
		Middle	11	25.5 25.5	39.8 39.8	8.28 8.28	99.6 99.3	6.73 6.72		10.5 11.0		9.9	
		Bottom	20.5	25.2 25.2	39.8 39.8	8.27 8.27	99.1 99.5	6.69 6.72	6.71	10.6 11.1		7.6	
	Other Observations:			Nil									
CS1	13:00	Surface	1	25.8 25.8	39.7 39.7	8.24 8.24	102.4 102.1	6.93 6.93	6.88	11.3 11.2	11.5	9.7	11.0
		Middle	4.5	25.7 25.7	39.7 39.7	8.26 8.26	100.8 100.7	6.83 6.82		11.5 11.1		11.1	
		Bottom	8	25.5 25.5	39.6 39.6	8.24 8.24	98.9 99.3	6.72 6.74	6.73	12.0 11.6		12.3	
	Other Observations:			Nil									
CS2	13:15	Surface	1	25.8 25.8	39.8 39.8	8.34 8.34	100.6 100.9	6.81 6.82	6.78	10.6 10.3	11.0	10.6	9.0
		Middle	5.5	25.4 25.4	39.9 39.9	8.28 8.28	99.5 99.7	6.73 6.74		10.9 11.3		7.4	
		Bottom	9.5	25.3 25.3	39.8 39.8	8.26 8.26	98.5 98.9	6.67 6.69	6.68	11.4 11.6		9.0	
	Other Observations:			Nil									
CS3	13:45	Surface	1	25.6 25.6	39.8 39.8	8.29 8.29	101.7 101.0	6.88 6.83	6.83	10.5 10.0	10.7	9.0	8.2
		Middle	11	25.2 25.2	39.8 39.9	8.28 8.28	100.2 100.7	6.79 6.82		10.6 11.0		8.0	
		Bottom	20.5	25.1 25.1	39.8 39.9	8.27 8.27	99.8 99.3	6.75 6.72	6.74	10.8 11.2		7.6	
	Other Observations:			Nil									

* Contains sample results < detection limit but assumed to be at the detection limit for the sake of computation.

Date: 26/11/2004
Weather: Sunny
Sea Condition: Rough
Tide: Mid-Flood

Water Quality Monitoring Result

Location	Time	Depth (m)		Temp. (°C)	Salinity (ppt)	pH	D.O. Sat. (%)	D.O. (mg/L)		Turbidity (NTU)		S.S. (mg/L)	
								Value	DA	Value	DA	Average	DA
SR6	18:05	Surface	1	23.3 23.3	39.9 39.9	8.38 8.38	82.0 80.7	6.13 6.04	6.03	11.5 12.5	13.4	12.4	11.9
		Middle	11.5	23.2 23.2	40.0 40.0	8.37 8.37	79.9 79.3	5.98 5.96		14.8 14.6		11.3	
		Bottom	21.5	22.8 22.7	40.1 40.1	8.35 8.35	79.5 79.4	5.97 5.96	5.97	13.0 13.9		12.1	
	Other Observations:			Nil									
SR7	17:50	Surface	1	23.4 23.4	39.9 39.9	8.34 8.34	74.7 81.3	5.86 6.07	6.06	11.6 11.0	12.4	10.8	11.4
		Middle	4.5	23.4 23.4	40.0 40.1	8.35 8.35	82.1 82.3	6.15 6.16		13.5 13.1		11.5	
		Bottom	8	23.3 23.3	40.0 40.0	8.35 8.35	82.0 95.3	6.14 6.51	6.33	12.5 12.8		12.0	
	Other Observations:			Nil									
SR10	17:35	Surface	1	23.1 23.1	40.1 40.1	8.43 8.43	78.8 80.9	5.91 6.05	5.99	13.6 13.1	13.4	12.2	11.9
		Middle	4.5	23.0 23.1	40.2 40.1	8.42 8.42	79.9 80.3	5.99 6.00		12.6 12.3		12.5	
		Bottom	7.5	22.9 22.9	40.2 40.0	8.42 8.42	79.9 80.1	5.99 6.00	6.00	14.1 14.8		10.9	
	Other Observations:			Nil									
SR11	17:20	Surface	1	23.3 23.3	40.2 40.2	8.44 8.44	80.7 81.9	6.05 6.14	6.18	12.6 12.1	12.6	12.8	10.9
		Middle	4	23.2 23.2	40.2 40.2	8.44 8.44	82.9 83.9	6.22 6.30		13.0 13.5		10.3	
		Bottom	7	23.2 23.2	40.2 40.2	8.43 8.43	82.1 82.7	6.16 6.19	6.18	12.4 12.0		9.5	
	Other Observations:			Nil									
SR12	17:10	Surface	1	23.3 23.3	40.1 40.1	8.42 8.42	82.4 81.1	6.15 6.06	6.14	11.6 11.1	12.1	10.1	10.2
		Middle	4.5	23.2 23.2	40.1 40.2	8.41 8.41	82.0 82.3	6.16 6.17		12.8 12.4		10.3	
		Bottom	7.5	23.2 23.2	40.1 40.1	8.41 8.41	81.6 81.1	6.13 6.09	6.11	12.7 12.1		10.2	
	Other Observations:			Nil									
SR14	16:55	Surface	1	23.3 23.3	40.1 40.1	8.42 8.42	80.3 83.7	6.04 6.25	6.06	14.5 14.0	13.0	10.2	10.2
		Middle	4.5	23.2 23.2	40.2 40.2	8.41 8.41	79.5 79.2	5.99 5.97		12.6 12.0		9.9	
		Bottom	8	23.1 23.1	40.1 40.1	8.42 8.42	79.1 79.4	5.95 5.97	5.96	12.6 12.4		10.6	
	Other Observations:			Nil									
SR15	16:45	Surface	1	23.3 23.3	40.1 40.1	8.42 8.42	79.4 80.3	5.97 6.03	5.98	14.5 14.2	13.5	9.6	10.0
		Middle	11	23.2 23.2	40.2 40.2	8.41 8.41	79.1 79.4	5.95 5.96		12.9 12.6		10.5	
		Bottom	20.5	23.1 23.1	40.1 40.1	8.41 8.41	78.4 78.8	5.90 5.92	5.91	13.9 13.1		9.8	
	Other Observations:			Nil									
CS1	16:00	Surface	1	23.3 23.3	39.9 39.9	8.38 8.38	71.3 70.8	5.35 5.31	5.74	14.9 14.8	13.8	11.2	10.3
		Middle	4.5	23.2 23.2	40.0 40.0	8.38 8.38	80.8 84.1	6.04 6.24		13.0 13.1		10.0	
		Bottom	8	23.2 23.2	40.0 40.0	8.37 8.37	72.7 72.3	5.44 5.40	5.42	13.7 13.0		9.7	
	Other Observations:			Nil									
CS2	16:15	Surface	1	23.2 23.2	39.9 39.9	8.36 8.36	81.2 81.3	6.10 6.11	6.14	14.8 14.7	13.5	11.1	10.5
		Middle	5.5	23.2 23.2	39.9 39.9	8.36 8.36	82.2 82.4	6.17 6.18		14.8 14.1		9.8	
		Bottom	9.5	23.1 23.1	39.9 39.9	8.37 8.37	81.6 81.9	6.13 6.15	6.14	11.0 11.7		10.6	
	Other Observations:			Nil									
CS3	16:35	Surface	1	22.9 22.9	40.1 40.1	8.41 8.41	81.4 82.9	6.12 6.23	6.12	13.7 13.0	13.0	10.2	10.5
		Middle	11	22.9 22.9	40.2 40.2	8.42 8.42	80.3 80.8	6.04 6.07		12.7 12.0		10.1	
		Bottom	21	22.4 22.3	40.1 40.1	8.42 8.42	79.9 80.1	6.01 6.02	6.02	13.3 13.1		11.2	
	Other Observations:			Nil									

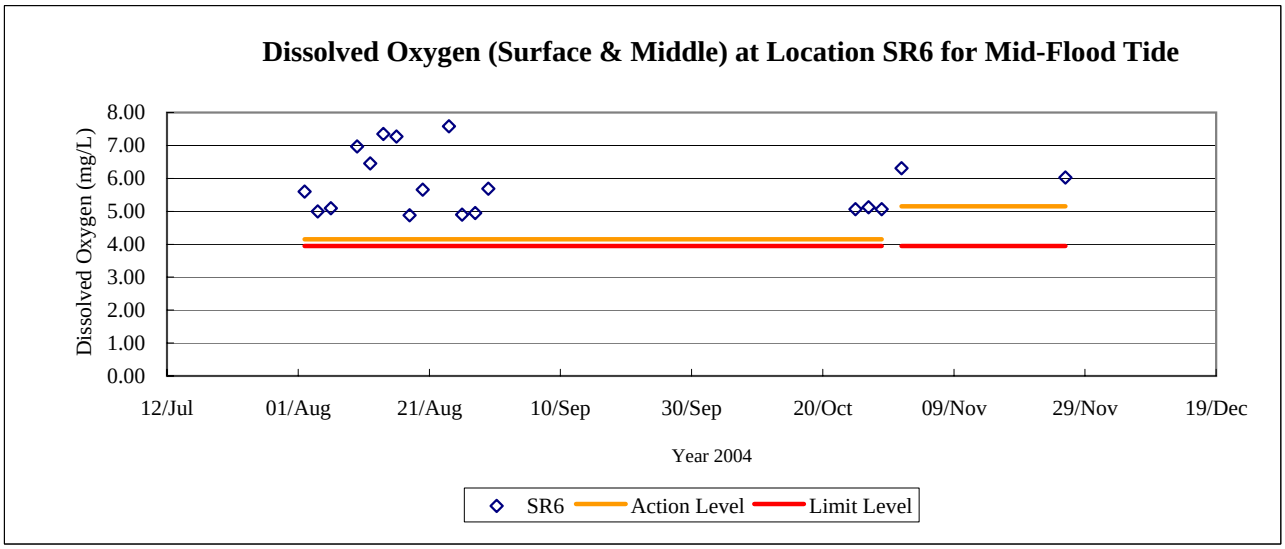
* Contains sample results < detection limit but assumed to be at the detection limit for the sake of computation.

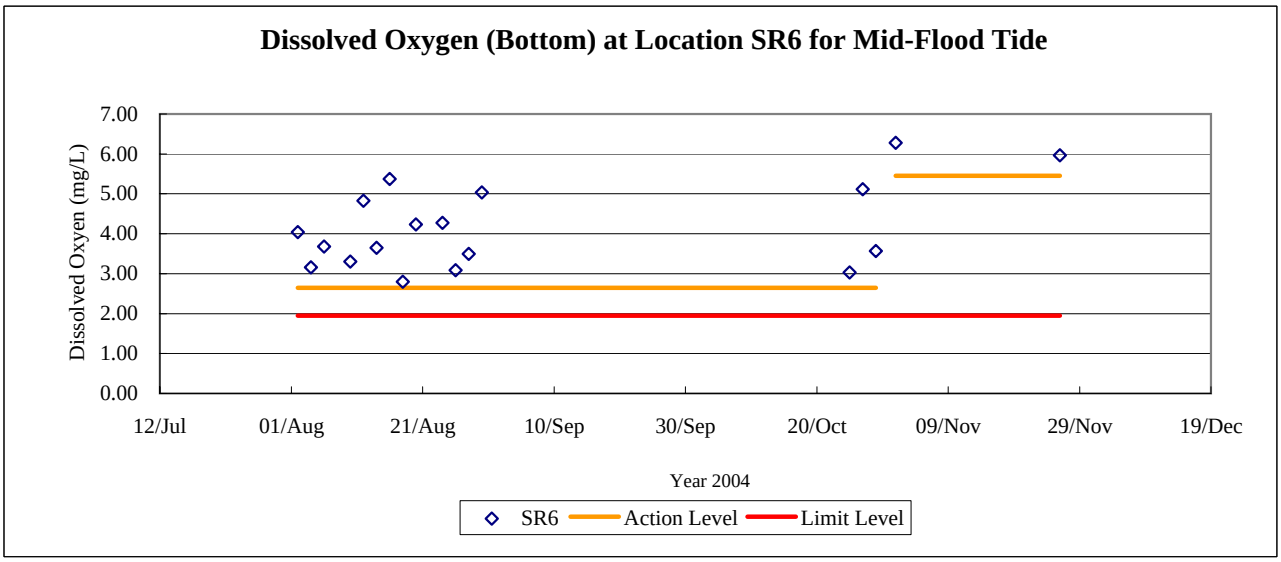
Date: 26/11/2004
Weather: Sunny
Sea Condition: Rough
Tide: Mid-Ebb

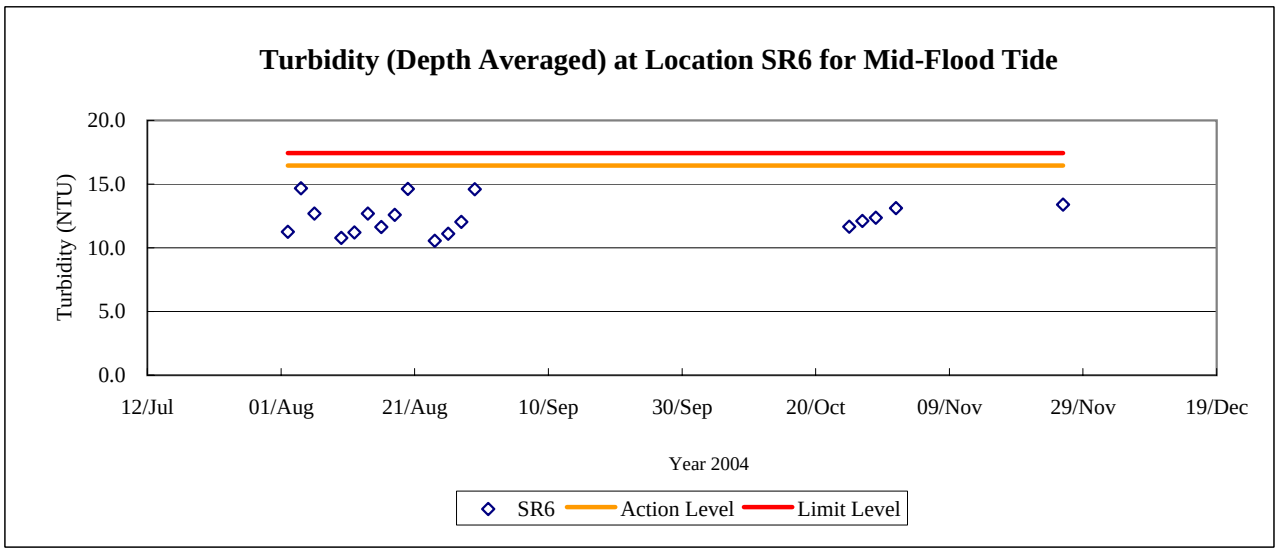
Water Quality Monitoring Result

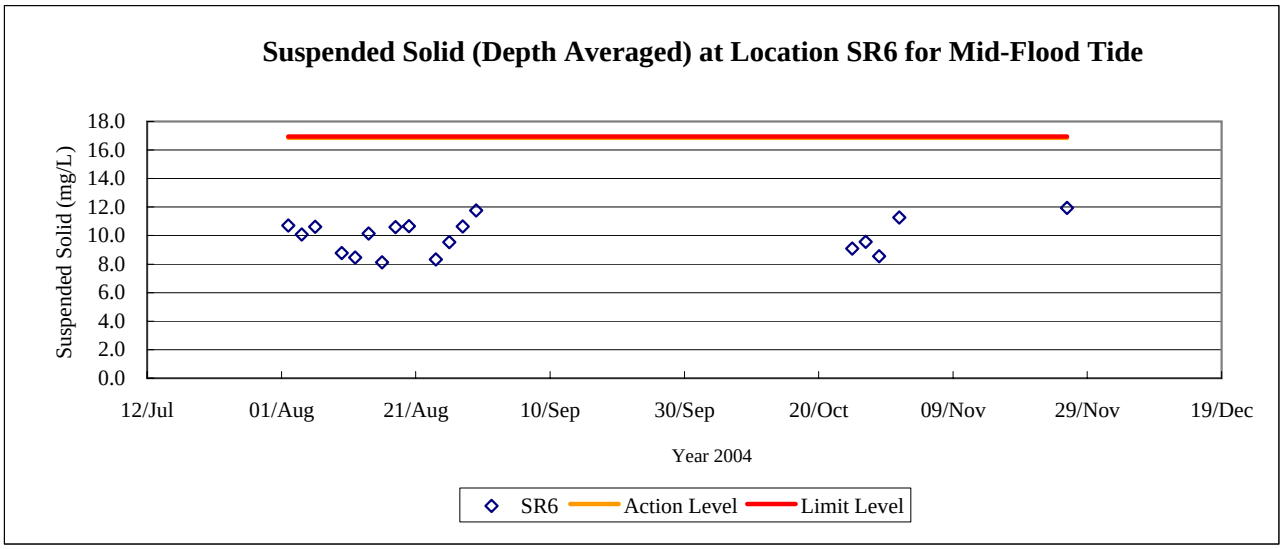
Location	Time	Depth (m)		Temp. (°C)	Salinity (ppt)	pH	D.O. Sat. (%)	D.O. (mg/L)		Turbidity (NTU)		S.S. (mg/L)	
								Value	DA	Value	DA	Average	DA
SR6	12:40	Surface	1	23.2 23.2	39.9 39.9	8.38 8.37	73.9 71.2	5.51 5.28	5.66	14.4 14.2	13.7	12.6	12.0
		Middle	11.5	23.2 23.2	39.9 39.9	8.33 8.34	79.0 79.6	5.91 5.95		13.2 13.1		12.0	
		Bottom	22	22.7 22.7	40.0 40.0	8.32 8.32	77.5 77.8	5.80 5.82	5.81	13.4 13.7		11.4	
	Other Observations:			Nil									
SR7	12:30	Surface	1	23.4 23.4	40.1 40.1	8.37 8.37	79.0 78.7	5.90 5.88	5.92	13.8 13.4	13.7	12.7	12.2
		Middle	5	23.4 23.4	40.1 40.1	8.34 8.34	79.9 79.5	5.97 5.93		13.6 13.2		12.0	
		Bottom	8.5	23.3 23.3	40.1 40.1	8.33 8.32	79.5 79.7	5.95 5.96	5.96	14.0 14.2		11.9	
	Other Observations:			Nil									
SR10	12:15	Surface	1	23.1 23.1	40.2 40.2	8.49 8.38	83.3 84.5	6.22 6.30	6.32	12.8 12.0	13.4	12.7	11.8
		Middle	4.5	23.1 23.0	40.2 40.2	8.45 8.45	85.5 85.2	6.40 6.37		13.1 13.0		12.0	
		Bottom	8	23.0 23.0	40.2 40.2	8.43 8.43	85.3 85.8	6.38 6.41	6.40	14.7 14.6		10.7	
	Other Observations:			Nil									
SR11	12:05	Surface	1	23.2 23.2	40.1 40.1	8.44 8.44	75.7 72.5	5.63 5.41	5.99	10.6 11.2	13.3	11.2	11.2
		Middle	4.5	23.2 23.2	40.2 40.2	8.44 8.44	86.8 86.1	6.49 6.43		14.5 14.2		12.5	
		Bottom	7.5	23.1 23.1	40.2 40.2	8.44 8.43	85.8 87.6	6.43 6.57	6.50	14.8 14.6		10.1	
	Other Observations:			Nil									
SR12	11:50	Surface	1	23.2 23.2	40.1 40.1	8.42 8.42	78.5 77.5	5.78 5.87	6.04	11.1 11.6	12.8	11.5	11.0
		Middle	4.5	23.2 23.2	40.2 40.2	8.43 8.43	83.7 83.1	6.28 6.23		13.8 13.0		10.5	
		Bottom	7.5	23.0 23.0	40.2 40.2	8.43 8.43	84.0 84.2	6.29 6.30	6.30	13.8 13.7		10.9	
	Other Observations:			Nil									
SR14	11:40	Surface	1	23.1 23.1	40.1 40.1	8.43 8.43	85.3 84.4	6.40 6.34	6.35	14.7 14.2	13.7	11.7	11.8
		Middle	5	23.1 23.1	40.1 40.1	8.43 8.43	84.0 84.6	6.30 6.35		13.0 13.0		11.9	
		Bottom	8.5	23.0 23.0	40.1 40.1	8.43 8.43	81.5 81.7	6.09 6.10	6.10	13.7 13.4		11.8	
	Other Observations:			Nil									
SR15	11:30	Surface	1	23.0 23.0	40.2 40.2	8.43 8.43	80.9 83.5	6.04 6.23	6.08	14.0 14.0	14.1	12.0	11.3
		Middle	11	23.0 23.0	40.1 40.1	8.43 8.43	80.4 80.2	6.03 6.01		13.9 13.8		10.3	
		Bottom	21	22.6 22.5	40.2 40.2	8.44 8.44	80.2 80.0	6.01 6.00	6.01	14.9 14.1		11.6	
	Other Observations:			Nil									
CS1	10:45	Surface	1	23.2 23.2	39.9 39.9	8.38 8.38	79.5 80.5	5.93 6.01	5.92	13.0 13.2	13.4	12.0	12.5
		Middle	5	23.2 23.2	39.9 39.9	8.39 8.39	78.7 78.9	5.87 5.88		12.5 14.5		12.3	
		Bottom	8.5	23.2 23.2	39.9 39.9	8.39 8.39	78.3 78.7	5.85 5.87	5.86	13.5 13.8		13.3	
	Other Observations:			Nil									
CS2	11:00	Surface	1	22.9 22.9	40.4 40.4	8.39 8.39	85.6 85.3	6.39 6.36	6.38	12.1 11.1	11.4	12.4	12.0
		Middle	5.5	23.0 23.0	40.7 40.7	8.41 8.41	85.5 85.7	6.38 6.40		10.1 10.0		10.1	
		Bottom	10	22.9 22.9	40.7 40.7	8.41 8.41	79.0 80.9	5.86 6.03	5.95	13.2 12.0		13.4	
	Other Observations:			Nil									
CS3	11:20	Surface	1	23.0 23.0	40.2 40.2	8.43 8.43	80.5 80.7	6.05 6.06	6.01	18.0 17.2	15.4	13.2	12.3
		Middle	11.5	22.9 22.9	40.2 40.2	8.45 8.45	78.1 80.7	5.85 6.06		15.8 15.1		12.3	
		Bottom	21.5	22.6 22.6	40.2 40.2	8.45 8.45	73.6 79.1	5.56 5.94	5.75	13.0 13.4		11.4	
	Other Observations:			Nil									

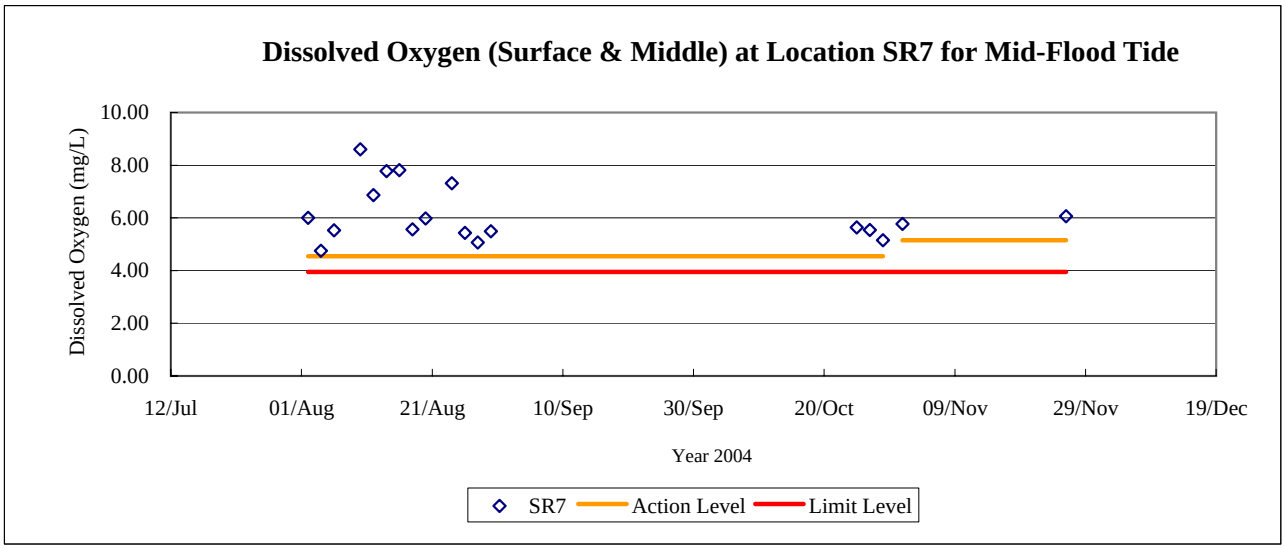
* Contains sample results < detection limit but assumed to be at the detection limit for the sake of computation.

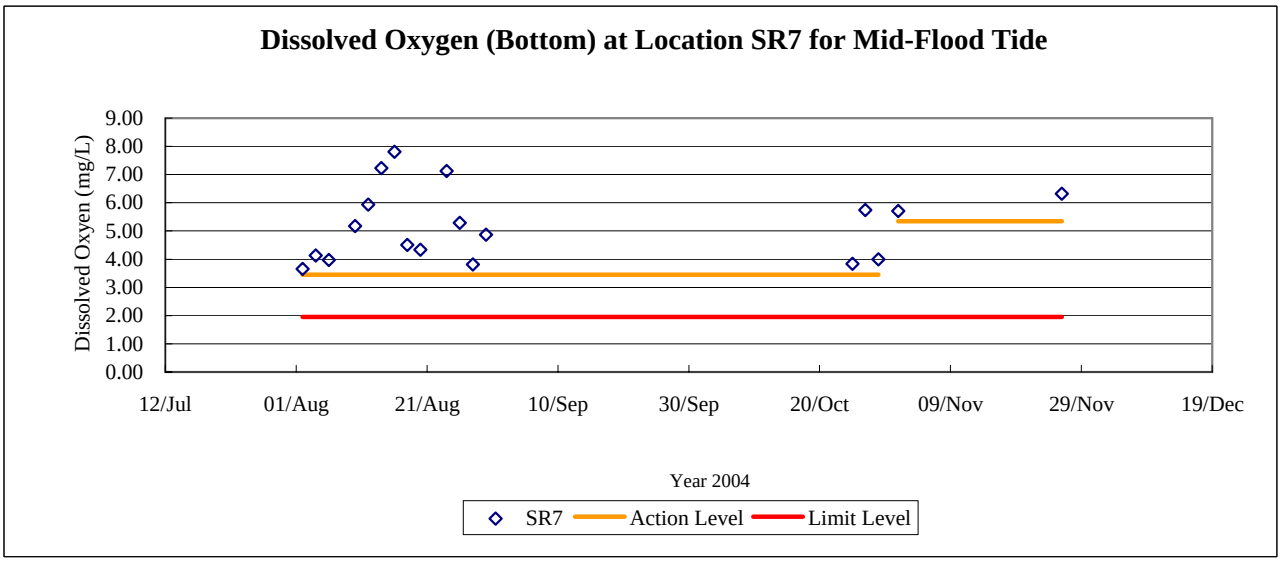

Dissolved Oxygen (Surface & Middle) at Location SR6 for Mid-Flood Tide
Dissolved Oxygen (mg/L)
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR6
Action Level
Limit Level

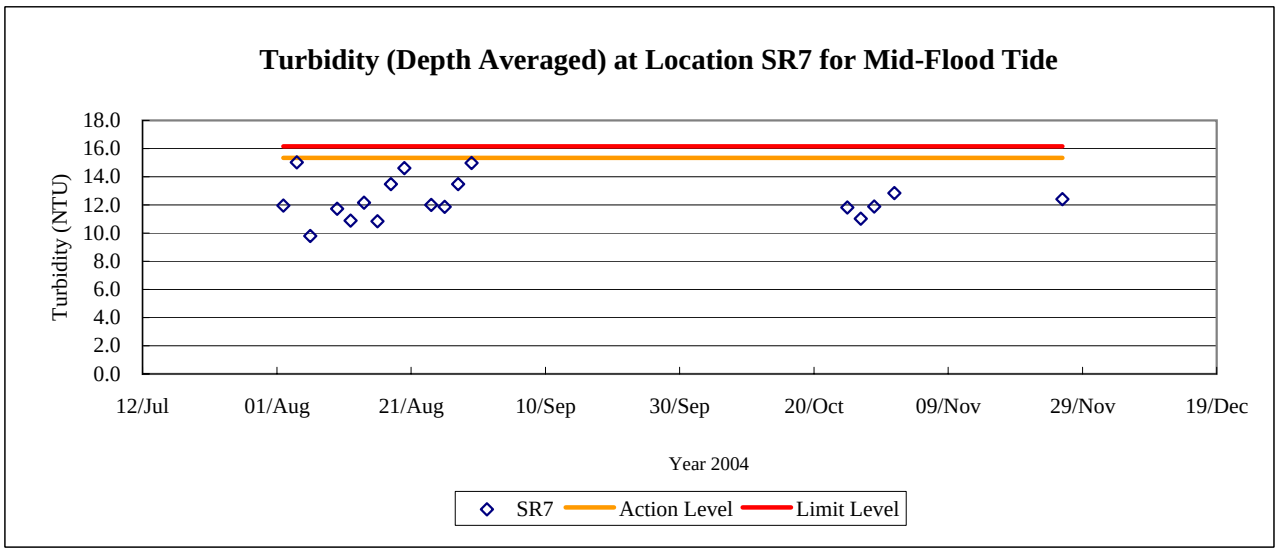

Dissolved Oxygen (Bottom) at Location SR6 for Mid-Flood Tide
Dissolved Oxyen (mg/L)
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR6
Action Level
Limit Level

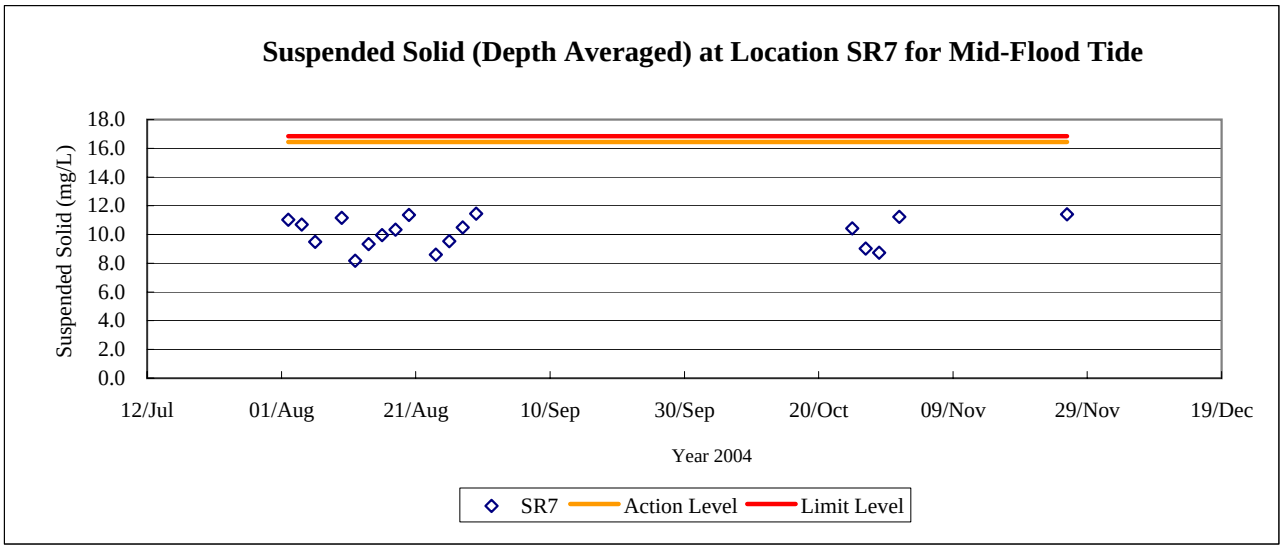

Turbidity (Depth Averaged) at Location SR6 for Mid-Flood Tide
Turbidity (NTU)
20.0
15.0
10.0
5.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR6
Action Level
Limit Level

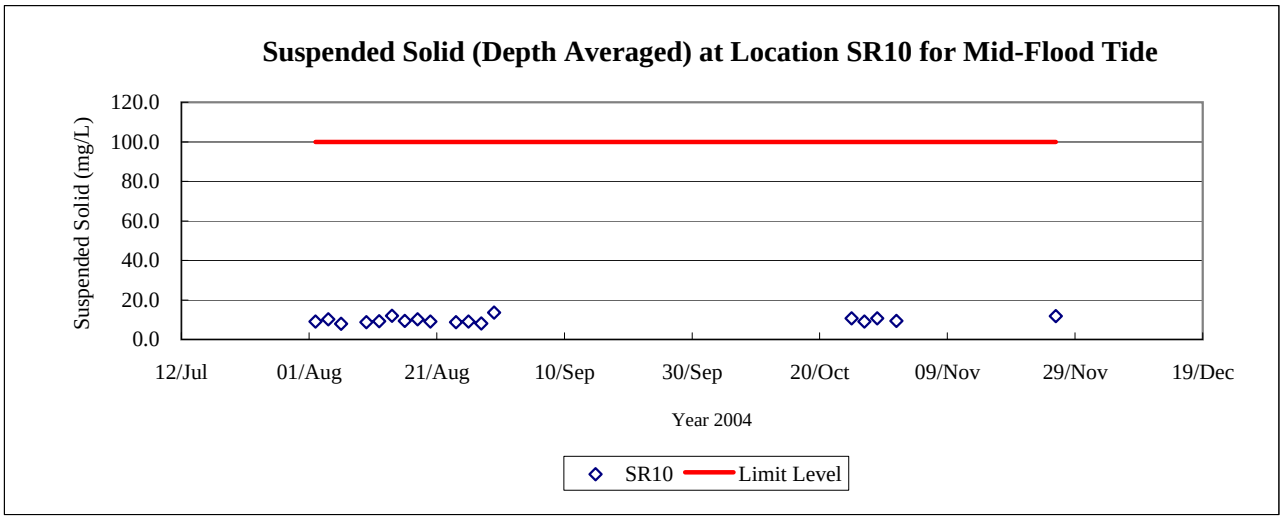

Suspended Solid (Depth Averaged) at Location SR6 for Mid-Flood Tide
Suspended Solid (mg/L)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR6
Action Level
Limit Level

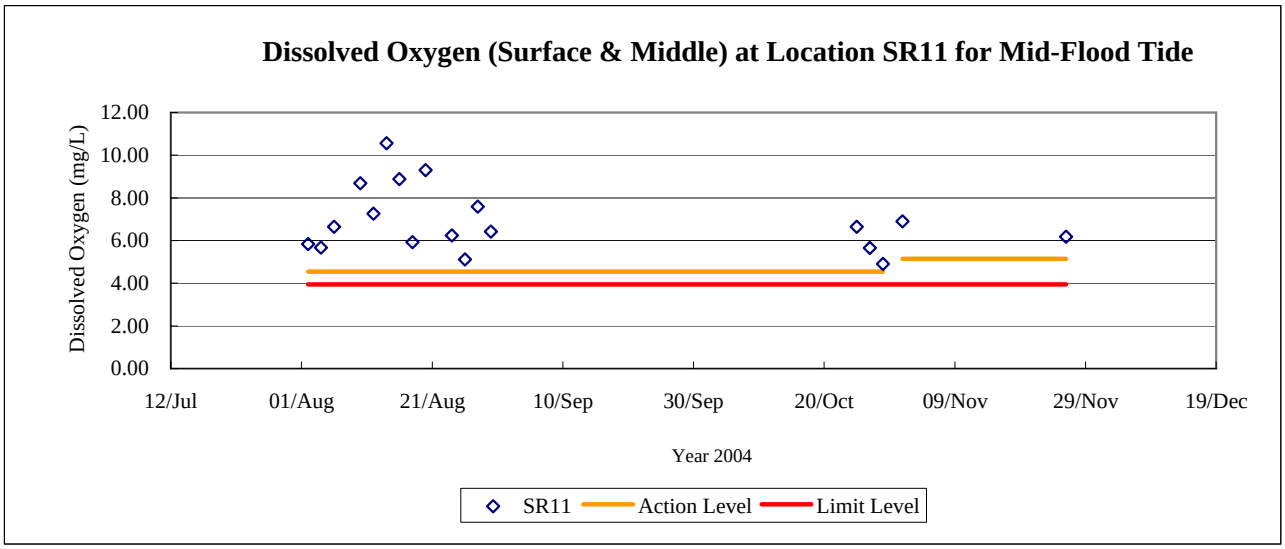

Dissolved Oxygen (Surface & Middle) at Location SR7 for Mid-Flood Tide
Dissolved Oxygen (mg/L)
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR7
Action Level
Limit Level

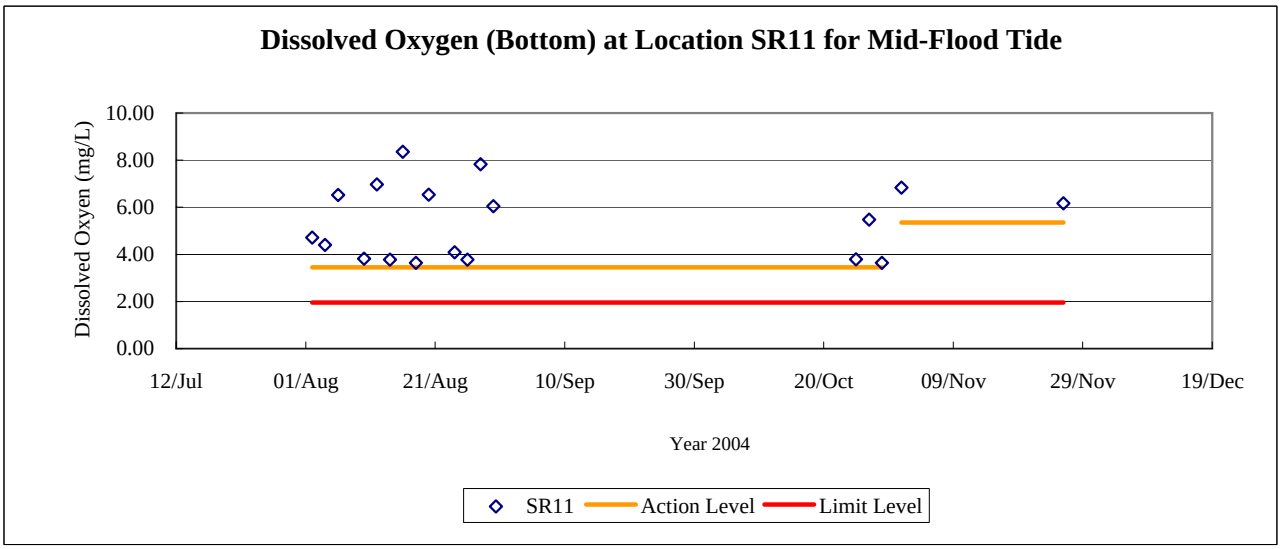

Dissolved Oxygen (Bottom) at Location SR7 for Mid-Flood Tide
Dissolved Oxyen (mg/L)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR7
Action Level
Limit Level

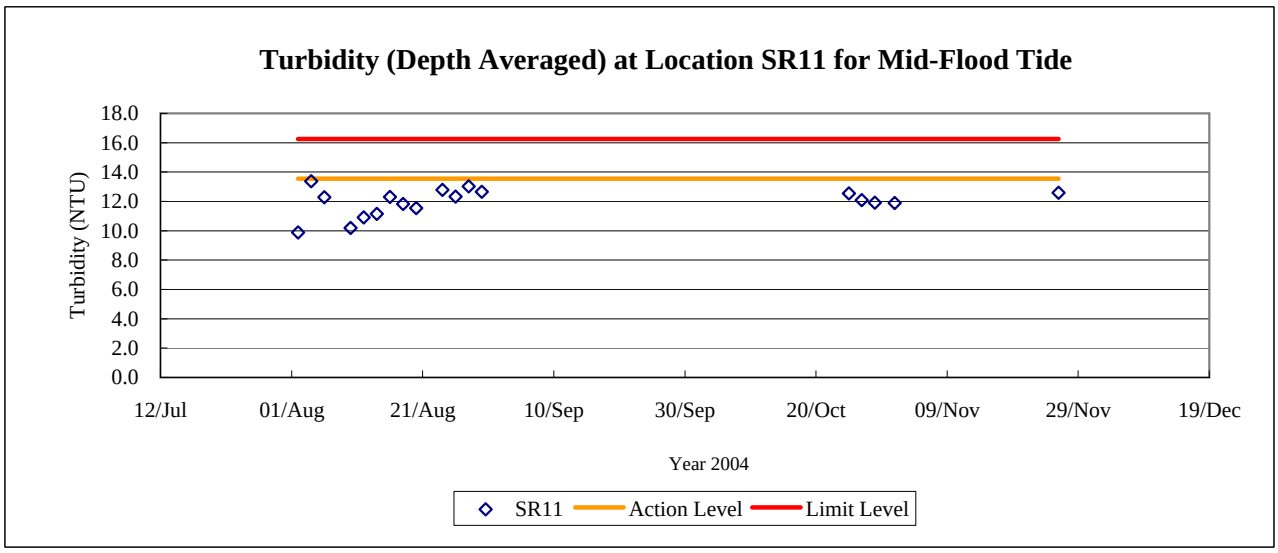

Turbidity (Depth Averaged) at Location SR7 for Mid-Flood Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR7
Action Level
Limit Level

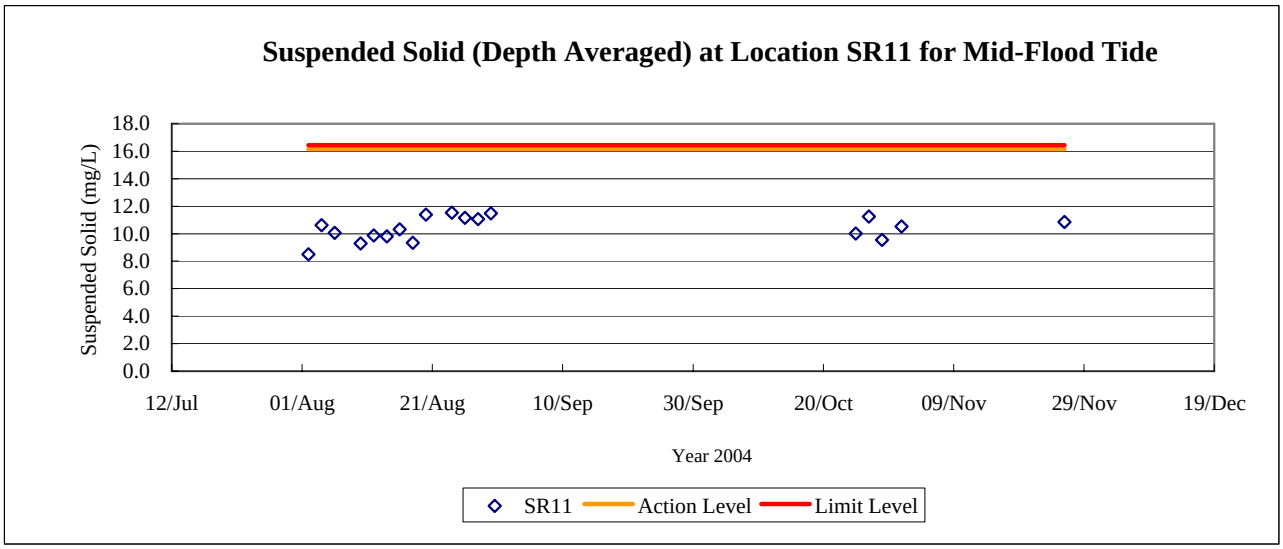

Suspended Solid (Depth Averaged) at Location SR7 for Mid-Flood Tide
Suspended Solid (mg/L)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR7
Action Level
Limit Level

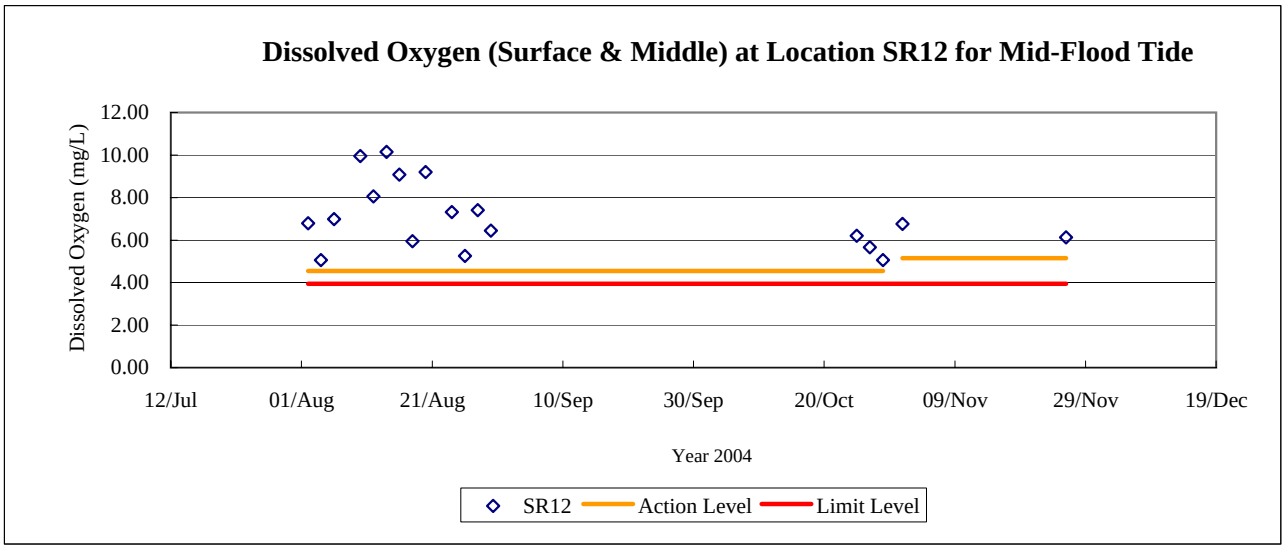

Suspended Solid (Depth Averaged) at Location SR10 for Mid-Flood Tide
Suspended Solid (mg/L)
120.0
100.0
80.0
60.0
40.0
20.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR10
Limit Level

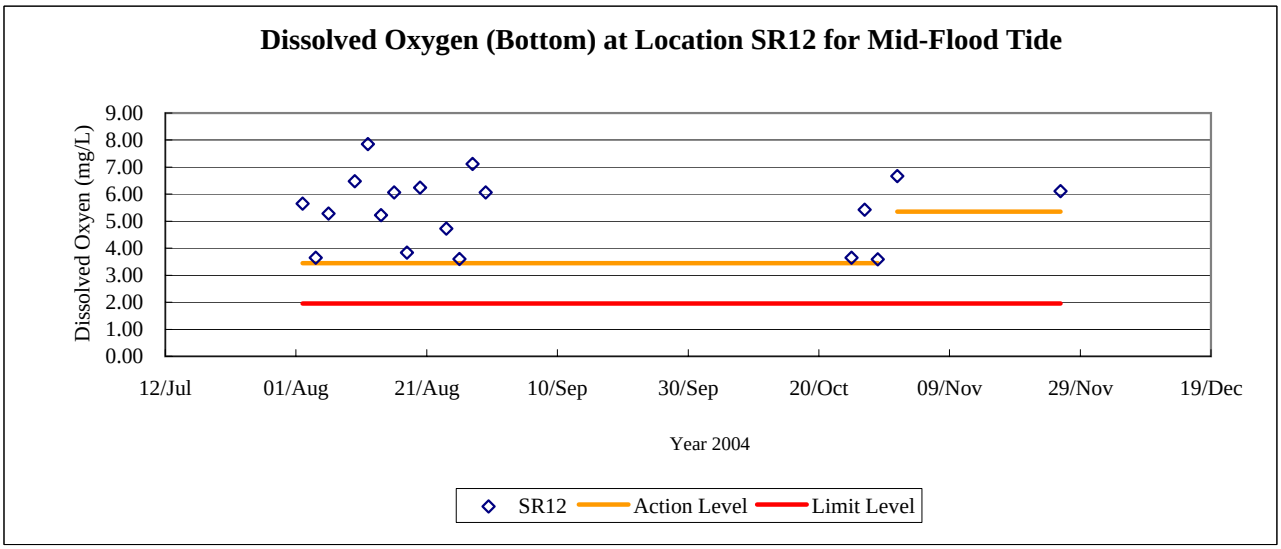

Dissolved Oxygen (Surface & Middle) at Location SR11 for Mid-Flood Tide
Dissolved Oxygen (mg/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR11
Action Level
Limit Level

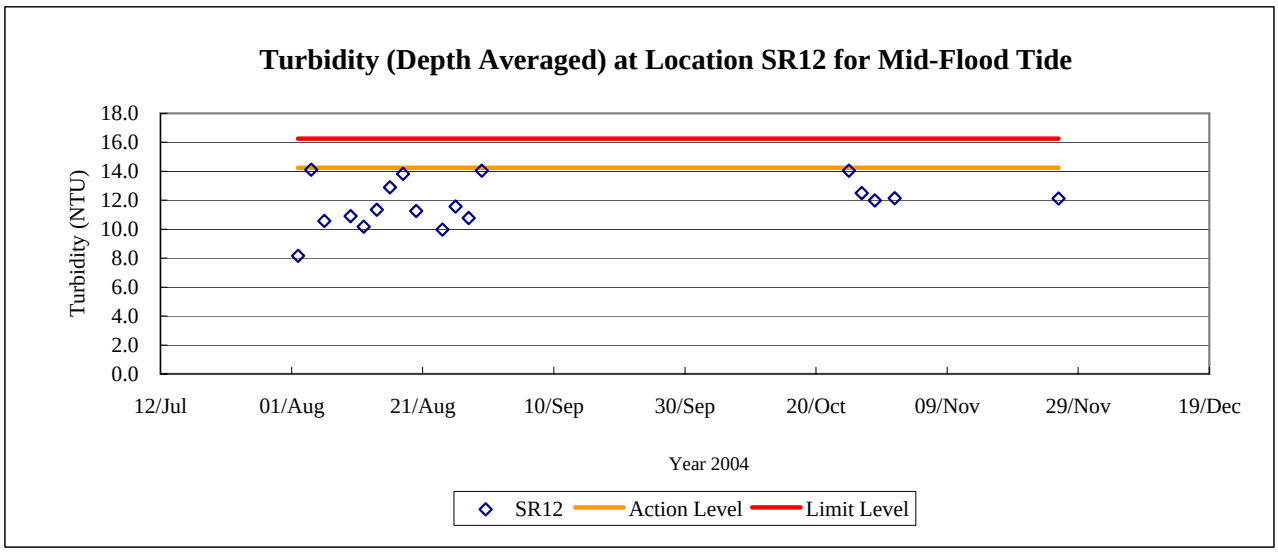

Dissolved Oxygen (Bottom) at Location SR11 for Mid-Flood Tide
Dissolved Oxyen (mg/L)
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR11
Action Level
Limit Level

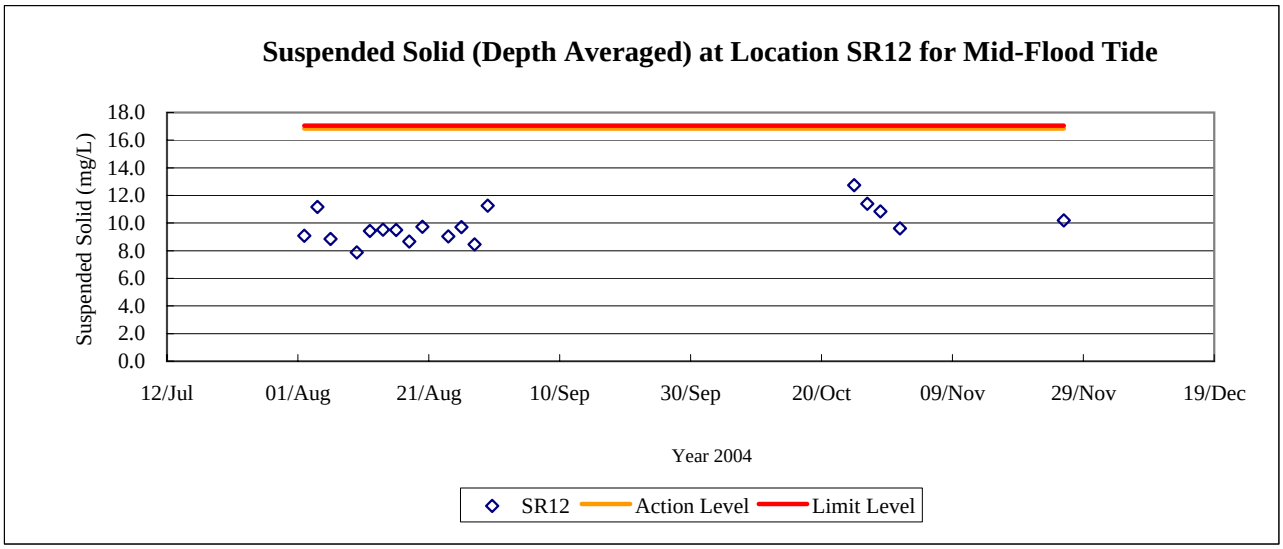

Turbidity (Depth Averaged) at Location SR11 for Mid-Flood Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR11
Action Level
Limit Level

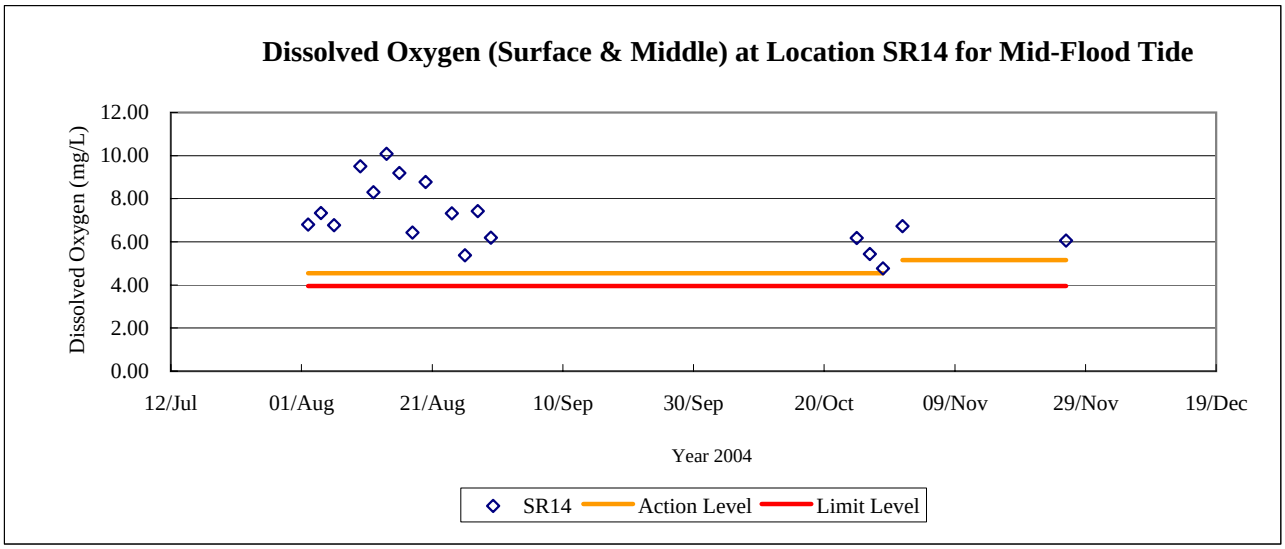

Suspended Solid (Depth Averaged) at Location SR11 for Mid-Flood Tide
Suspended Solid (mg/L)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR11
Action Level
Limit Level

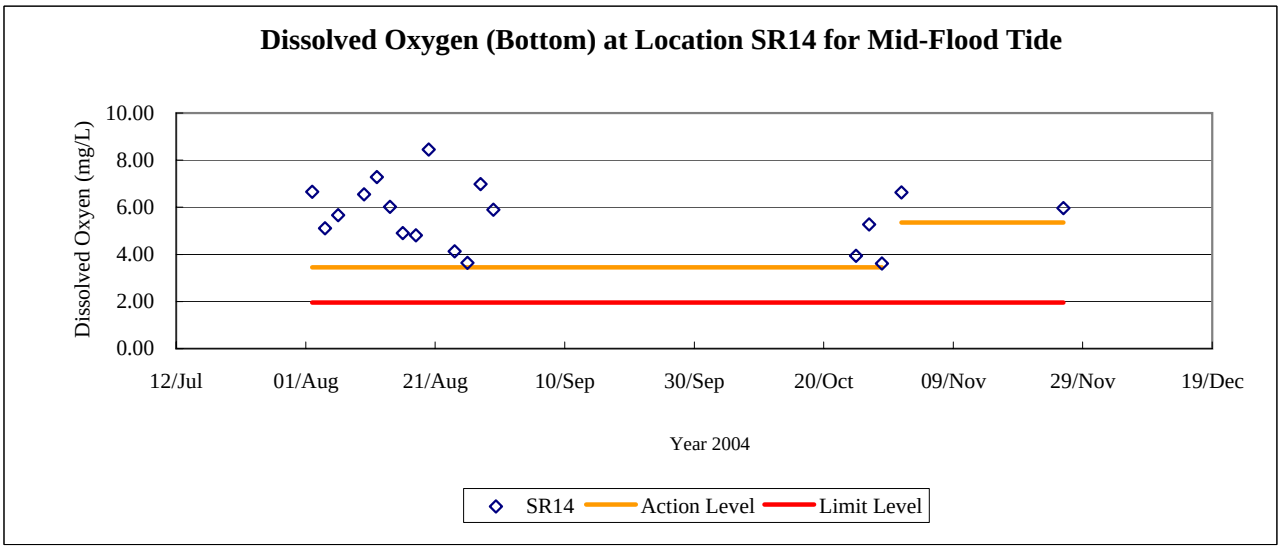

Dissolved Oxygen (Surface & Middle) at Location SR12 for Mid-Flood Tide
Dissolved Oxygen (mg/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR12
Action Level
Limit Level

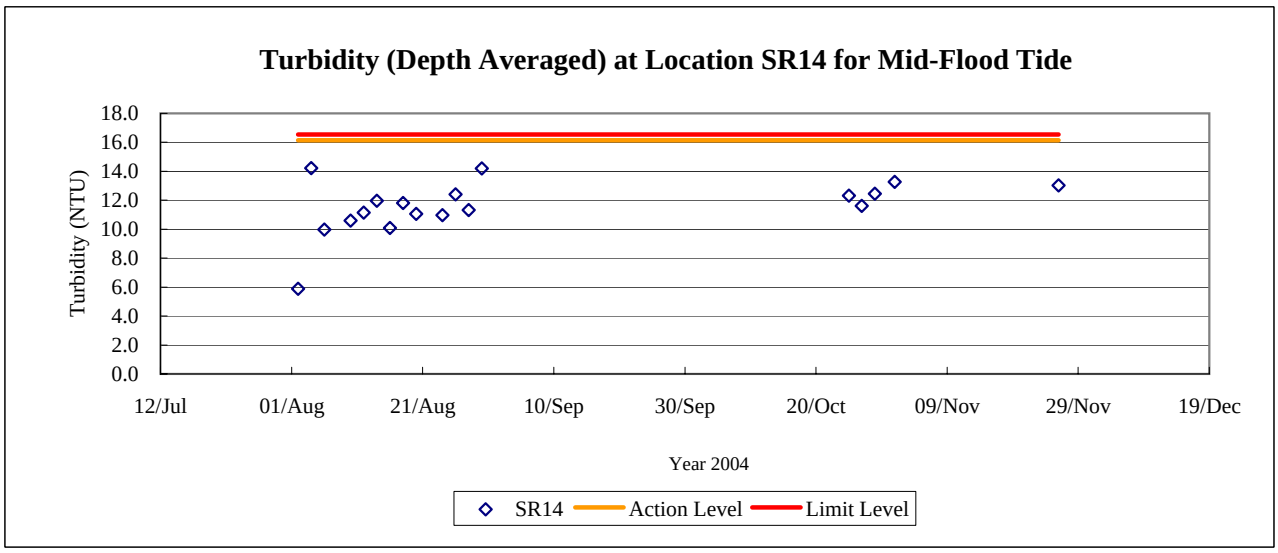

Dissolved Oxygen (Bottom) at Location SR12 for Mid-Flood Tide
Dissolved Oxyen (mg/L)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR12
Action Level
Limit Level

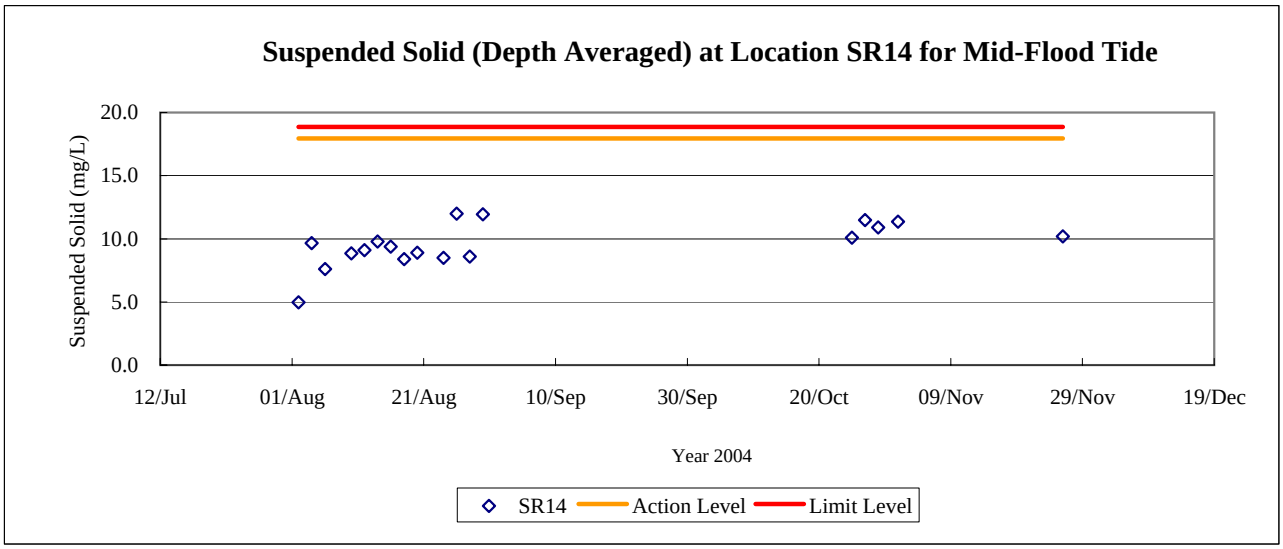

Turbidity (Depth Averaged) at Location SR12 for Mid-Flood Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR12
Action Level
Limit Level

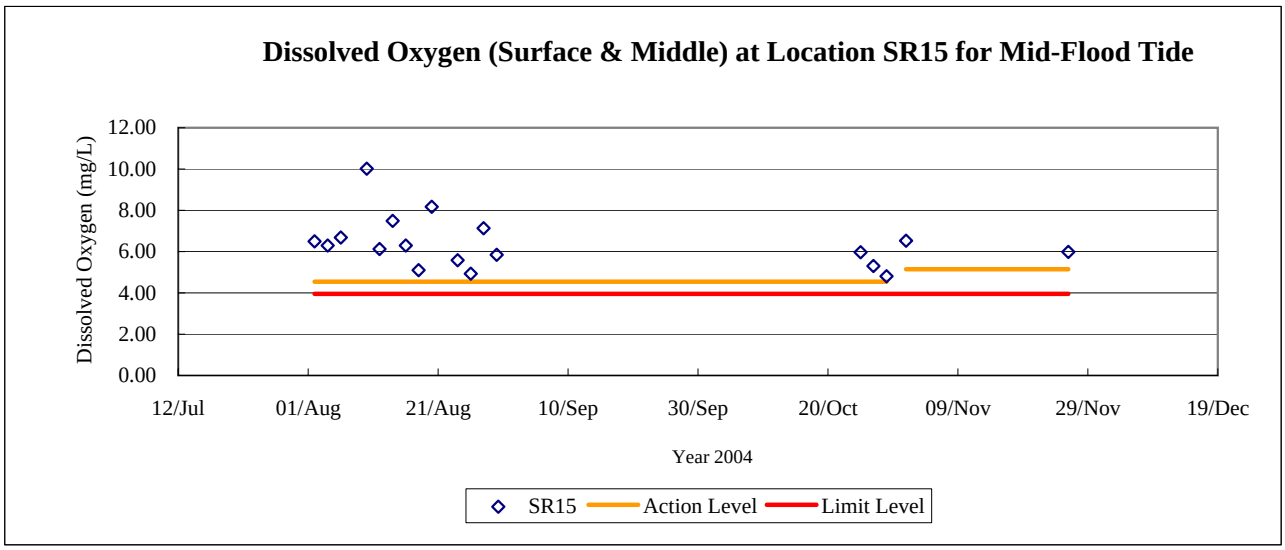

Suspended Solid (Depth Averaged) at Location SR12 for Mid-Flood Tide
Suspended Solid (mg/L)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR12
Action Level
Limit Level

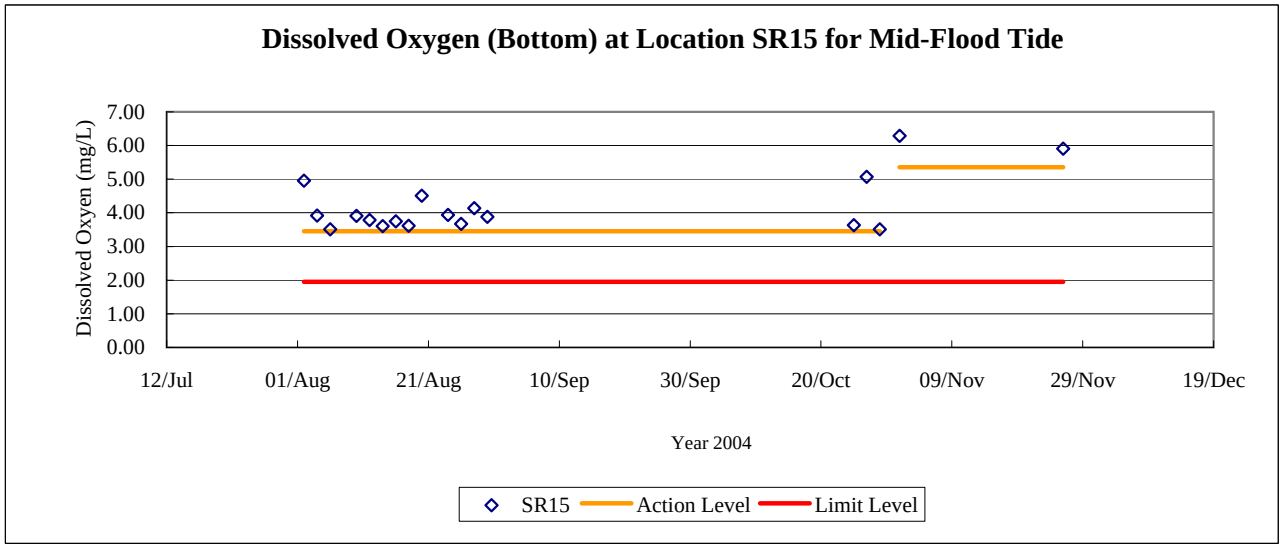

Dissolved Oxygen (Surface & Middle) at Location SR14 for Mid-Flood Tide
Dissolved Oxygen (mg/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR14
Action Level
Limit Level

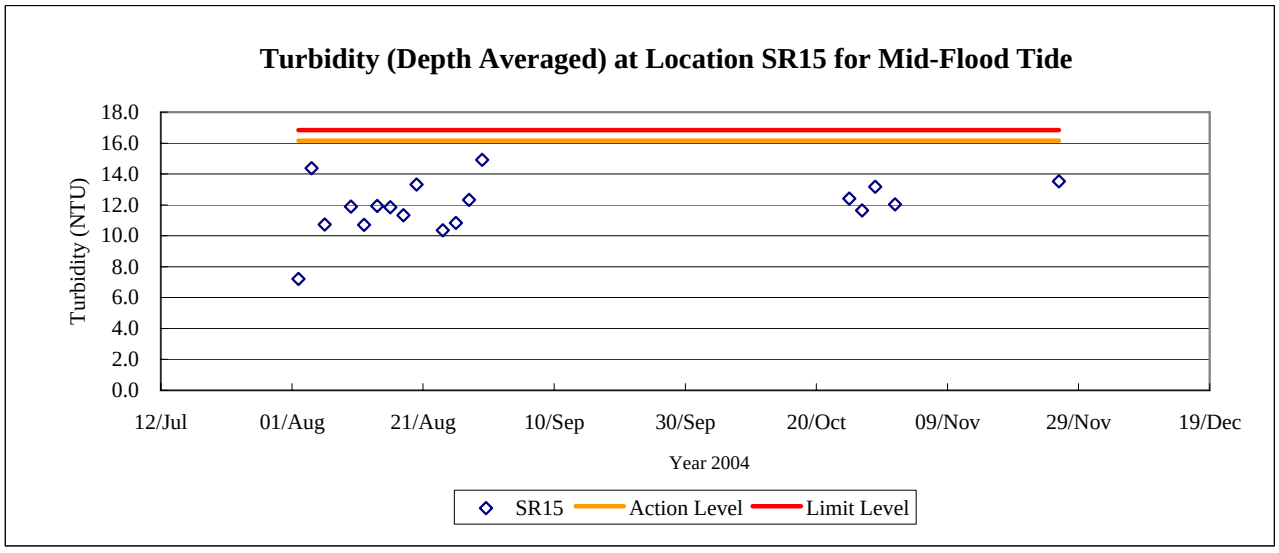

Dissolved Oxygen (Bottom) at Location SR14 for Mid-Flood Tide
Dissolved Oxyen (mg/L)
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR14
Action Level
Limit Level

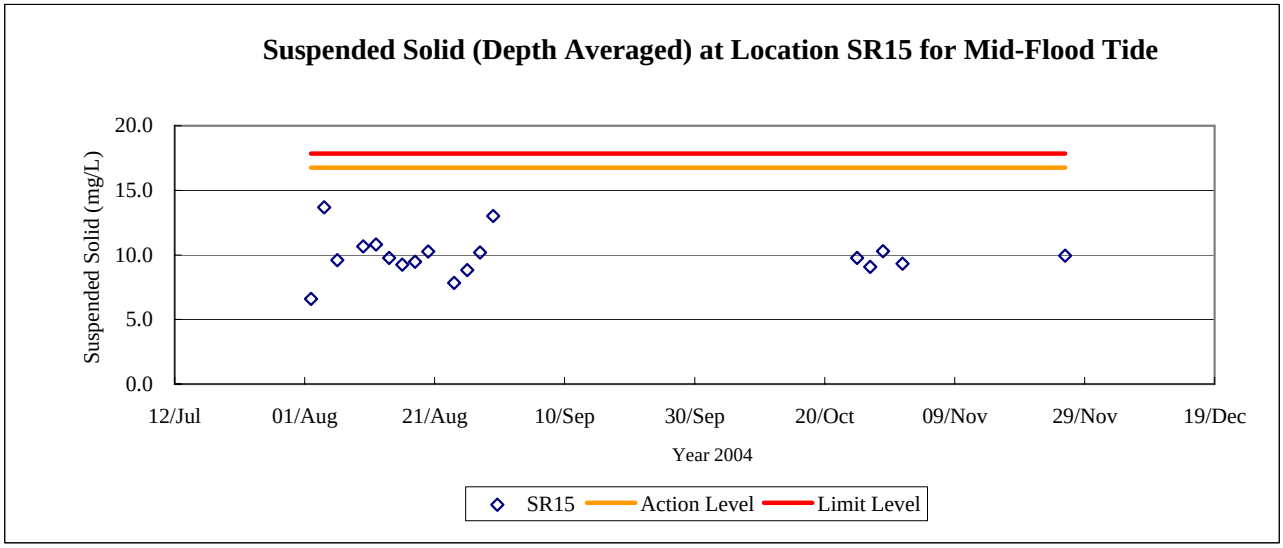

Turbidity (Depth Averaged) at Location SR14 for Mid-Flood Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR14
Action Level
Limit Level

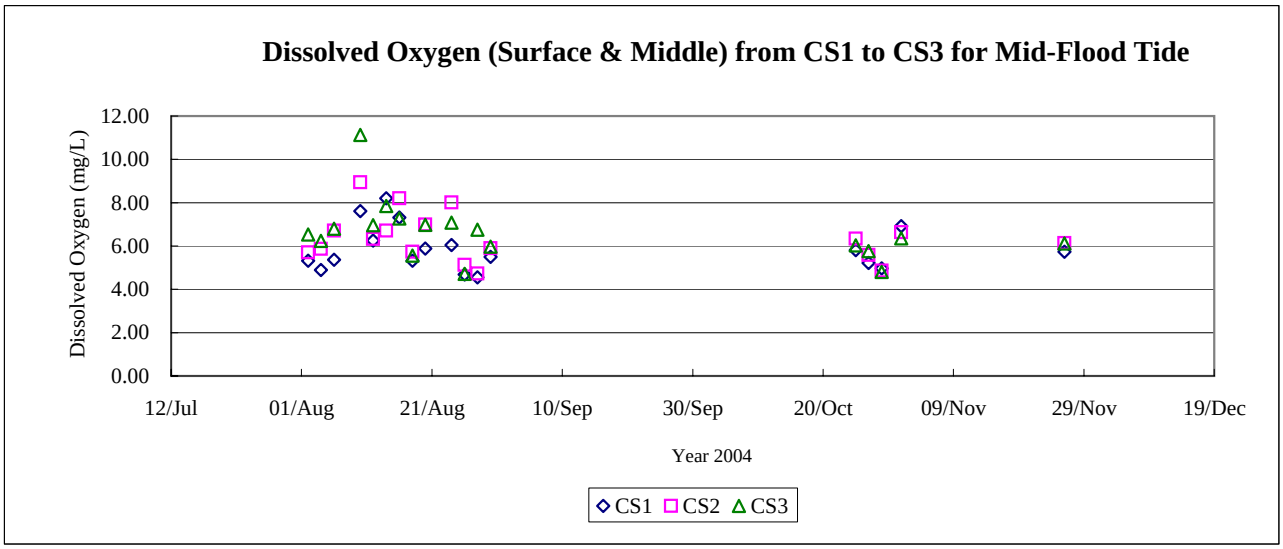

Suspended Solid (Depth Averaged) at Location SR14 for Mid-Flood Tide
Suspended Solid (mg/L)
20.0
15.0
10.0
5.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR14
Action Level
Limit Level

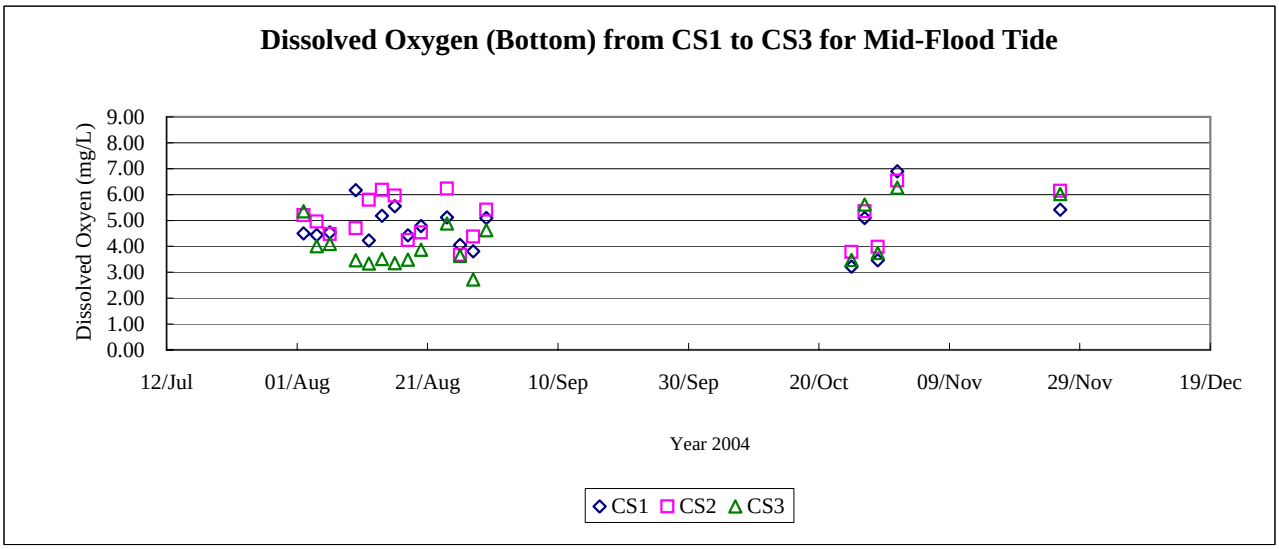

Dissolved Oxygen (Surface & Middle) at Location SR15 for Mid-Flood Tide
Dissolved Oxygen (mg/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR15
Action Level
Limit Level

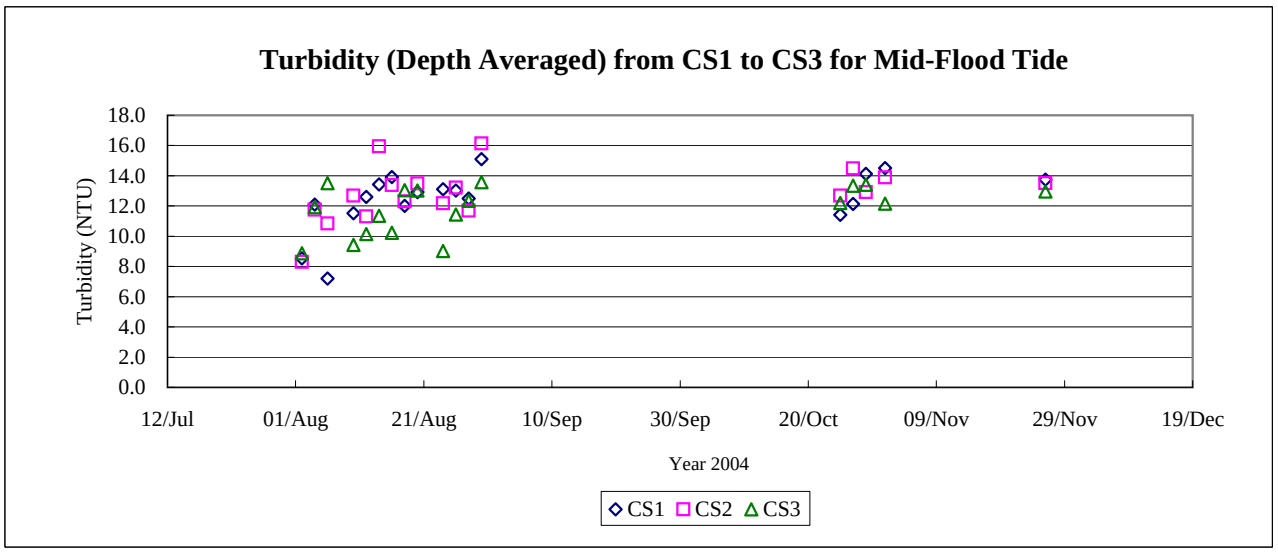

Dissolved Oxygen (Bottom) at Location SR15 for Mid-Flood Tide
Dissolved Oxyen (mg/L)
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR15
Action Level
Limit Level

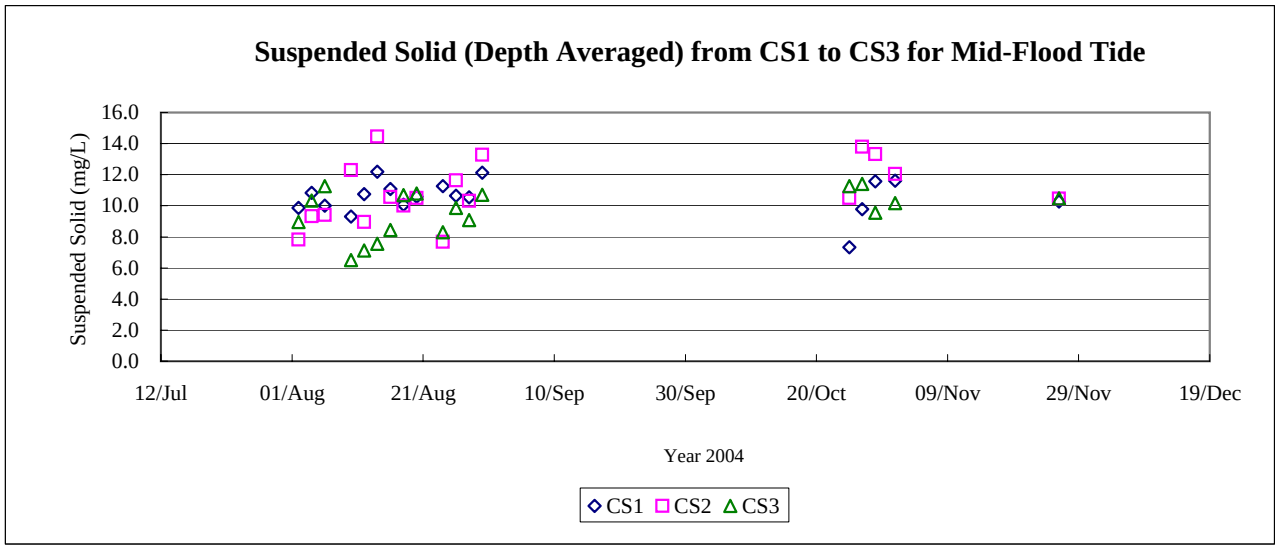

Turbidity (Depth Averaged) at Location SR15 for Mid-Flood Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR15
Action Level
Limit Level

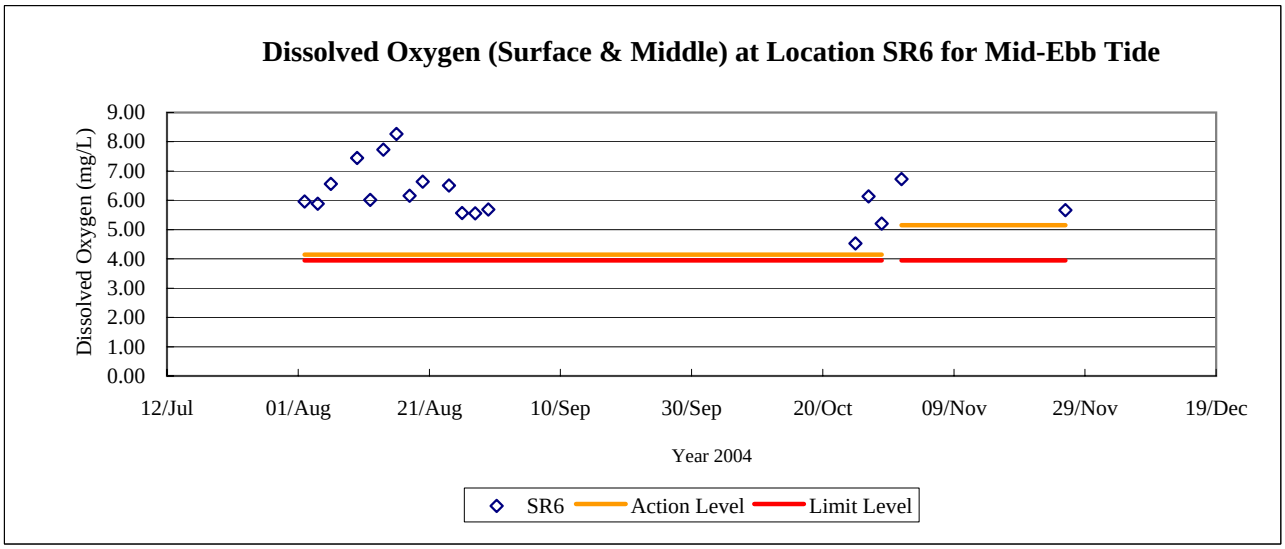

Suspended Solid (Depth Averaged) at Location SR15 for Mid-Flood Tide
Suspended Solid (mg/L)
20.0
15.0
10.0
5.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR15
Action Level
Limit Level

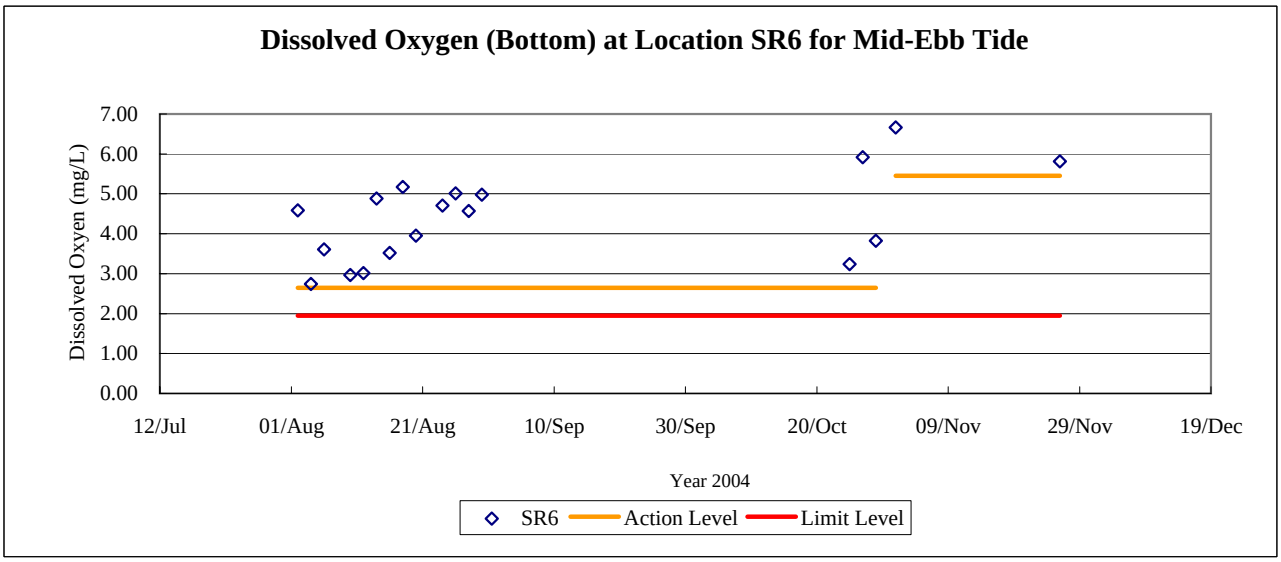

Dissolved Oxygen (Surface & Middle) from CS1 to CS3 for Mid-Flood Tide
Dissolved Oxygen (mg/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
CS1 CS2 CS3

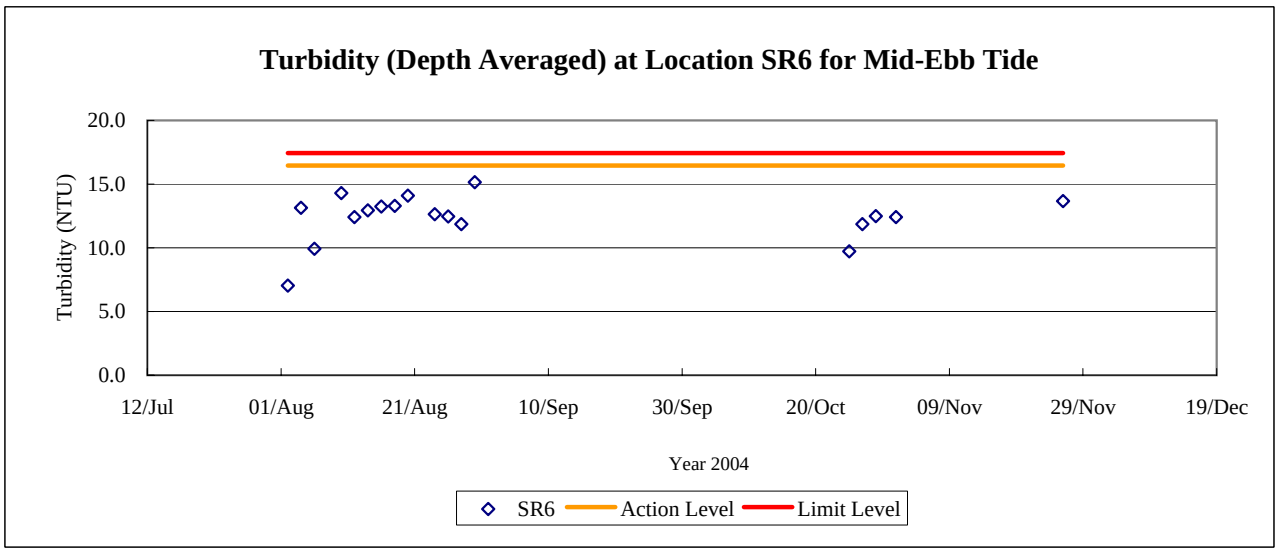

Dissolved Oxygen (Bottom) from CS1 to CS3 for Mid-Flood Tide
Dissolved Oxyen (mg/L)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
CS1 CS2 CS3

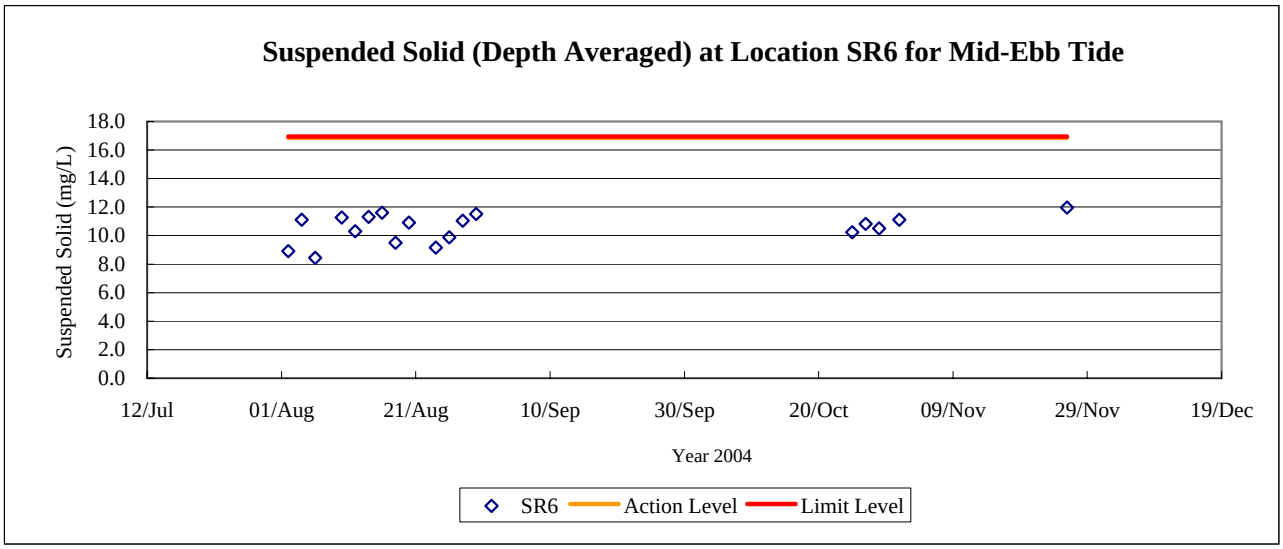

Turbidity (Depth Averaged) from CS1 to CS3 for Mid-Flood Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
CS1 CS2 CS3

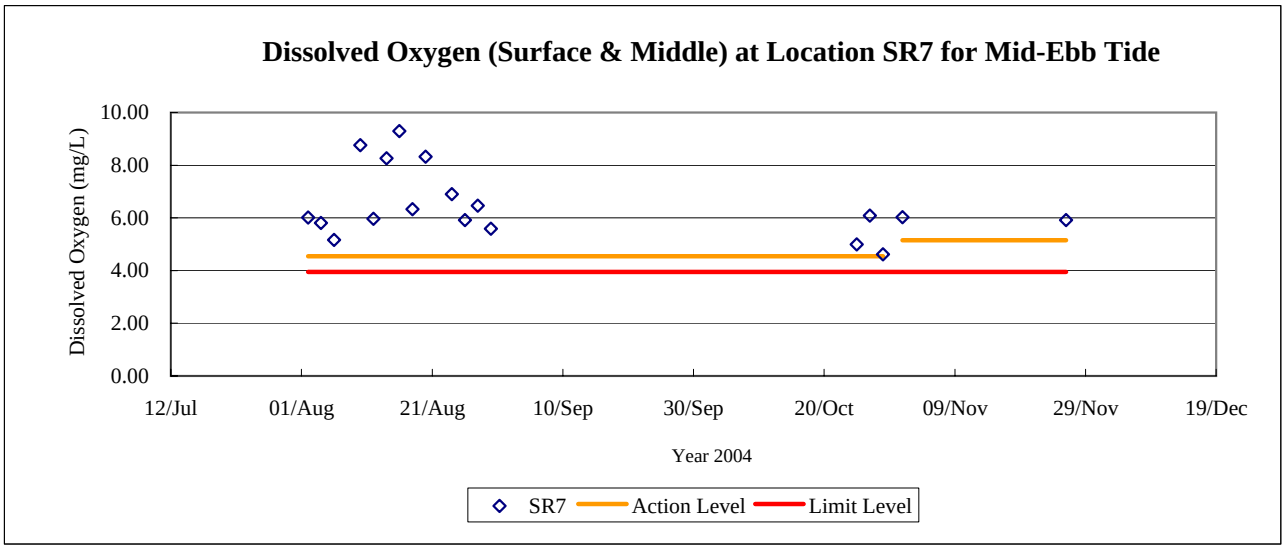

Suspended Solid (Depth Averaged) from CS1 to CS3 for Mid-Flood Tide
Suspended Solid (mg/L)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
CS1
CS2
CS3

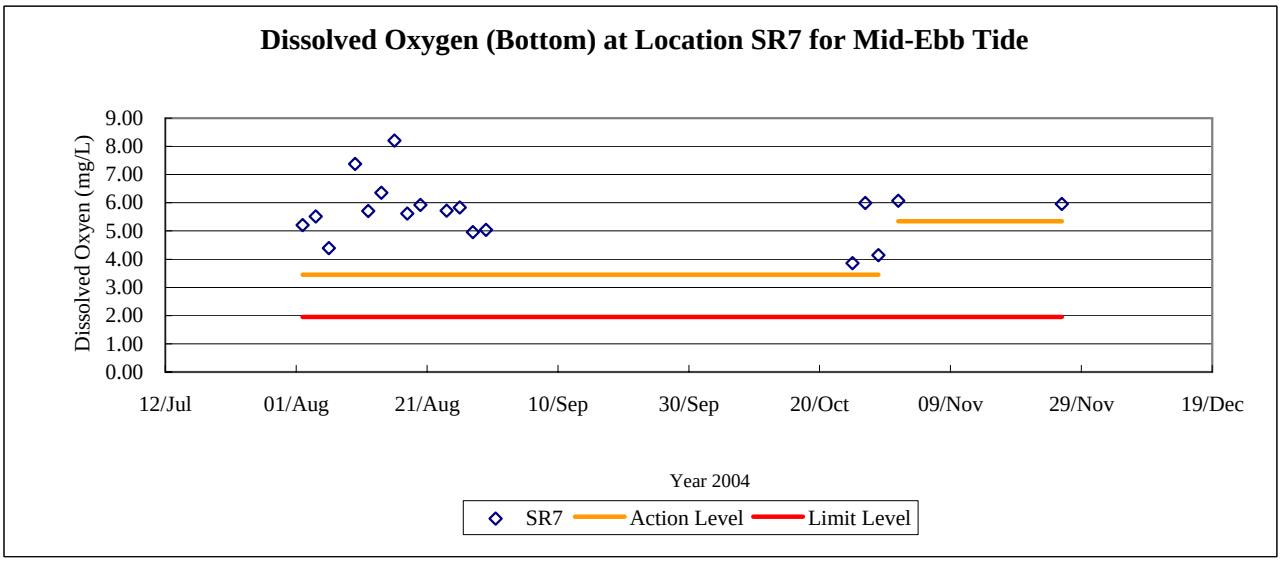

Dissolved Oxygen (Surface & Middle) at Location SR6 for Mid-Ebb Tide
Dissolved Oxygen (mg/L)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR6
Action Level
Limit Level

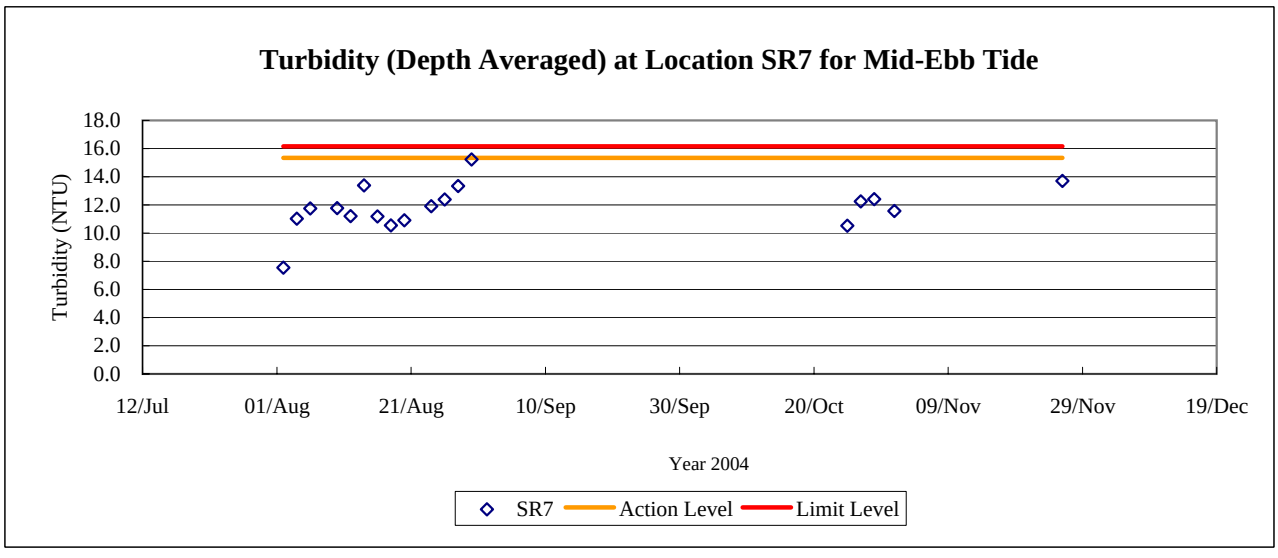

Dissolved Oxygen (Bottom) at Location SR6 for Mid-Ebb Tide
Dissolved Oxyen (mg/L)
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR6
Action Level
Limit Level

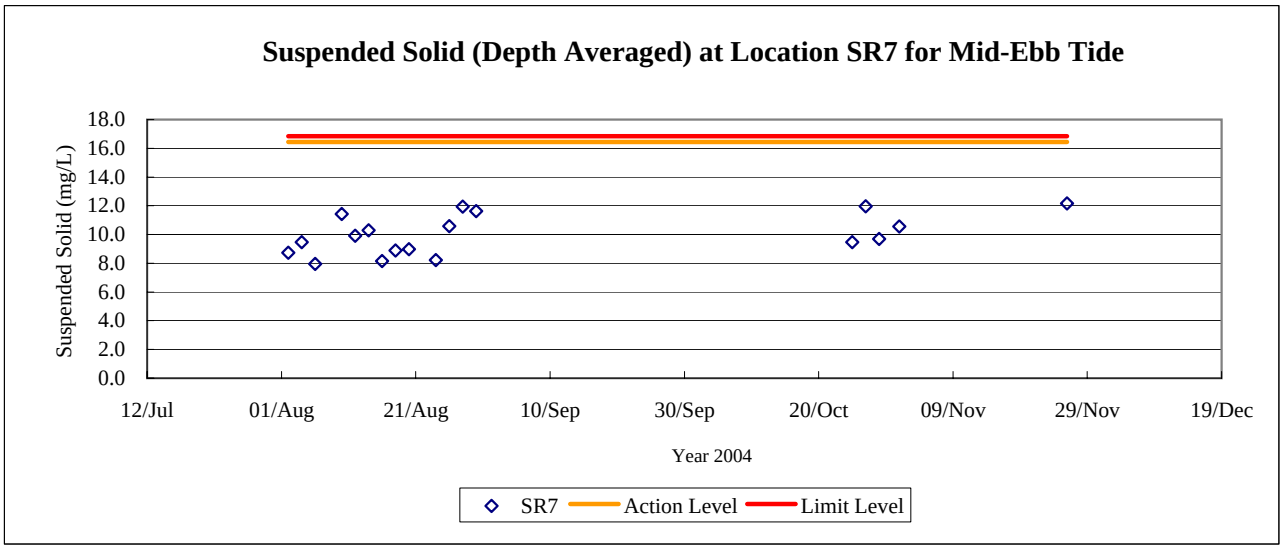

Turbidity (Depth Averaged) at Location SR6 for Mid-Ebb Tide
Turbidity (NTU)
20.0
15.0
10.0
5.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR6
Action Level
Limit Level

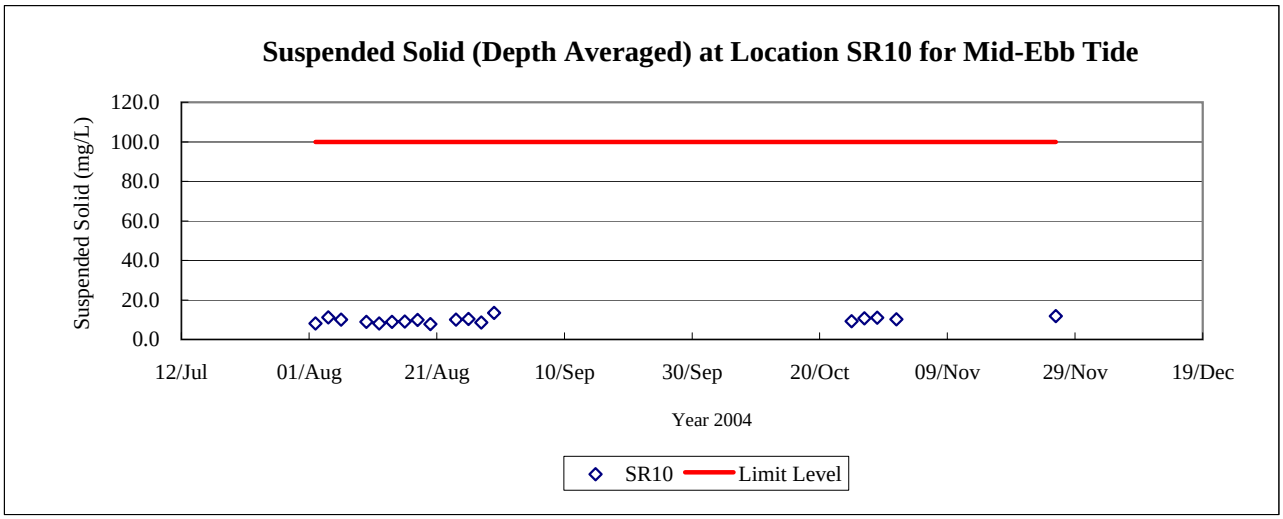

Suspended Solid (Depth Averaged) at Location SR6 for Mid-Ebb Tide
Suspended Solid (mg/L)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR6
Action Level
Limit Level

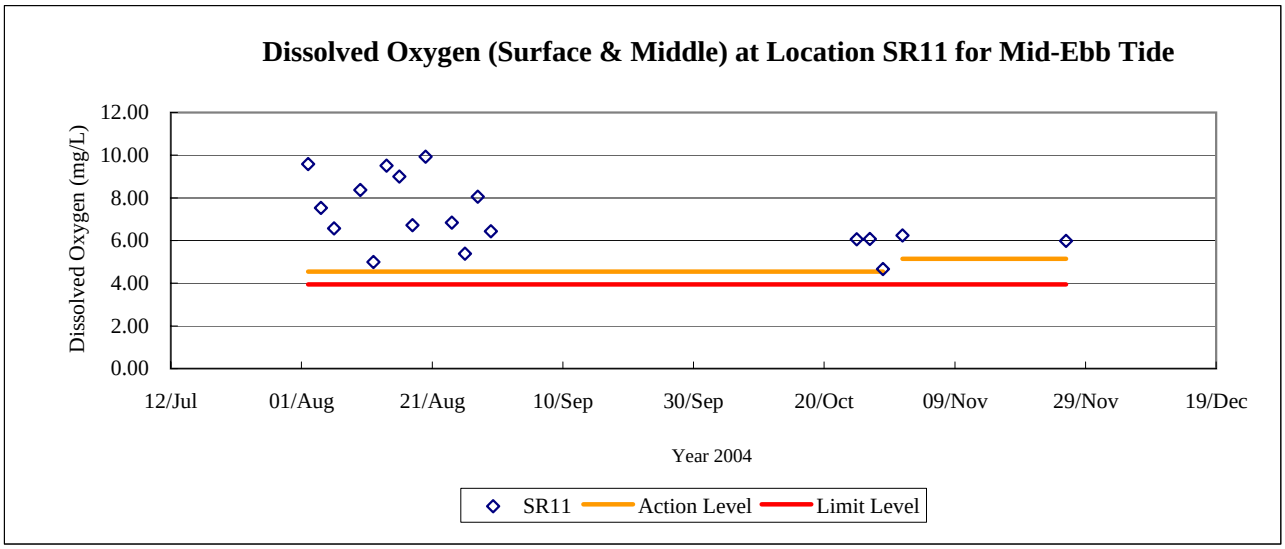

Dissolved Oxygen (Surface & Middle) at Location SR7 for Mid-Ebb Tide
Dissolved Oxygen (mg/L)
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR7
Action Level
Limit Level

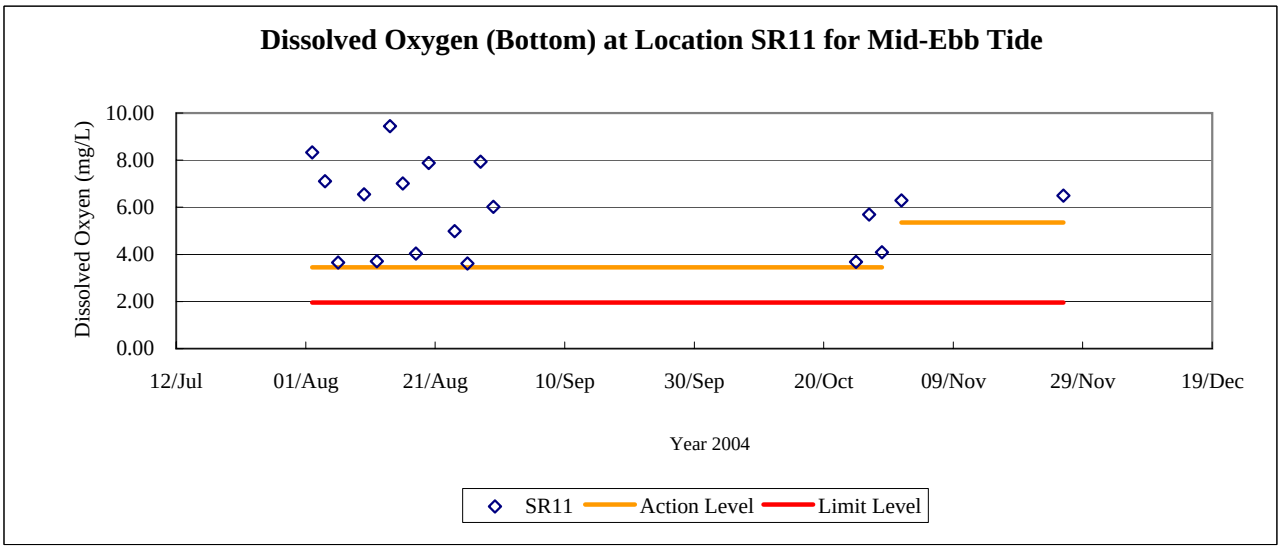

Dissolved Oxygen (Bottom) at Location SR7 for Mid-Ebb Tide
Dissolved Oxyen (mg/L)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR7
Action Level
Limit Level

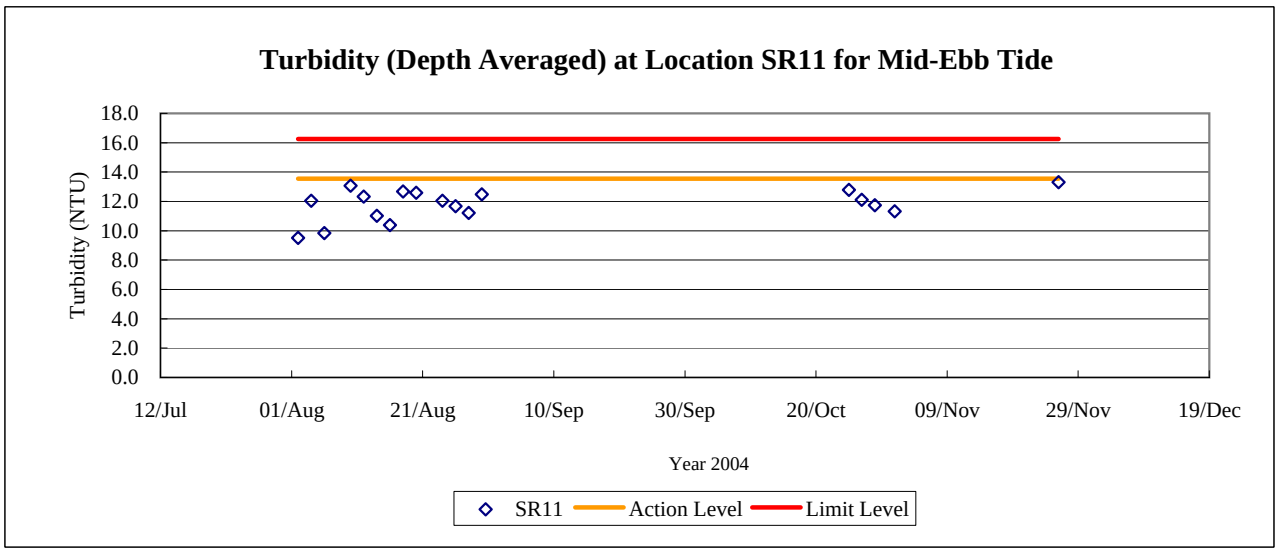

Turbidity (Depth Averaged) at Location SR7 for Mid-Ebb Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR7
Action Level
Limit Level

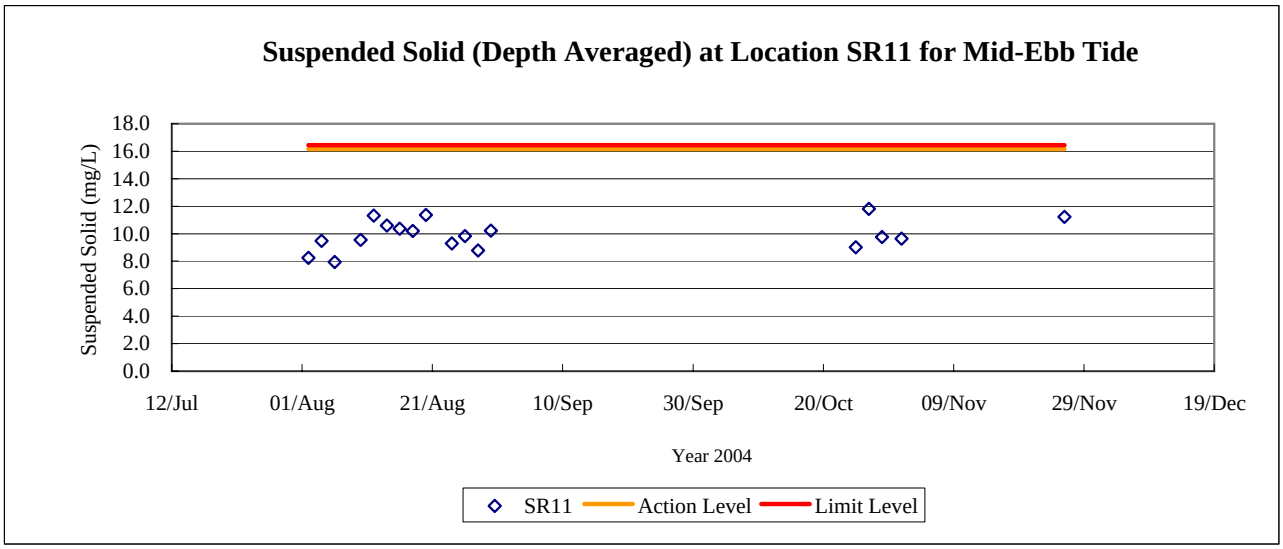

Suspended Solid at Location SR7 for Mid-Ebb Tide
Suspended Solid (mg/L)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR7
Action Level
Limit Level

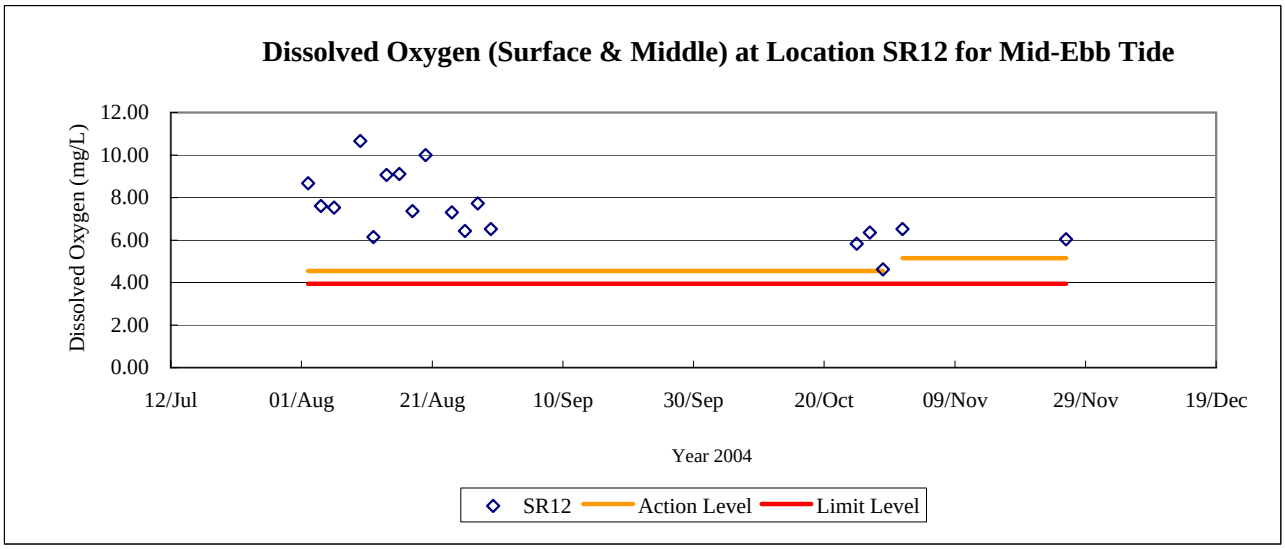

Suspended Solid (Depth Averaged) at Location SR10 for Mid-Ebb Tide
Suspended Solid (mg/L)
120.0
100.0
80.0
60.0
40.0
20.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR10
Limit Level

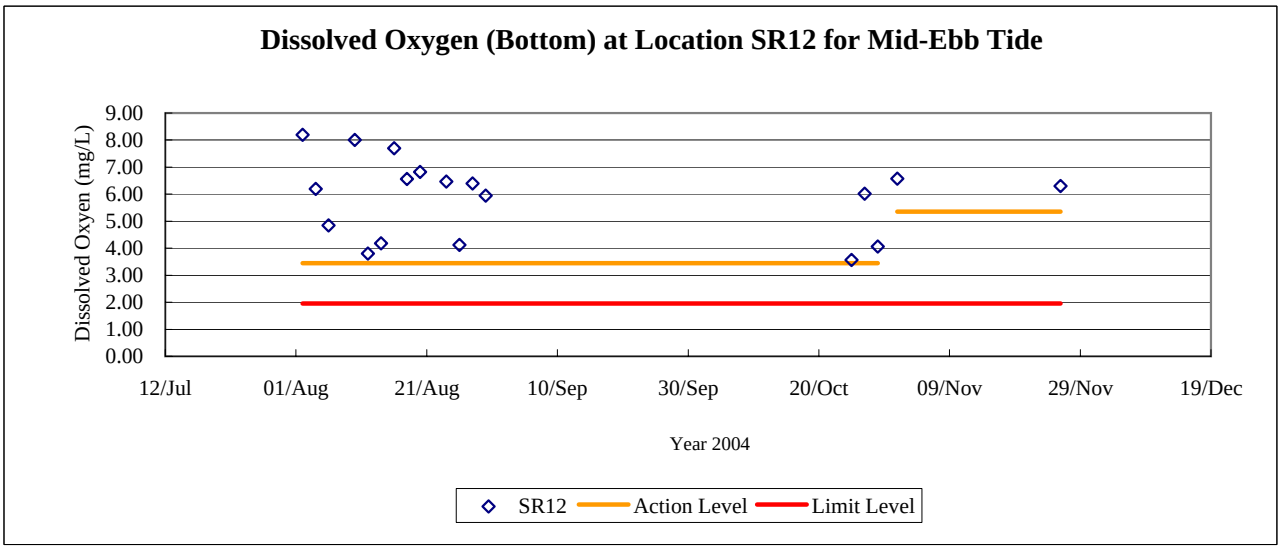

Dissolved Oxygen (Surface & Middle) at Location SR11 for Mid-Ebb Tide
Dissolved Oxygen (mg/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR11
Action Level
Limit Level

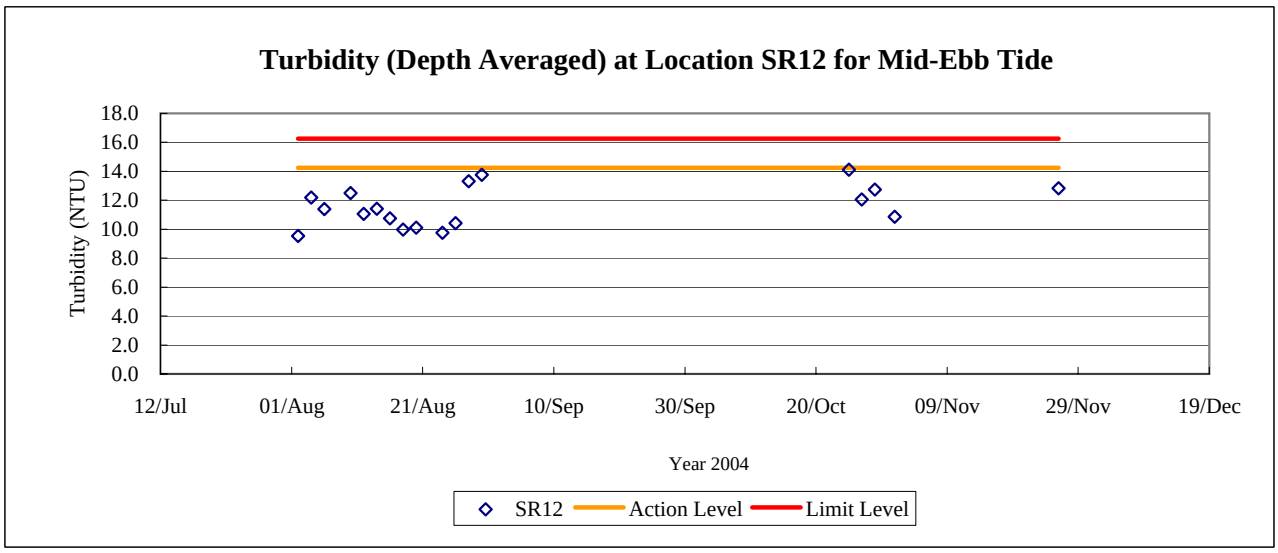

Dissolved Oxygen (Bottom) at Location SR11 for Mid-Ebb Tide
Dissolved Oxyen (mg/L)
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR11
Action Level
Limit Level

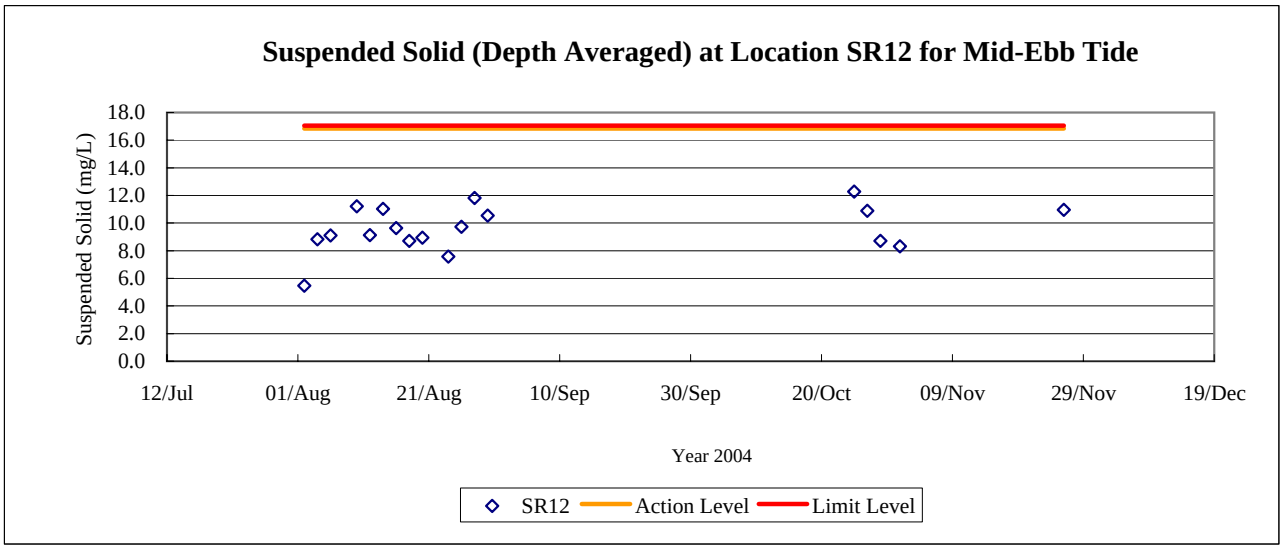

Turbidity (Depth Averaged) at Location SR11 for Mid-Ebb Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR11
Action Level
Limit Level

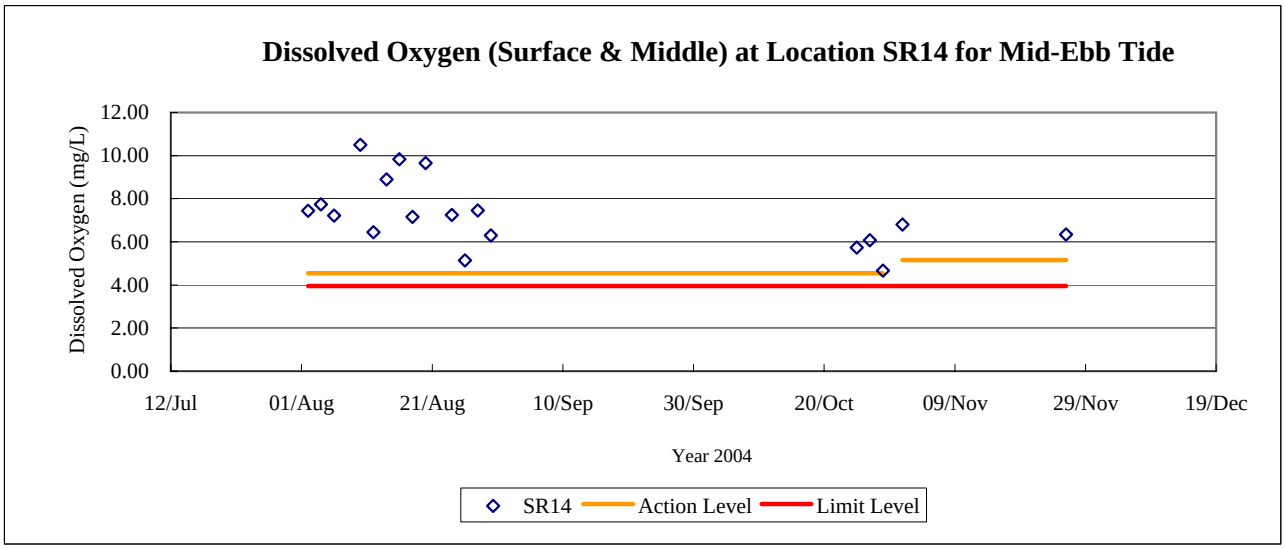

Suspended Solid (Depth Averaged) at Location SR11 for Mid-Ebb Tide
Suspended Solid (mg/L)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR11
Action Level
Limit Level

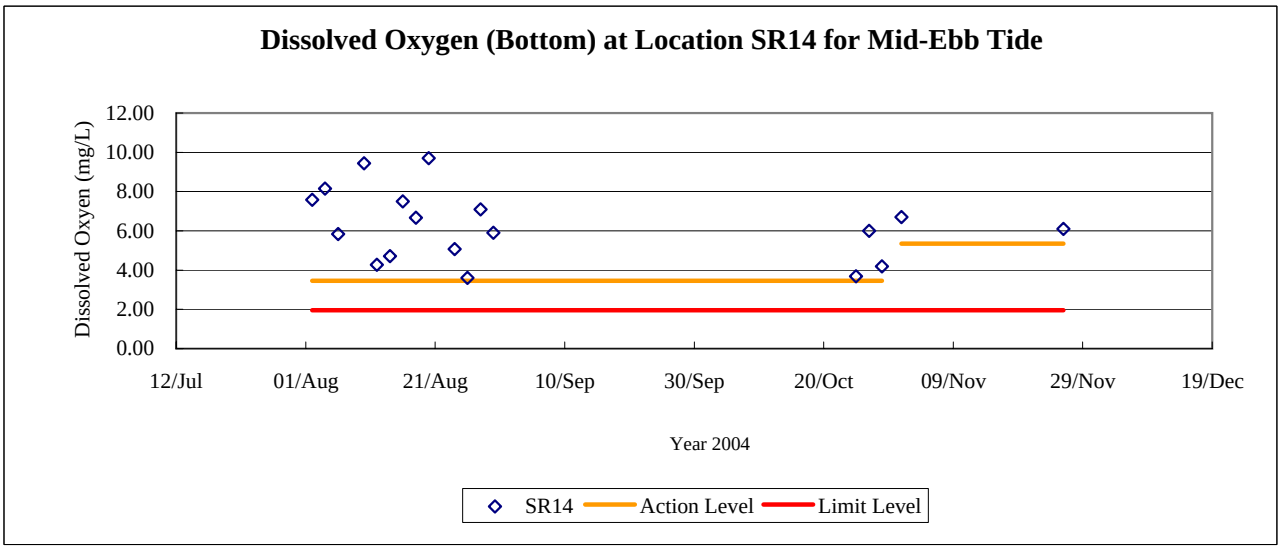

Dissolved Oxygen (Surface & Middle) at Location SR12 for Mid-Ebb Tide
Dissolved Oxygen (mg/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR12
Action Level
Limit Level

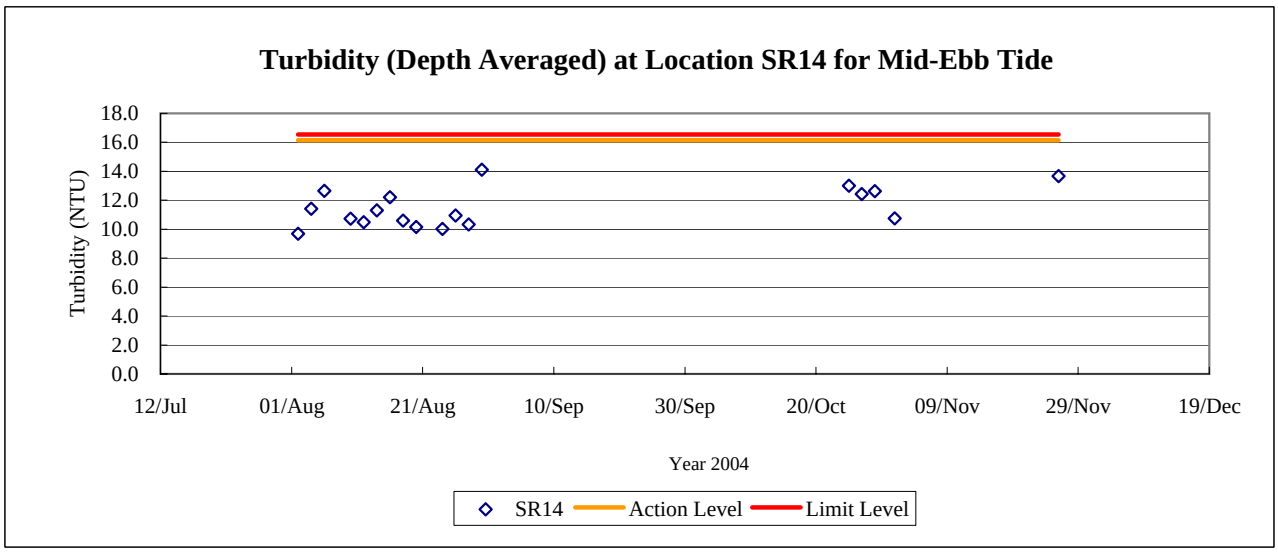

Dissolved Oxygen (Bottom) at Location SR12 for Mid-Ebb Tide
Dissolved Oxyen (mg/L)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR12
Action Level
Limit Level

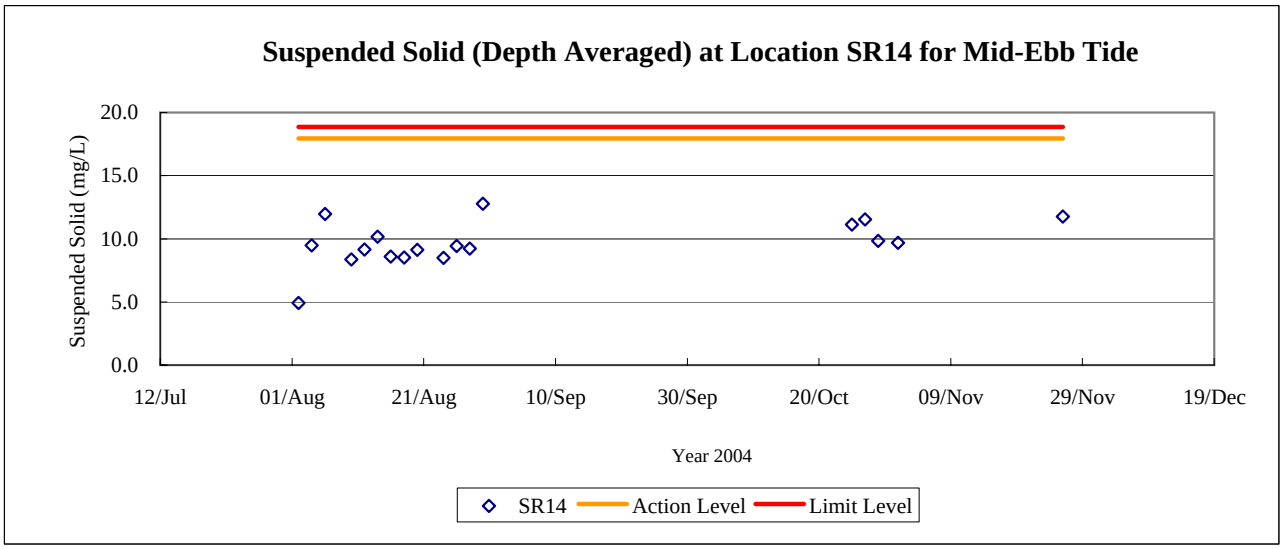

Turbidity (Depth Averaged) at Location SR12 for Mid-Ebb Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR12
Action Level
Limit Level

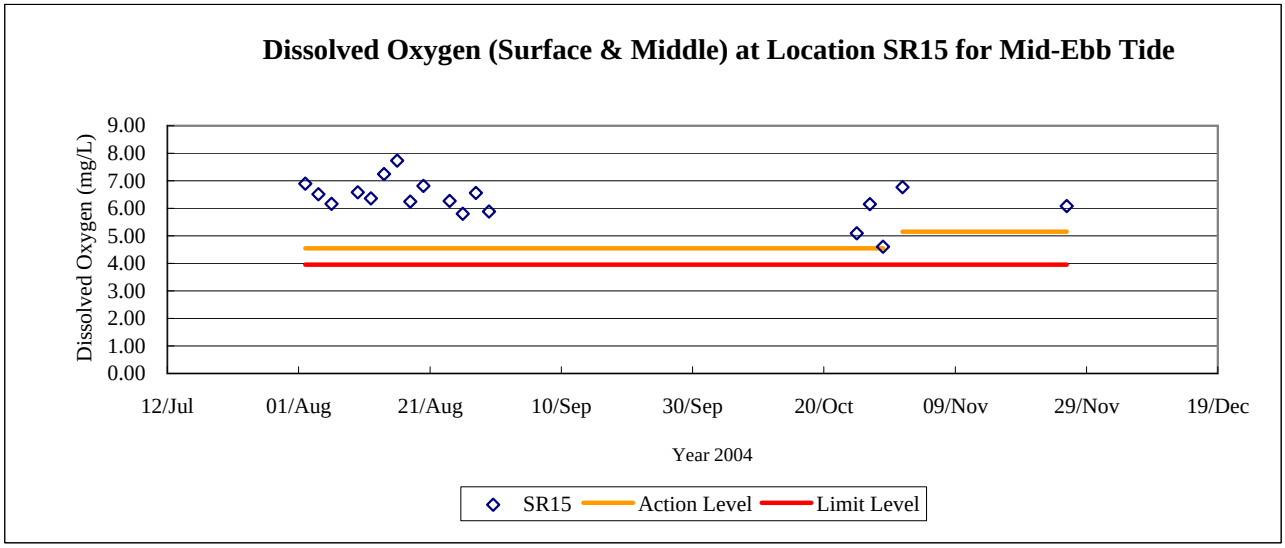

Suspended Solid (Depth Averaged) at Location SR12 for Mid-Ebb Tide
Suspended Solid (mg/L)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR12
Action Level
Limit Level

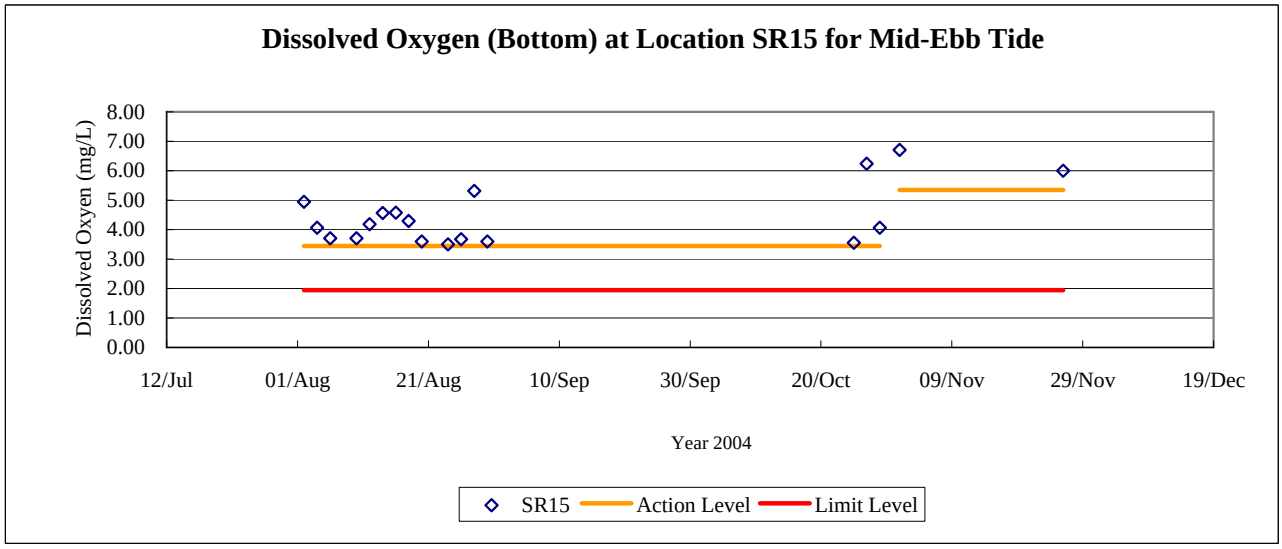

Dissolved Oxygen (Surface & Middle) at Location SR14 for Mid-Ebb Tide
Dissolved Oxygen (mg/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR14
Action Level
Limit Level

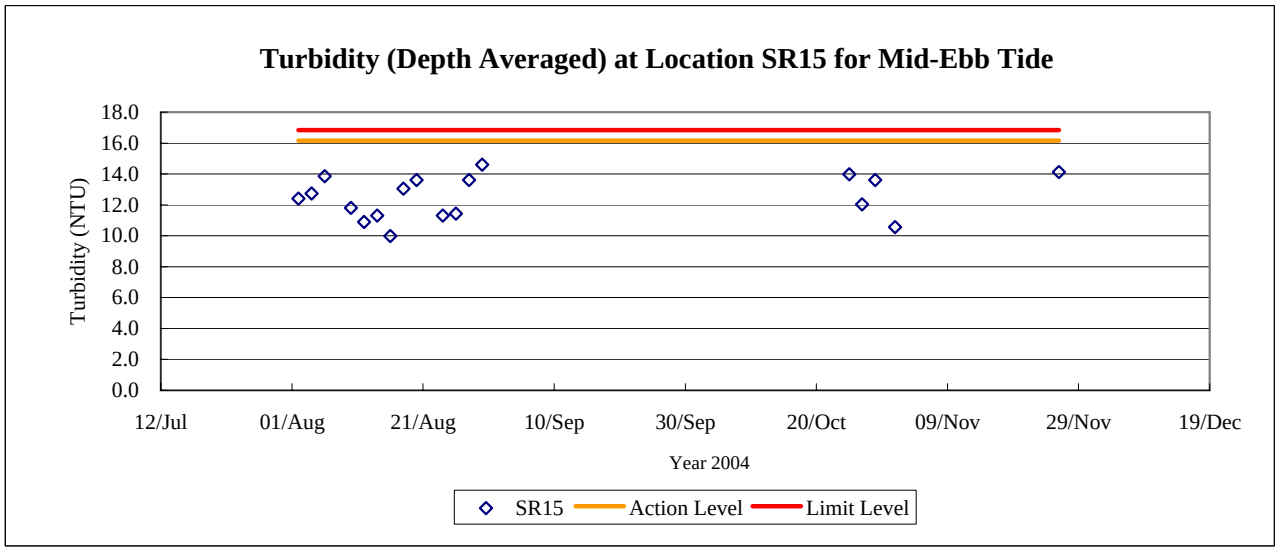

Dissolved Oxygen (Bottom) at Location SR14 for Mid-Ebb Tide
Dissolved Oxyen (mg/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR14
Action Level
Limit Level

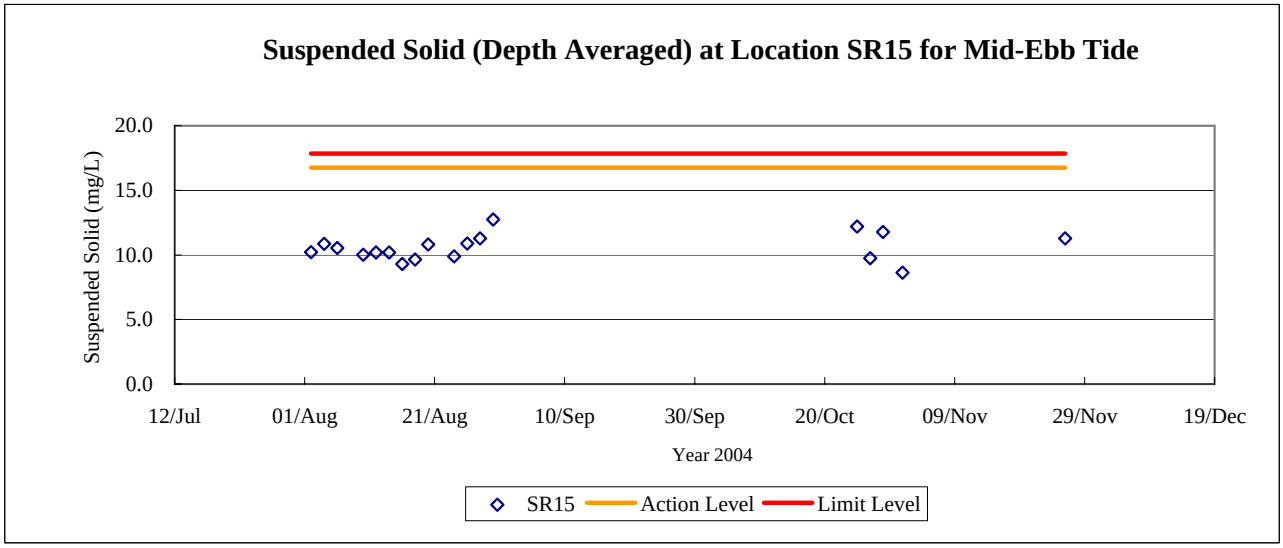

Turbidity (Depth Averaged) at Location SR14 for Mid-Ebb Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR14
Action Level
Limit Level

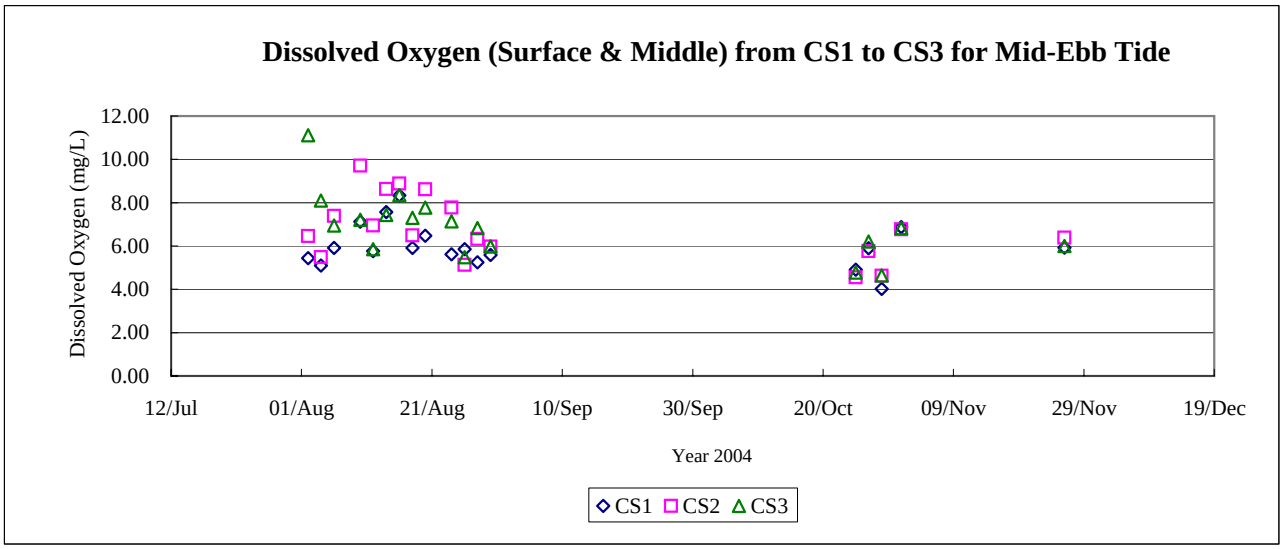

Suspended Solid (Depth Averaged) at Location SR14 for Mid-Ebb Tide
Suspended Solid (mg/L)
20.0
15.0
10.0
5.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR14
Action Level
Limit Level

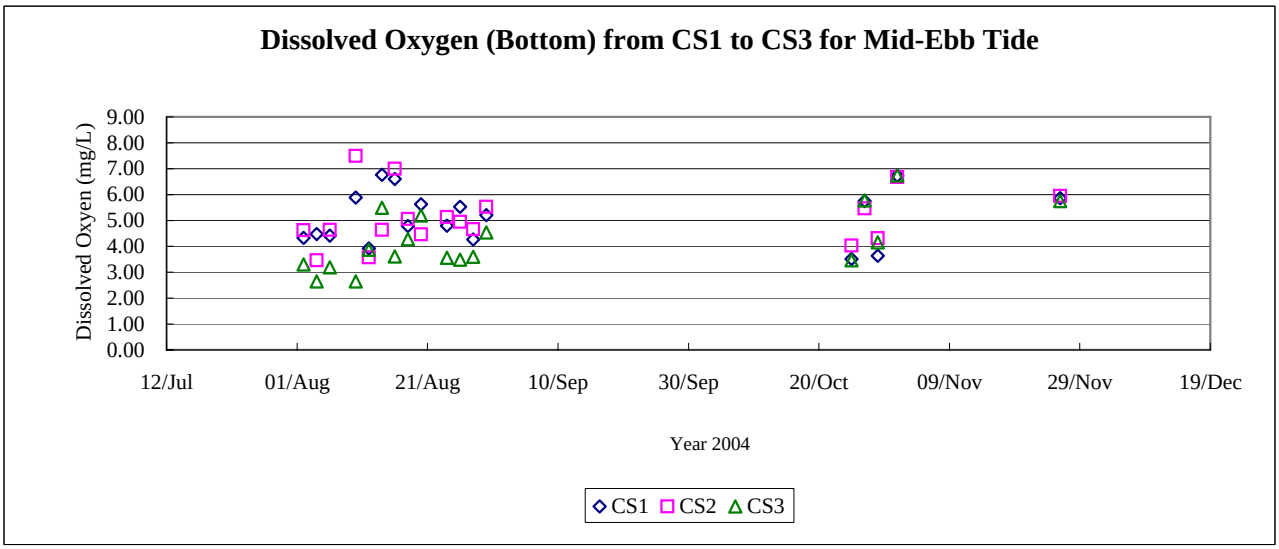

Dissolved Oxygen (Surface & Middle) at Location SR15 for Mid-Ebb Tide
Dissolved Oxygen (mg/L)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR15
Action Level
Limit Level

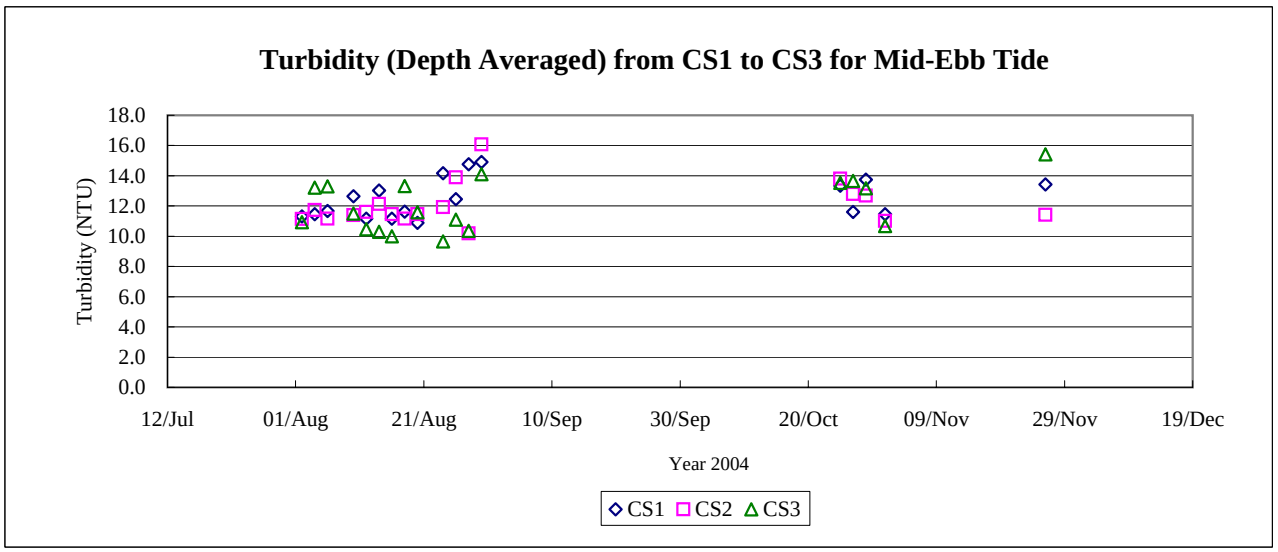

Dissolved Oxygen (Bottom) at Location SR15 for Mid-Ebb Tide
Dissolved Oxyen (mg/L)
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR15
Action Level
Limit Level

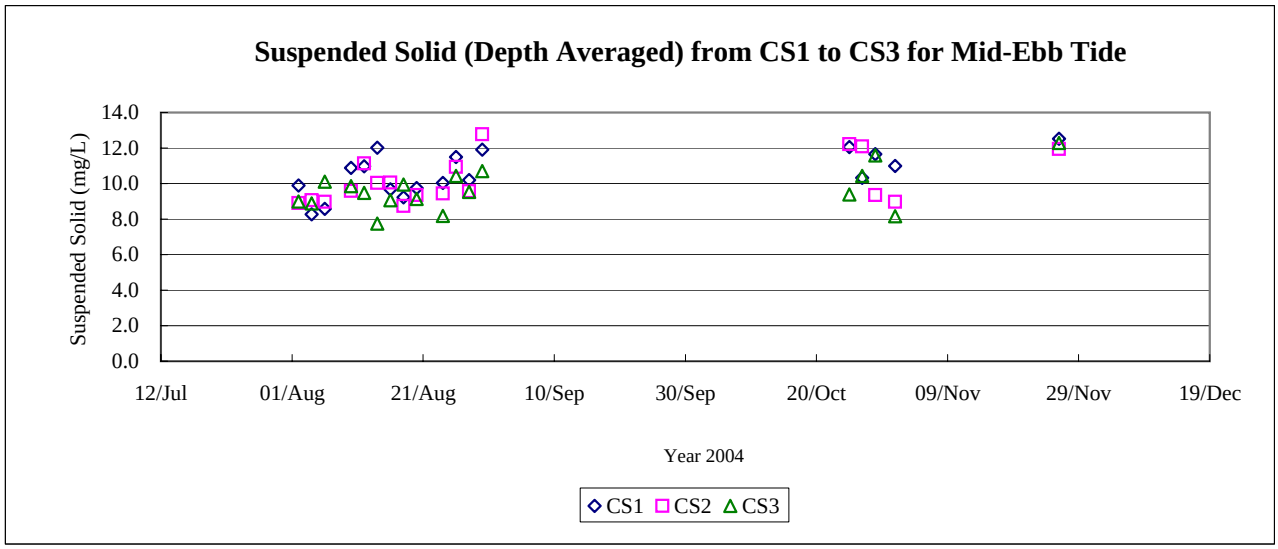

Turbidity (Depth Averaged) at Location SR15 for Mid-Ebb Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR15
Action Level
Limit Level


Suspended Solid (Depth Averaged) at Location SR15 for Mid-Ebb Tide
Suspended Solid (mg/L)
20.0
15.0
10.0
5.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
SR15
Action Level
Limit Level


Dissolved Oxygen (Surface & Middle) from CS1 to CS3 for Mid-Ebb Tide
Dissolved Oxygen (mg/L)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
CS1 CS2 CS3


Dissolved Oxygen (Bottom) from CS1 to CS3 for Mid-Ebb Tide
Dissolved Oxyen (mg/L)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
CS1 CS2 CS3


Turbidity (Depth Averaged) from CS1 to CS3 for Mid-Ebb Tide
Turbidity (NTU)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
CS1 CS2 CS3


Suspended Solid (Depth Averaged) from CS1 to CS3 for Mid-Ebb Tide
Suspended Solid (mg/L)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
12/Jul
01/Aug
21/Aug
10/Sep
30/Sep
20/Oct
09/Nov
29/Nov
19/Dec
Year 2004
CS1
CS2
CS3

Appendix F

Calibration Records and Laboratory QA/QC Results

Equipment Calibration Record

Equipment No.	YSI-6920-1	Equipment Description	YSI-6920 monitor
Calibration method reference	YSI calibration manual	Calibration equipment used (if any)	Nil

	pH	DO	Turbidity
Use of reference material (if any)	pH 7.00 & pH 10.00 Hach buffer std.	Nil	0 NTU & 100 NTU Formazin turbidity std.
Permissible tolerance of calibration	±0.12	±5%	±5%

Calibration Result

		pH		DO	Turbidity		
Date	Standard	**7.00**	**10.00**	**100**	**0**	**100**	Calibrated by
01/11/04	Before	7.01	10.02	97.6	0.6	100.8	M.M.Lee
	After	6.97	9.95	101.2	0.1	99.5	M.M.Lee
26/11/04	Before	7.03	9.92	102.4	0.7	102.7	M.M.Lee
	After	6.96	10.04	98.2	0.9	98.6	M.M.Lee
	Before						
	After						
	Before						
	After						
	Before						
	After						
	Before						
	After						
	Before						
	After						
	Before						
	After						
	Before						
	After						
	Before						
	After						
	Before						
	After						
	Before						
	After						
	Before						
	After						
	Before						
	After						
	Before						
	After						

Approved by: K.H.Cheung__ Date:___29/11/2004

SUMMARY OF QUALITY CONTROL DATA – QC SAMPLES RESULTS

Parameter	Control Limit	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value
Suspended Solids mg/L	89 – 103%	P0411A14	102%	P0411A28	93%	P0411A41	95%	P0411A56	92%	P0411A70	101%	P0411A83	93%	P0411B14	100%
		P0411B28	91%	P0411B41	95%	P0411B56	99%	P0411B70	93%	P0411B83	97%				

Total:12

SUMMARY OF QUALITY CONTROL DATA – BLANK RESULTS

Parameter	Control Limit	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value
Suspended Solids mg/L	<1	P0411A15	<1	P0411A29	<1	P0411A42	<1	P0411A57	<1	P0411A71	<1	P0411A84	<1	P0411B15	<1
		P0411B29	<1	P0411B42	<1	P0411B57	<1	P0411B71	<1	P0411B84	<1				

Total:12

SUMMARY OF QUALITY CONTROL DATA – DUPLICATE RESULTS

Parameter	Control Limit	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value
Suspended Solids mg/L	Exceed 20%	P0411A13	11.6	P0411A27	9.0	P0411A40	9.6	P0411A55	10.7	P0411A69	8.4	P0411A82	7.9	P0411B13	12.2
			10.5		10.1		10.7		9.0		9.7		8.5		11.6
		P0411B27	10.7	P0411B40	10.5	P0411B55	10.9	P0411B69	9.3	P0411B82	9.1				
			9.2		11.7		9.4		10.5		10.5				

Total:12

SUMMARY OF QUALITY CONTROL DATA – BLIND DUPLICATE RESULTS

Parameter	Control Limit	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value
Suspended Solids mg/L	Exceed 20%	P0411A05	11.1	P0411A11	12.2	P0411A20	10.4	P0411A25	10.9	P0411A33	11.4	P0411A38	7.6	P0411A47	8.0	P0411A53	11.7	P0411A62	10.6	P0411A67	10.8	P0411A75	8.7	P0411A80	9.0
			12.3		11.1		9.3		11.6		12.7		7.3		8.7		11.0		10.1		10.1		10.0		9.5
		P0411B05	9.5	P0411B11	13.4	P0411B20	12.3	P0411B25	11.6	P0411B33	10.5	P0411B38	9.3	P0411B47	9.5	P0411B53	11.3	P0411B62	11.8	P0411B67	10.2	P0411B75	9.3	P0411B80	9.4
			8.4		12.8		12.6		10.8		11.9		8.1		10.4		12.5		11.1		9.1		9.7		10.5

Total:24

Appendix G Event/Action Plans

Exceedance	ET Leader	IEC	Engineer	Contractor
Action level exceeded on one sampling day	Verbally inform the Contractor, and IEC. Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, Engineer and Contractor; Repeat measurement on next day of exceedance.	Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Discuss with Contractor the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Propose and discuss mitigation measures with Engineer; Implement the agreed mitigation measures.
Action level exceeded on more than one consecutive sampling day	Repeat in-situ measurements to confirm findings; Identify source(s) of impact; Inform Contractor and IEC; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measure with IEC, Engineer and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next day of exceedance.	Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Discuss with ET and Contractor on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Propose mitigation measures to Engineer within 3 working days and discuss with ET and Engineer; Implement the agreed mitigation measures.

Exceedance	ET Leader	IEC	Engineer	Contractor
Limit level exceeded on one sampling day	Verbally inform the Contractor, IEC and the EPD of the exceedance; Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measure with IEC, Engineer and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level.	Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Discuss with Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Propose mitigation measures to Engineer within 3 working days and discuss with Engineer; Implement the agreed mitigation measures.
Limit level exceeded by more than one consecutive sampling day	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform Contractor, IEC and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measure with IEC, Engineer and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Discuss with Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures; Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine works until no exceedance of the Limit Level.	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Propose mitigation measures to Engineer within 3 working days and discuss with Engineer; Implement the agreed mitigation measures.. As directed by the Engineer, to slow down or to stop all or part of the marine work

Appendix H

Site Audit Summary

The Hongkong Electric Co. Ltd.
Lamma Power Station Navigation Channel Improvement Project
Weekly Site Inspection Checklist

Inspection date: 1/4/06 Time: 09:30 a.m. Inspected By: ET: Andy Fok
Contractor: TERRAN LEUNG

Site: LPS - Navigation Channel Improvement

Weather

Condition	☐ Sunny	☑ Fine	☐ Overcast	☐ Hazy	☐ Drizzle	☐ Rain	☐ Storm	
Temperature	31 °C	Humidity	☐ High	☑ Moderate	☐ Low			
Wind	☐ Calm	☑ Light	☐ Breeze	☐ Strong				

GENERAL

Ref.	Checklist Condition	N/A	Yes	No	Unk	Remarks
EP 1.3	Is a copy of Environmental Permit together with all documents referred to in the permit kept in Engineers' and Contractors' offices for inspection at all sites/offices covered in the permit ?		✓			
EP 1.5	Is a copy of the most up-to-date Environmental Permit displayed at on the construction site at a convenient location for public information?		✓			

WASTE MANAGEMENT

Ref	Checklist Condition	N/A	Yes	No	Unk	Remarks
	Dredged Materials					
EM&A: 5.4	Does the contractor possess valid dumping permits for dredged marine mud and have them available for inspection?		✓			
EM&A: 5.4	Has the contractor kept a complete set of dumping records/ticketing system and made them available for inspection?		✓			
EM&A: 3.2.5	Are wastes disposed of at designated marine dumping sites approved by the Marine Fill Committee of the Civil Engineering Department?		✓			

WATER QUALITY & MARINE ECOLOGY

Ref	Checklist Condition	N/A	Yes	No	Unk	Remarks
EP: 3.2 EM&A: A1	Is dredging work prohibited at Working Zone BCs from February to April to protect Finless Porpoise during calving seasons?		✓			

Ref	Checklist Condition	N/A	Yes	No	Unk	Remarks
EP: 3.3 EM&A: A2	Do marine vessels avoid the Finless Porpoise habitat area when moving from and to disposal sites?		✓			
EM&A: A2	Is marine vessel speed subject to a maximum limit of 10 knots in southern Lamma waters?		✓			
EP: 3.4 EM&A: A4	Are grab dredger option and TSHD option prohibited to operate concurrently?		✓			
EP: 3.5 EM&A: C1	Is dredging work carried out in phases in accordance with the latest dredging schedule?		✓			
EP:3.5 EM&A: C2	Does each of the deployed grab dredgers have a grab capacity of no less than $8m^3$?		✓			
EP:3.5 EM&A: C3	Are cage-type silt curtains deployed for grab dredgers?		✓			
EP:3.5 EM&A: C3	Are the silt curtains maintained properly throughout the dredging operation?		✓			
EP: 3.5 EM&A: C4	Is it prohibited to operate more than 5 grab dredgers concurrently at anytime?		✓			
EM&A: D1	Is daily dredging volume spread as evenly as possible over the 24 hour period whenever practical?		✓			
EM&A: D1	Is special care taken during lowering and lifting grabs to minimize unnecessary disturbance to the seabed?		✓			
EM&A: D1	Do vessels have adequate clearance to the seabed?		✓			
EM&A: D1	Are barges fitted with tight fitting seals to their bottom openings to prevent leakage of material during loading and transportation?		✓			
EM&A: D1	Are grabs closed tightly to minimize loss of sediment during dredging		✓			
EM&A: D1	Is the descent speed of hoist controlled suitably low?		✓			
EM&A: D1	Are barges filled to a level, which ensures that materials do not spill over during loading and transportation?		✓			
EM&A: D1	Are large objects removed from the grab to avoid losses from partially closed grabs?	✓				
EM&A: D2	Have the vessel operators been fully briefed on the following: a) Possible presence of dolphins and porpoises in the vicinity of the Study Area and along routes to the Project Area; b) Rules for safe vessel operation around cetaceans; c) Slowing to 10 knots in the presence of cetaceans within the area marked on Figure B3 (Annex B of EM&A Manual); and d) The dumping of chemicals, rubbish, oils etc into the waters is strictly prohibited and enforced.		✓			

NOISE

Ref	Checklist Condition	N/A	Yes	No	Unk	Remarks
NCO	Are valid construction noise permits, if required, available for inspection?		✓			
EM&A: A3	Is the number of dredgers and operation conditions strictly followed as specified in the CNP.		✓			
NCO	Are conditions of construction noise permits, if any, for the relevant part(s) of the works implemented accordingly?		✓			

Abbreviation

EP: Environmental Permit (Environmental Permit No. EP-165/2003)
EM&A: EM&A Manual (Construction Phase)
NCO: Noise Control Ordinance
Unk: Unknown

Remark

NIL

Signatures

ET Member

(Name in Block letters:
FOK KAM FAI)

Contractor's Representative

(Name in Block letters:
LEUNG SIU HUNG

The Hongkong Electric Co. Ltd.
Lamma Power Station Navigation Channel Improvement Project
Weekly Site Inspection Checklist

Inspection date: 26/11/04 Time: 15:00 Inspected By: ET: Lamy Wong; Contractor: Stanley Leung

Site: LPS - Navigation Channel Improvement.

Weather

Condition: ☐ Sunny ☑ Fine ☐ Overcast ☐ Hazy ☐ Drizzle ☐ Rain ☐ Storm

Temperature: 26 °C Humidity: ☐ High ☑ Moderate ☐ Low

Wind: ☐ Calm ☑ Light ☐ Breeze ☐ Strong

GENERAL

Ref.	Checklist Condition	N/A	Yes	No	Unk	Remarks
EP 1.3	Is a copy of Environmental Permit together with all documents referred to in the permit kept in Engineers' and Contractors' offices for inspection at all sites/offices covered in the permit ?		✓			
EP 1.5	Is a copy of the most up-to-date Environmental Permit displayed at on the construction site at a convenient location for public information?		✓			

WASTE MANAGEMENT

Ref	Checklist Condition	N/A	Yes	No	Unk	Remarks
	Dredged Materials					
EM&A: 5.4	Does the contractor possess valid dumping permits for dredged marine mud and have them available for inspection?		✓			
EM&A: 5.4	Has the contractor kept a complete set of dumping records/ticketing system and made them available for inspection?		✓			
EM&A: 3.2.5	Are wastes disposed of at designated marine dumping sites approved by the Marine Fill Committee of the Civil Engineering Department?		✓			

WATER QUALITY & MARINE ECOLOGY

Ref	Checklist Condition	N/A	Yes	No	Unk	Remarks
EP: 3.2 EM&A: A1	Is dredging work prohibited at Working Zone BCs from February to April to protect Finless Porpoise during calving seasons?		✓			

Ref	Checklist Condition	N/A	Yes	No	Unk	Remarks
EP: 3.3 EM&A: A2	Do marine vessels avoid the Finless Porpoise habitat area when moving from and to disposal sites?		/			
EM&A: A2	Is marine vessel speed subject to a maximum limit of 10 knots in southern Lamma waters?		/			
EP: 3.4 EM&A: A4	Are grab dredger option and TSHD option prohibited to operate concurrently?		/			
EP: 3.5 EM&A: C1	Is dredging work carried out in phases in accordance with the latest dredging schedule?		/			
EP:3.5 EM&A: C2	Does each of the deployed grab dredgers have a grab capacity of no less than $8m^3$?		/			
EP:3.5 EM&A: C3	Are cage-type silt curtains deployed for grab dredgers?		/			
EP:3.5 EM&A: C3	Are the silt curtains maintained properly throughout the dredging operation?		/			
EP: 3.5 EM&A: C4	Is it prohibited to operate more than 5 grab dredgers concurrently at anytime?		/			
EM&A: D1	Is daily dredging volume spread as evenly as possible over the 24 hour period whenever practical?		/			
EM&A: D1	Is special care taken during lowering and lifting grabs to minimize unnecessary disturbance to the seabed?		/			
EM&A: D1	Do vessels have adequate clearance to the seabed?		/			
EM&A: D1	Are barges fitted with tight fitting seals to their bottom openings to prevent leakage of material during loading and transportation?		/			
EM&A: D1	Are grabs closed tightly to minimize loss of sediment during dredging		/			
EM&A: D1	Is the descent speed of hoist controlled suitably low?		/			
EM&A: D1	Are barges filled to a level, which ensures that materials do not spill over during loading and transportation?		/			
EM&A: D1	Are large objects removed from the grab to avoid losses from partially closed grabs?	/				
EM&A: D2	Have the vessel operators been fully briefed on the following: a) Possible presence of dolphins and porpoises in the vicinity of the Study Area and along routes to the Project Area; b) Rules for safe vessel operation around cetaceans; c) Slowing to 10 knots in the presence of cetaceans within the area marked on Figure B3 (Annex B of EM&A Manual); and d) The dumping of chemicals, rubbish, oils etc into the waters is strictly prohibited and enforced.		/			

NOISE

Ref	Checklist Condition	N/A	Yes	No	Unk	Remarks
NCO	Are valid construction noise permits, if required, available for inspection?		/			
EM&A: A3	Is the number of dredgers and operation conditions strictly followed as specified in the CNP.		/			
NCO	Are conditions of construction noise permits, if any, for the relevant part(s) of the works implemented accordingly?		/			

Abbreviation

EP: Environmental Permit (Environmental Permit No. EP-165/2003)
EM&A: EM&A Manual (Construction Phase)
NCO: Noise Control Ordinance
Unk: Unknown

Remark

Nil.

Signatures

ET Member

(Name in Block letters:
Larry Wong)

Contractor's Representative

(Name in Block letters:
STANLEY LEUNG)

Appendix I: Summary of EMIS

Mitigation Measures and their Implementation

EM&A Log Ref.	Mitigation Measures	Implementation Status
	MITIGATION MEASURES FOR BOTH GRAB DREDGER AND TSHD OPTIONS	
A1	No dredging should be carried out at Working Zone BCs from February to April.	C
A2	Vessel route between the dredging site and the disposal sites should avoid the Finless Porpoise habitat area and be subject to a maximum speed limit of 10 knots in southern Lamma waters as indicated in Figure B3 (Annex B of EM&A Manual).	C
A3	The number of dredgers and operation conditions specified in the applicable CNPs should be strictly followed. In applying for the CNPs, it should be ensured that the number of dredgers and operation conditions are compatible with the recommendations of this EIA.	C
A4	The grab dredger option and TSHD option should not be operated concurrently.	C
	MITIGATION MEASURES FOR TSHD OPTION ONLY	
B1	Dredging works should be carried out in phases in accordance with the programme, number of dredgers and maximum dredging rates specified in Table B4 (Annex B of EM&A Manual).	C
B2	There should not be more than one TSHD operating concurrently at any time.	N/A
	MITIGATION MEASURES FOR GRAB DREDGER OPTION ONLY	
C1	Dredging works should be carried out in phases in accordance with the programme, number of dredgers and maximum dredging rates specified in the latest dredging schedule.	C
C2	Each grab dredger to be deployed should have a grab capacity of no less than 8 m^3.	C
C3	Cage-type silt curtains as illustrated in Figure B1 (Annex B of EM&A Manual) should be deployed for grab dredgers. The silt curtains should be properly maintained during the dredging period.	C
C4	There should be no more than 5 grab dredgers operating concurrently at any time.	C
	GOOD SITE PRACTICE	
D1	Daily dredging volume should be spread as evenly as possible over the 24 hour period whenever practical. Special care should be taken during lowering and lifting grabs to minimize unnecessary disturbance to the seabed.	C
	Vessels used should have adequate clearance of the seabed.	C
	Barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material.	C
	Grabs should be tightly closed and hoist speed is suitably low.	C
	Barges should not be filled to a level which will cause overflow of materials during loading and transportation.	C

EM&A Log Ref.	Mitigation Measures	Implementation Status
D2	The vessel operators should be fully briefed on the following: • Possible presence of dolphins and porpoises in the vicinity of the Study Area and along routes to the Project Area; • Rules for safe vessel operation around cetaceans; • Slowing to 10 knots in the presence of cetaceans within the area marked on Figure B3 (Annex B of EM&A Manual); and • The dumping of chemicals, rubbish, oils etc into the waters	C

Remarks:

C - Compliance with mitigation measure
NC - Non-compliance with mitigation measure
N/A - Not Applicable