Gammon Construction Limited

Contract No. HY/2002/24

Deep Bay Link – Northern Section

Final EM&A Summary Report for Construction Phase

September 2007

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Version:	0	Date: 5 September 2007

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Date: 5 September 2007

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By Fax (2448 3361) and Post

Attention: Ir. Jackson Wong (Senior Resident Engineer)

Dear Ir. Wong,

Re: Environmental Permit No. EP-163/2003/G
Contract No. HY/2002/24 Deep Bay Link – Northern Section
EP Condition 1.9 Final EM&A Summary Report for Construction Phase

Reference is made to ET's e-mail correspondences enclosed with a copy of the Final EM&A Summary Report for Construction Phase and revised pages for the captioned project. We have no further comment on the captioned report.

We are pleased to inform you that the Construction Phase Final EM&A Summary Report for Deep Bay Link Northern Section, which had been certified by the Environmental Team Leader, is verified by IEC in compliance with Condition 1.9 of the Environmental Permit (No.EP-163/2003/G) of the project.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned or our Mr. Roy Leung if you have any queries.

Yours sincerely,

Billy Yu
Independent Environmental Checker

c.c. Mr. Y. T. Tang ENSR By Fax: 2891 0305

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EXECUTIVE SUMMARY

This is the Final Environmental Monitoring and Audit (EM&A) Summary Report for Construction Phase prepared by ENSR Asia (HK) Ltd. (formerly Maunsell Environmental Management Consultants Ltd.), the designated Environmental Team (ET), for the Project "Deep Bay Link – Northern Section". Majority of construction works were completed since June 2007. The construction phase environmental monitoring and audit (EM&A) programme was ceased on 18 June 2007. The post-project local stream water quality monitoring was conducted from 20 June 2007 to 18 July 2007.

This report summarizes the EM&A works performed in the period of the whole EM&A programme from 17 September 2003 to 18 July 2007.

Environmental Monitoring Works

Air Quality
Both of the 1-hour Total Suspended Particulates (TSP) and 24-hour TSP monitoring were conducted at one designated location from 18 September 2003 to 9 February 2007 subject to EPD's approval on the termination of air quality monitoring at this location on 8 February 2007. There were 32 Action Level and 3 Limit Level exceedances recorded and 1 of them were related to the Project's work.

Noise
Construction noise was monitored at two designated locations. Subject to EPD's approval on 8 February 2007, noise monitoring at AN3 was terminated on 9 February 2007, while noise monitoring at N4 was continued until 18 June 2007. There were 64 exceedances of Limit Level recorded. 3 valid complaints and 6 Limit Level exceedances were related to the Project's work.

Local Stream Water Quality
Local stream water quality monitoring was undertaken at 9 sampling locations (S1-S4, S6-S10) during the period from 18 September 2003 to 9 February 2007. Termination of part of construction phase EM&A programme was approved by EPD on 8 February 2007, local stream water quality monitoring at two sampling locations (S3 and S4) were carried on from 10 February 2007 to 18 June 2007. A post-project monitoring was conducted from 20 June 2007 to 18 July 2007.

A total of 1138 exceedances (164 Action Level and 974 Limit Level) were recorded for local stream water quality monitoring during the period from 18 September 2003 to 9 February 2007. No exceedance was recorded at S3 and S4 for the local stream water quality monitoring from 9 February 2007 to 18 June 2007. A total of 340 exceedances were due to the Project's work. These work-related exceedances were likely due to muddy surface runoff discharged into the stream, soil loss and silt deposited in the stream, or wastewater generated from haul road dampening activities. Post-project local stream water quality monitoring results were comparable to the baseline levels, i.e. the ambient conditions.

Coastal Water Quality
Coastal water quality monitoring was carried out under the EM&A programme of Hong Kong – Shenzhen Western Corridor (HK-SWC). Monitoring data of W1, W2, W15 and W16 were presented in this report. A total of 259 exceedances (242 Action Level and 17 Limit Level) were recorded for coastal water quality monitoring during the period from 15 October 2003 to 6 February 2007. All exceedances were concluded not due to the Project's works. While direct relationship between the works and the exceedances could not be established, the exceedances might have been due to variation of regional water quality.

Environmental Complaints and Prosecutions
There were 28 environmental complaints received during the reporting period. A total of 11 complaints were related to the Project's work. All valid complaints were properly followed up and rectified.

One summons and successful prosecution was made against the Project regarding an improper discharge into San Hang Nullah from the works area at Tsing Chuen Wai on 24 March 2005. The Contractor pledged guilty to the charge on 15 November 2005.

Five yellow forms were issued by EPD during the reporting period. The Contractor properly rectified the events addressed in yellow forms.

1. INTRODUCTION

Background

1.1 Maunsell Environmental Management Consultants Limited (MEMCL) (hereinafter called the "ET"), which changed the name to ENSR Asia (HK) Ltd. on 1 May 2007 was appointed by Gammon Construction Limited (hereinafter called the "Contractor") to undertake Environmental Monitoring and Audit (EM&A) for "Deep Bay Link – Northern Section" (hereinafter called the "Project"). Under the requirements of Section 4 of Environmental Permit EP-163/2003 and its variations, EM&A programme as set out in the EM&A Manual [2] is required to be implemented.

1.2 In accordance with the EM&A Manual [2], environmental monitoring of air quality, noise, local stream water quality and coastal water quality are required for the Project. The major construction period of the Project was 46 months from September 2003 to June 2007.

1.3 Deep Bay Link (DBL) is an expressway/trunk road of dual-3 lane standard with hard shoulders providing a strategic link between the proposed Hong Kong - Shenzhen Western Corridor (HK-SWC) at its landing point at Ngau Hom Shek and a proposed interchange with the Yuen Long Highway (YLH) and the proposed Route 10-North Lantau to Yuen Long Highway (R10-NLYLH) at Lam Tei. The layout of the DBL is provided in Figure 1.1.

2. PROJECT CHARACTERISTICS

Project Organization and Contacts of Key Management

2.1 The Project Proponent was Highways Department (HyD); the Engineer Representative (ER) was Ove Arup & Partners Hong Kong Limited; the Contractor was Gammon Construction Limited; the Independent Environmental Checker (IEC) was CH2M HILL Hong Kong Limited, and the ET was ENSR.

2.2 The responsibilities of respective parties are detailed in Section 1.4 of the EM&A Manual[2]. The contacts of key management for the Project are summarized in Appendix A.

2.3 An Organization Chart of the Project is provided in Figure 2.1.

Construction Activities

2.4 The major construction work was commenced on 17 September 2003 and completed in June 2007.

2.5 The major components of this Project are listed below:

Preparation works:
- Site Clearance
- Site investigation

Construction works:
- Form site access
- Utilities diversion
- Bored piling
- Construction of pier, pier head, pile cap, portal and kicker
- Excavation and backfilling
- Retaining wall and detention pond construction
- Pre-bored H-piles
- Soil nail construction
- Slope cutting
- Setting up of launching girder
- Segment erection
- Erection of form traveler and launching girder
- Installation of pugmill
- Contaminated soil treatment
- Parapet installation
- Medium barrier installation
- Drainage works
- Dismantling of form traveler
- Noise barrier erection
- Pipe jacking
- Raking Drain construction
- Asphalt paving
- Landscaping works
- Water mains and fire main works
- Road marking
- Fish pond 15 construction
- Erection of fencing
- Cleaning of manhole, U channel, pipeline and drainage pipe
- Construction of additional U channel
- Installation of road barrier
- Remedial works

2.6 A layout plan of the Project is provided in Figure 1.1.

3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Locations

3.1 The EM&A Manual [2] designates locations for the ET to monitor environmental impacts in terms of air quality, noise, local stream water quality and coastal water quality. The air quality, noise, local stream water quality and marine water quality monitoring stations for this Project are shown in Figure 3.1 to 3.4 respectively. Appendix B gives the details of the monitoring requirements.

Environmental Quality Performance Limits (Action and Limit Levels)

3.2 The environmental quality performance limits, i.e. Action and Limit levels (AL Levels) were derived from the baseline monitoring results [3] and/or other approaches as detailed in the EM&A Manual [2]. Should the measured environmental quality parameters exceed the AL Levels, the respective action plans would be implemented. The AL Levels for each environmental parameter are given in Appendix C.

Environmental Mitigation Measures

3.3 Relevant mitigation measures as recommended in the Project EIA Report [1] had been stipulated in the EM&A Manual for the Contractor to adopt. A list of mitigation measures is given in Appendix H.

4. MONITORING RESULTS

4.1 A summary of monitoring conducted in the reporting period are summarized in Table 4.1.

Table 4.1 Summary of monitoring conducted in the reporting period

1-hour Total Suspended Particulates (TSP) monitoring	657 sessions
24-hour TSP monitoring	219 sessions
Daytime noise monitoring at AN3	179 sessions
Daytime noise monitoring at N4	197 sessions
Evening noise monitoring at AN3	140 sessions
Evening noise monitoring at N4	140 sessions
Night time Noise monitoring at AN3	10 sessions
Night time Noise monitoring at N4	10 sessions
Holiday noise monitoring at AN3	140 sessions
Holiday noise monitoring at N4	140 sessions
Local Stream Water Quality Monitoring at S1, S2, S6-S10	521 sessions
Local Stream Water Quality Monitoring at S3 and S4	575 sessions
SWC - Marine Water Quality Monitoring (W2 & W16)	507 sessions
SWC - Marine Water Quality Monitoring (W1 & W15)	509 sessions

* For some of the sessions, some of the monitoring locations were dry in winter.

Air Quality

4.2 All the 1-hour TSP monitoring results complied with the AL Levels and no exceedance was recorded during the period from 18 September 2003 to 8 February 2007.

4.3 A total of 35 exceedances (32 Action Level and 3 Limit Level) for 24-hour TSP were recorded and 1 Action Level exceedance was related to the Project's work. Table 4.2 summarizes the number of air quality exceedances.

Table 4.2 Summary of air quality exceedances

Parameters	1-hour TSP		24-hour TSP		Total
	Action	Limit	Action	Limit	
AN3	0 (0)	0 (0)	32 (1)	3 (0)	35 (1)

*Remarks: ( ) exceedances related to the Project's work.

4.4 One exceedance recorded on 6 October 2004 was considered partially due to the Project's work. The identified dust source was the generation of fugitive dust by dump trucks movements at Tsing Chuen Wai.

4.5 Graphical presentations of both 1-hour TSP and 24-hour TSP monitoring results during the period from 18 September 2003 to 9 February 2007 are provided in Appendix D.

4.6 It was observed from the graphs that higher TSP levels were recorded between November and February of the next year in each year, particular in 2003 and 2004. Such elevation of TSP levels was likely triggered by the elevated ambient dust or general air quality pollution level during dry season. In fact, as the baseline monitoring for air quality was carried out in August 2003, during which the weather condition was mainly wet, the baseline TSP level was relatively low. Upon completion of most construction works after May 2006, the TSP levels gradually returned to the baseline level and much dominated by the change in ambient air quality and weather condition.

Noise

4.7 All measured daytime noise monitoring results at AN3 were below the Limit Level during the reporting period from 18 September 2003 to 8 February 2007.

4.8 Termination of part of construction phase EM&A programme was approved by EPD on 8 February 2007. Monitoring of noise level at N4 was carried on during the period from 9 February 2007 to 18 June 2007. All measured daytime noise monitoring results at N4 were below the Limit Level.

4.9 There were 51 exceedances for night time noise monitoring, 13 exceedances for holiday noise monitoring and no exceedance for evening time noise monitoring. Table 4.3 summarizes the number of noise level exceedances. The graphical presentations of the noise monitoring results are provided in Appendix E.

Table 4.3 Summary of noise exceedances

Time Period	Stations	No. of Limit Level Exceedances*	No. of Action Level Exceedances#	Total
Daytime (0700 – 1900)	AN3	0	2(2)	2(2)
	N4	0	0	0
Evening Time (1900 – 2300)	AN3	0	0	0
	N4	0	0	0
Night Time (2300 – 0700 of Next Day)	AN3	21(6)	1(1)	22(7)
	N4	30(0)	0	30(0)
Holiday Daytime	AN3	0	0	0
	N4	13(0)	0	13(0)
Total	AN3	21(6)	3(3)	24(9)
	N4	43(0)	0(0)	43(0)

*Remarks: ( ) exceedances related to the Project's work.
#Remarks: Only valid compliant was regarded as Action Level exceedance.

4.10 All exceedances were recorded during the aforementioned restricted hour periods, particularly the night time period. Actually, the Limit Level of 50dB(A) during this period is much more stringent than the normal daytime or even the evening time and background sound levels at the stations already exceeded it. Therefore, the noise levels as measured during the monitoring events produced exceedances. Yet, the six exceedances (3 x Leq-5 mins) recorded at AN3 on 27 May 2004 and 10 August 2004 were considered due to night-time construction works at Tsing Cheun Wai, which complied with the valid CNP conditions. No specific mitigation measure was thus applicable.

4.11 Other than the Limit Level exceedances, there were 6 noise complaints received. Yet, only 3 of them were considered Project's related and considered as triggering the Action Level exceedance. In these 3 noise complaints, the Contractor did not violate the Noise Control Ordinance (NCO) and there was no Limit Level exceedance recorded. Details of noise complaints are given in Appendix J.

4.12 It was observed from the graphs that higher noise levels were recorded during early stage of the construction works for daytime and during the middle stage of the construction works for evening time noise monitoring. The graphs showed clearly that all Limit Level exceedances were recorded for night time and holiday noise monitoring from the period of May 2004 to July 2005. Upon completion of most construction works, noise levels were consistently lower than Limit Level.

Local Stream Water Quality

4.13 In accordance with the EM&A Manual [2], local stream water quality monitoring had to be carried out at 10 sampling locations (S1-S10) three times per week. Parameters including dissolved oxygen (DO), turbidity and suspended solids (SS) were monitored for stations S1-S4 and S6-S10 only.

4.14 The stream leading up to S5 was not accessible due to dense vegetation and steep landscapes. Besides it appeared that the proposed stream leading up to S5 might not be in the same water body as its downstream counterpart (S6). Therefore, no local stream water quality monitoring was carried out at S5.

4.15 Construction phase local stream water quality monitoring at 9 sampling locations (S1-S4, S6-S10) were carried out from 18 September 2003 to 8 February 2007. Termination of part of construction phase EM&A programme was approved by EPD on 8 February 2007, local stream water quality monitoring at

two sampling locations (S3 and S4) were carried on from 9 February 2007 to 18 June 2007. There were a total of 1138 water quality exceedances, in which 164 Action Level and 974 Limit Level exceedances were recorded. Among these exceedances, there were 532 of DO level, 287 of turbidity and 319 of SS exceedances. Table 4.4 summarizes the number of local stream water quality exceedances.

Table 4.4 Summary of local stream water quality exceedances

Monitoring Station	Exceedance Level	Parameters			
		DO	Turbidity	SS	Total
S2	Action	49 (6)	9 (1)	7 (1)	65 (8)
	Limit	25 (7)	69 (28)	93 (27)	187 (62)
S4	Action	0 (0)	0 (0)	5 (0)	5 (0)
	Limit	23 (1)	34 (12)	35 (13)	92 (26)
S6	Action	65 (19)	2 (0)	3 (0)	70 (19)
	Limit	112 (23)	94 (69)	89 (56)	295 (148)
S8	Action	0 (0)	1 (0)	11 (1)	12 (1)
	Limit	110 (1)	24 (2)	15 (1)	149 (4)
S10	Action	0 (0)	6 (2)	6 (1)	12 (3)
	Limit	148 (18)	48 (26)	55 (25)	251 (69)
Total	Action	114 (25)	18 (3)	32 (3)	164 (31)
	Limit	418 (50)	269 (137)	287 (122)	974 (309)

*Remarks: ( ) exceedances related to the Project's work.

4.16 Termination of part of construction phase EM&A programme was approved by EPD on 8 February 2007. Local stream water quality monitoring at only two sampling locations (S3 and S4) were carried on during the period from 9 February 2007 to 18 June 2007. No exceedance was recorded during this monitoring period.

4.17 A total of 340 exceedances (75 of DO level, 140 of turbidity and 125 of SS) were due to the Project's works during the period. They were likely due to muddy surface runoff discharged into the stream, soil loss and silt deposited in the stream or wastewater generated from haul road dampening activities. All work-related exceedances were recorded from October 2003 to September 2005, during which most construction activities were undertaken. As the scale of construction works reduced in 2006, there has been no work-related exceedance recorded since October 2005.

4.18 A post-project local stream water quality monitoring was carried out for 4 weeks from 20 June 2007 to 18 July 2007 after completion of construction. Monitoring was not carried out at S6 and S9 since the stream was dried out at S6 and the access was blocked at S9 after the operation of Ha Tusen Weigh Station. The monitoring results obtained from other monitoring stations were comparable to the baseline levels, i.e. the ambient conditions. The monitoring data are presented in Appendix F.

4.19 Graphical presentations of all the monitoring results are provided in Appendix F.

4.20 It could be observed from the graphs that there was a greater fluctuation in SS and turbidity during the period from April 2004 to November 2004 and from July 2005 to October 2005 during which was the peak construction period. However, most SS and turbidity were comparable to those of the baseline. Those SS and turbidity exceedances were considered as the surface runoff and muddy water discharged into the stream which directly related to the Project.

4.21 As shown on the graphs showing DO at different monitoring stations, a seasonal trend could be observed. It was noted that higher DO levels were recorded during winter time, with crests usually happened from September to November of each year.

4.22 Upon completion of construction works, the local stream water quality gradually returned within the baseline levels. The 4-week post-project local stream water quality monitoring results as 1-20 mg/L of SS, 3-7.5 mg/L of turbidity, 4.1-7.1mg/L of Dissolved Oxygen and 43.5-79.6% of DO saturation were comparable to the baseline levels (1-391 mg/L of SS, 1.14-276 mg/L of turbidity, 1.95-7.88 of DO and 26.5-103.6% of DO saturation) showing a return to the ambient conditions.

Coastal Water Quality

4.23 Monitoring of coastal water quality in Deep Bay was undertaken by the Environmental Team of Hong Kong – Shenzhen Western Corridor (HK-SWC). As required by the EM&A Manual, monitoring results collected at stations W1, W2, W15 and W16 were required to analyse the coastal water quality impact from the Project during the period from 15 October 2003 to 6 February 2007.

4.24 There were a total of 259 water quality exceedances, in which 242 Action and 17 Limit Level exceedances respectively, recorded from the monitoring events during the period from 15 October 2003 to 6 February 2007. Among these exceedances, there were 147 DO level, 49 of turbidity and 63 of SS exceedances. All exceedances were concluded not due to the Project's work. The number of exceedances at each monitoring station is summarized in Table 4.5.

Table 4.5 Summary of coastal water quality exceedances

Tide	Station	Exceedance Level	Dissolved Oxygen	Turbidity	Suspended Solids	Total
Mid-Flood	W1	Action	44	4	10	58
		Limit	0	0	0	0
	W15	Action	40	18	13	71
		Limit	0	5	8	13
Mid-Ebb	W2	Action	32	4	6	42
		Limit	0	0	1	1
	W16	Action	31	17	23	71
		Limit	0	1	2	3
TOTAL		**Action**	**147**	**43**	**52**	**242**
		Limit	**0**	**6**	**11**	**17**

4.25 Graphical presentations of all the monitoring results are provided in Appendix G.

4.26 ET investigated the possible reasons for each exceedance. In fact, all of them were evaluated not related to the Project's activities. As the wastewater and surface runoff generated from the Project was sufficiently treated by the large sedimentation ponds located at Ngau Hom Shek before discharge into Deep Bay, the effluent was usually in low SS and hence turbidity levels. Regarding DO exceedances, they were less related to the construction impacts. In reviewing the reasons of these exceedances, they were likely due to poor ambient water quality around the monitoring stations and potential local discharges from the nearby villages or poultry farms.

4.27 It could be observed from the graphs that there was a greater fluctuation in SS and turbidity from the end of 2003 to end of 2004, which was likely correlate to the marine construction of adjacent project. However, most SS and turbidity levels were comparable to those of the baseline. For the most cases, high levels of SS and turbidity, and occasion low levels of DO recorded at W1, W2, W15 and W16 were caused by poor regional water quality and/ or local water quality impact which were not related to the Project.

5. AUDIT RESULTS

Implementation Status of Environmental Mitigation Measures

5.1 The Contractor implemented mitigation measures to minimize the environmental impacts due to construction activities. Regarding a few minor observations as noted during ET's site inspections, the Contractor rectified most of the problems and no major environmental deficiency was induced.

5.2 The implementation status of environmental mitigation measures (EMIS) is given in Appendix H.

Status of Environmental Licensing and Permitting

5.3 Environmental licenses and permits including Environmental Permit for the Project, construction noise permit and effluent discharge license were in place and valid during the Construction Phase. A summary status of licences and permits is given in Appendix I.

Advice on Solid and Liquid Waste Management Status

5.4 The solid waste generated from the Project included inert and non-inert C&D waste, chemical waste, excavated material, site clearance waste and general refuse. Table 5.1 summarizes the actual waste generated throughout the construction period.

Table 5.1 Actual Waste Generation throughout the Construction Period

Waste Type	Examples	Amount	Disposal Locations
Site clearance waste	Vegetation, refuse on land	5,409 m^3	WENT Landfill
Excavated material	Rock and soil	36,956 m^3	Tuen Mun Area 38, WENT Landfill
Public fill (inert)	Concrete, brick, aggregates	12,401 m^3	Tuen Mun Area 38
C & D waste (non-inert)	Plastic, wood and bamboo	6,194 m^3	WENT Landfill
Chemical waste	Used oil, spent solvent	1,990 L	Chemical Waste Treatment Centre
General refuse	Food and packaging waste, office waste	5,857 m^3	WENT Landfill

6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

Summary of Exceedances

6.1 All measured 1-hour TSP concentrations in the reporting period were below the Action and Limit Levels.

6.2 For 24-hour TSP monitoring, a total of 32 Action Level and 3 Limit Level exceedances were recorded in the reporting period. It was concluded that only 1 exceedance of Action Level was due to the Project's work.

6.3 For the construction noise monitoring, a total of 64 Limit Level exccedances were recorded in the reporting period. It was concluded that 6 of them were due to the Project's work. Three Action Level exceedances for noise monitoring were recorded as 3 valid complaints were received during the reporting period.

6.4 For local stream water quality monitoring, a total of 1138 exceedances (164 Action Levels and 974 Limit Levels) were recorded in the reporting period. It was concluded that 340 exceedances were due to the Project's work.

6.5 For coastal water quality monitoring, a total of 259 exceedances (242 Action Levels and 17 Limit Levels) were recorded in the reporting period. All exceedances were concluded not due to the Project's work.

Review of the Reasons for and the Implications of Non-compliance

6.6 No exceedance of Action or Limit Level for 1-hour TSP measurement was recorded in the reporting quarter.

6.7 Regarding the exceedances recorded for 24-hour TSP concentration in the reporting period, only 1 exceedance was considered partially due to the generation of fugitive dust by dump trucks movements at Tsing Chuen Wai on 6 October 2004.

6.8 All the 13 exceedances for holiday daytime noise monitoring were concluded not due to the Project's work. They were mainly due to the background sound levels.

6.9 Regarding the Limit Level exceedances recorded for night time noise monitoring in the reporting period, six of them were related to the Project's work on 27 May 2004 and 10 August 2004. These exceedances were considered due to night-time construction works at Tsing Chuen Wai, which complied with the valid CNP conditions. No specific mitigation measures was thus applicable.

6.10 Three valid noise complaints were received during the reporting period. Details of the complaints are given in Appendix J.

6.11 For local stream water quality monitoring, only 340 exceedances (75 of DO level, 140 of turbidity and 125 of SS) were due to the Project's works during the reporting period. They were likely due to muddy surface runoff discharged into the stream, soil loss and silt deposited in the stream or wastewater generated from haul road dampening activities.

6.12 All the 259 exceedances for coastal water quality monitoring were concluded not due to the Project's work. They were likely due to poor regional water quality and/ or local water quality impact which were not related to the Project.

6.13 These work related exceedances (24-hour TSP, night time noise and local stream water quality) were short in duration. The Contractor generally implemented the required mitigation measures to rectify the environmental impacts. There was thus no long term implication to the environment.

Summary of Actions Taken

6.14 The Contractor generally implemented all the required mitigation measures to suppress the environmental impacts.

6.15 One exceedance for air quality was concluded partially due to the Project's work. The Contractor had stepped-up the frequency of water spraying programme to rectify the problem. All other exceedances were concluded not due to works. No further action was required.

6.16 Other than the limit level exceedances, there were 6 noise complaints received. Yet, only 3 of them were considered project related, in which the Contractor did not violate the Noise Control Ordinance (NCO) and there was no limit exceedance recorded. Details of noise complaints refer to Appendix J. While most complaints were made against the construction works during restricted hours, site records demonstrated that the construction activities were complied with the CNP condition. No further action was thus required.

6.17 A total of 340 exceedances (75 of DO level, 140 of turbidity and 125 of SS) for local stream water quality were concluded due to the Project's work. The Contractor generally cleaned the accumulated silt more frequently and enhanced the performance of silt trap in order to rectify the problem. All other exceedances were concluded not due to works. No further action was required.

6.18 As all the 259 exceedances for coastal water quality monitoring were concluded not due to the Project's work, no further action was required.

7. COMPARISON OF EM&A DATA WITH EIA PREDICTION

1-hour TSP and 24-hour TSP Monitoring

7.1 The environmental monitoring data collected during the construction period were generally in line with the prediction of Deep Bay Link – Northern Section Environmental Impact Assessment (EIA) Report [1] / Deep Bay Link – Northern Section Baseline Monitoring Report [3] as the monitoring results were within the acceptable levels as stipulated in the EIA report [1].

Noise Monitoring

7.2 All the daytime noise monitoring results were below the Limit Levels. The trend of daytime L_{eq} showed no noticeable noise impact from the Project during the reporting period and all daytime noise monitoring results were in line with the prediction in the EIA Report [1].

Local Stream Water Quality Monitoring

7.3 Except the occasional exceedances of local stream water quality monitoring, the environmental monitoring data collected during the construction period were generally in line with the baseline condition as shown in the Baseline Monitoring Report [3] as the monitoring results were within the acceptable levels as stipulated in this report. The post-construction monitoring results also showed a return to the ambient conditions, as the monitoring results were comparable to the baseline levels.

Coastal Water Quality Monitoring

7.4 There was no project related exceedance. The environmental monitoring data collected during the construction period were generally in line with the prediction of water quality impact assessment for the EIA Report [1] as the monitoring results were within the acceptable levels as stipulated in this report.

Review of Environmental Monitoring Methodology and EM&A Programme

7.5 The environmental monitoring methodologies and procedures were regularly reviewed by the ET. No modification to the existing monitoring methodology was made during the construction period.

7.6 The EM&A programme, the effectiveness and efficiency of the mitigation measures were successful during the construction period.

Environmental Acceptability of the Project

7.7 Even though 1138 exceedances of local stream water quality, 259 exceedances of coastal water quality, 35 exceedances of air quality and 67 exceedances of noise limit level were reported. 97% of air quality exceedance, 87% of noise level exceedance, 70% of local stream water quality exceedance and all exceedance of coastal water quality were concluded not related to the Project's work. The environmental monitoring results indicated that the construction activities in general complied with the relevant environmental requirements and were environmentally acceptable.

8. ENVIRONMENTAL COMPLAINTS

8.1 All complaints were handled in accordance with the EM&A Manual [2]. The complaint handling procedure is provided in Appendix J.

8.2 There were 28 complaints received during the reporting period. The complaints were mainly about air quality (particularly dust), noise and water quality problems. The Contractor was notified of all these complaints. 11 of the complaints were project related and were followed up and rectified. Regarding the invalid complaints, the Contractor had maintained sufficient mitigation measures to prevent them from happening.

8.3 Summary record of the complaints, investigation and follow-up actions undertaken are provided in Appendix J.

9. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

9.1 One summons and successful prosecution was made against the Project since commencement. During EPD's inspection on 24 March 2005, a pink form was issued to the Contractor regarding an improper discharge into San Hang Nullah from the works area at Tsing Chuen Wai. The Contractor was later summoned and prosecuted under the Water Pollution Control Ordinance. The Contractor pledged guilty to the charge during the court appearance on 15 November 2005.

9.2 There were 5 yellow forms issued by EPD during the reporting period. The Contractor properly rectified the events addressed in yellow forms. Summary records of the yellow forms are provided in Appendix K.

10. COMMENTS AND CONCLUSIONS

10.1 The ET carried out air quality, noise, local steam water quality, coastal water quality monitoring and weekly site inspection in accordance with the EM&A Manual [2].

10.2 No exceedance of AL Levels for 1-hour TSP monitoring was recorded in the reporting period.

10.3 There were 35 exceedances for 24-hour TSP concentration recorded in the reporting period. Mitigation measures for the construction dust were generally implemented. It was concluded that only one exceedance was due to the Project's work and the exceedance was rectified.

10.4 There were 64 exceedances for noise monitoring recorded in the reporting period. Only 3 valid noise complaints (Action Level exceedances) and 6 Limit Level exceedances were related to the Project's work. Mitigation measures for the construction noise were generally implemented.

10.5 For local stream water quality monitoring, 1138 exceedances were recorded. It was concluded that 340 exceedances were due to the Project's work and the exceedances were rectified. Post-project local stream water quality monitoring also showed a return to the ambient conditions.

10.6 For coastal water quality monitoring, all 259 exceedances were concluded not due to the works and no further action was required.

10.7 28 complaints were made against this Project since commencement of the Project. 11 complaints were considered related to the Project's work and valid, and were followed up and rectified.

10.8 One summon and successful prosecution was made against the Project during the reporting period.

10.9 Five yellow forms were issued by EPD during the reporting period. The Contractor had rectified the events addressed in yellow forms.

10.10 Upon completion of the project, environmental qualities returned to the ambient levels. No significant impact to the adjacent environment was noted, which concurs with the EIA Report [1] findings.

10.11 The implemented EM&A programme ensured that any environmental impacts to the receivers would be

readily detected and timely actions could be taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of the Project. Weekly site inspections checked that the EIA's recommended mitigation measures were effectively implemented. No particular recommendation was advised for improvement in the EM&A programme.

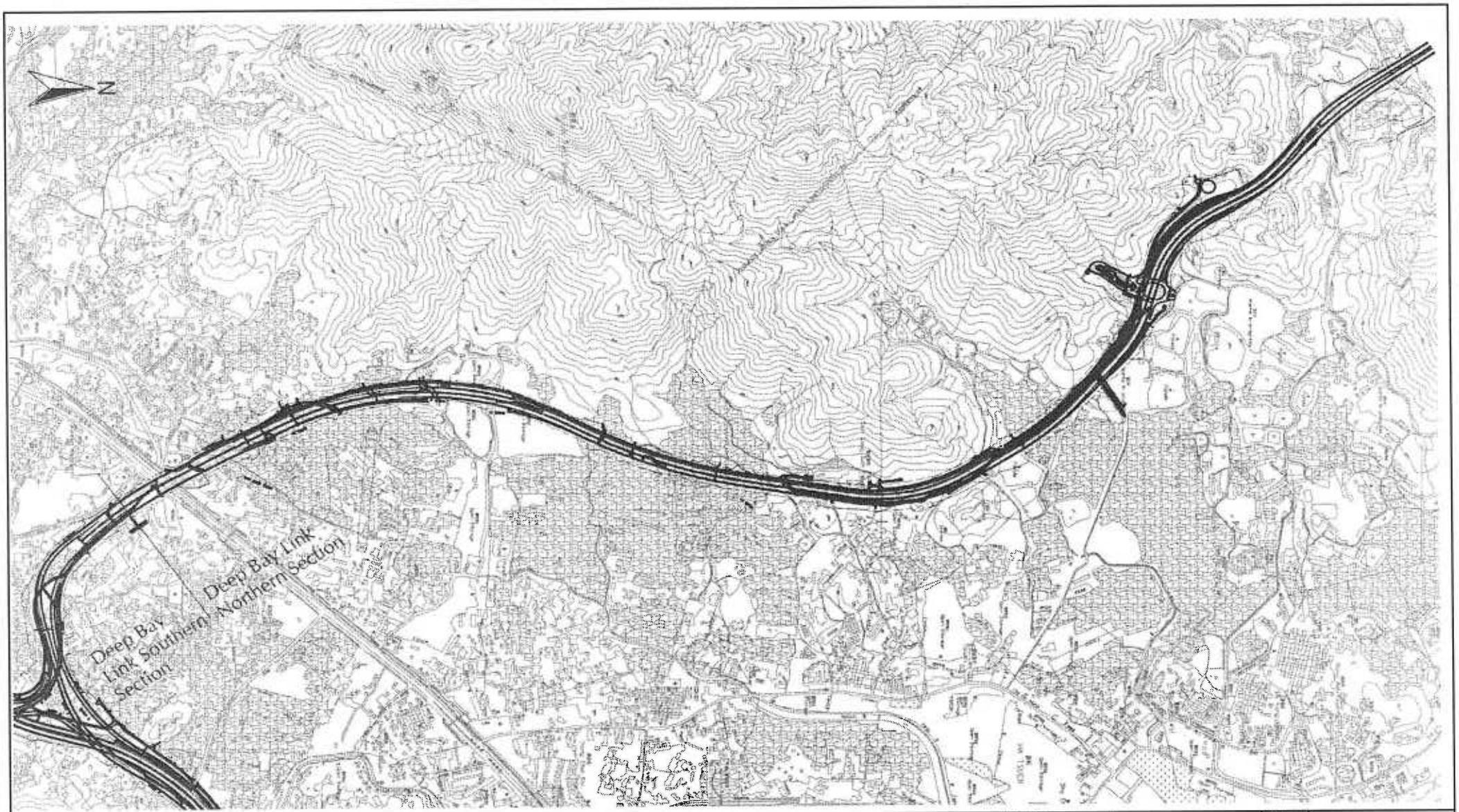
11. REFERENCES

[1] Ove Arup & Partners Hong Kong Ltd. May 2002. Agreement No. CE109/98, Deep Bay Link – Investigation and Preliminary Design, Environmental Impact Assessment Report Volume 1 of 3 – Text.

[2] Ove Arup & Partners Hong Kong Ltd. May 2002. Agreement No. CE109/98, Deep Bay Link – Investigation and Preliminary Design, Final Environmental Impact Assessment Report, Environmental Monitoring and Audit Manual.

[3] Maunsell Environmental Management Consultants Ltd. August 2003. Contract No. HY/2002/24 Deep Bay Link – Northern Section, Baseline Monitoring Report (Revision 1).

FIGURES



ENSR | AECOM

CONTRACT NO. HY/2002/24

DEEP BAY LINK - NORTHERN SECTION

LAYOUT OF WORK SITE

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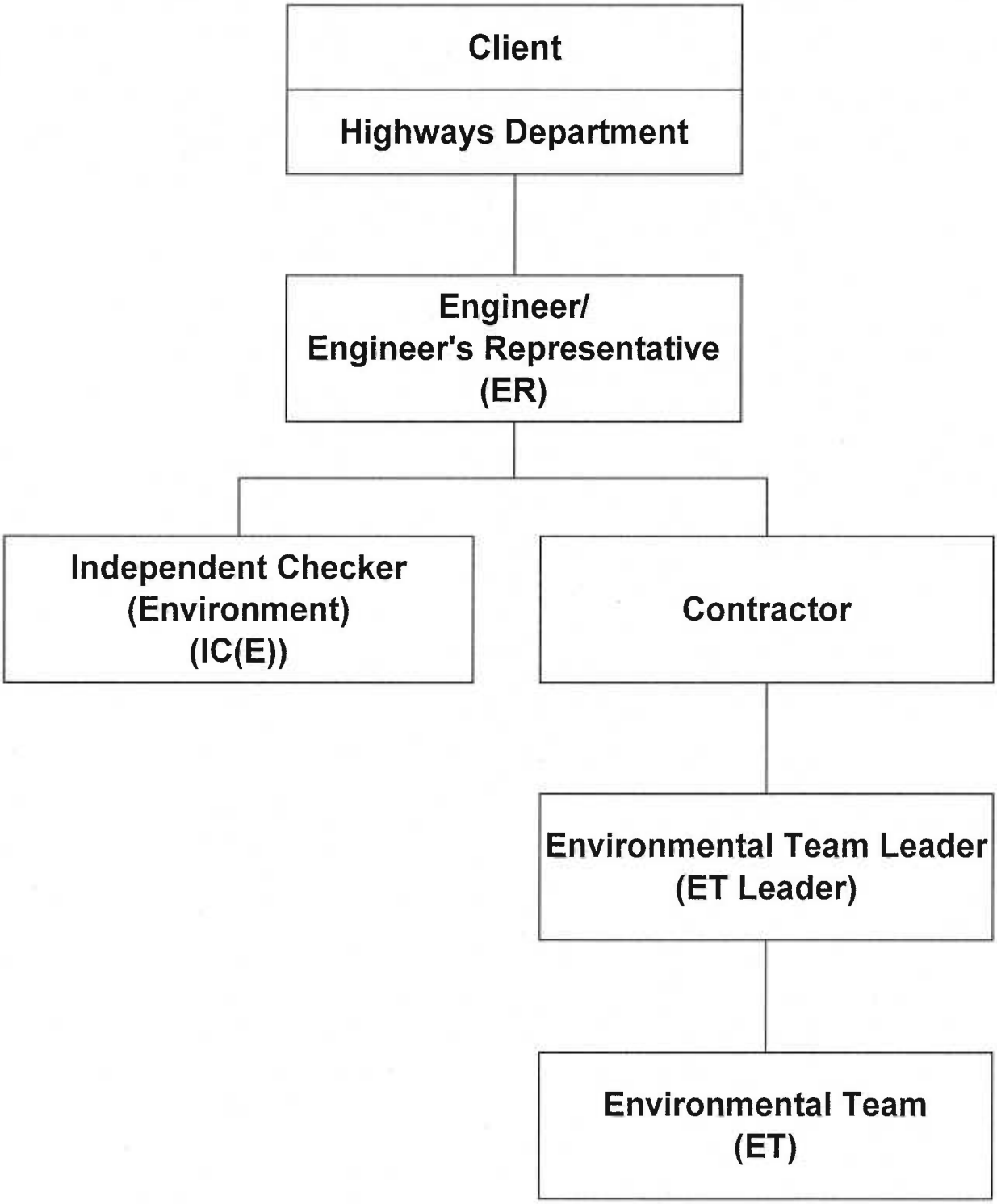
JOB NO.	60016782	FIGURE No. 1.1	Rev -



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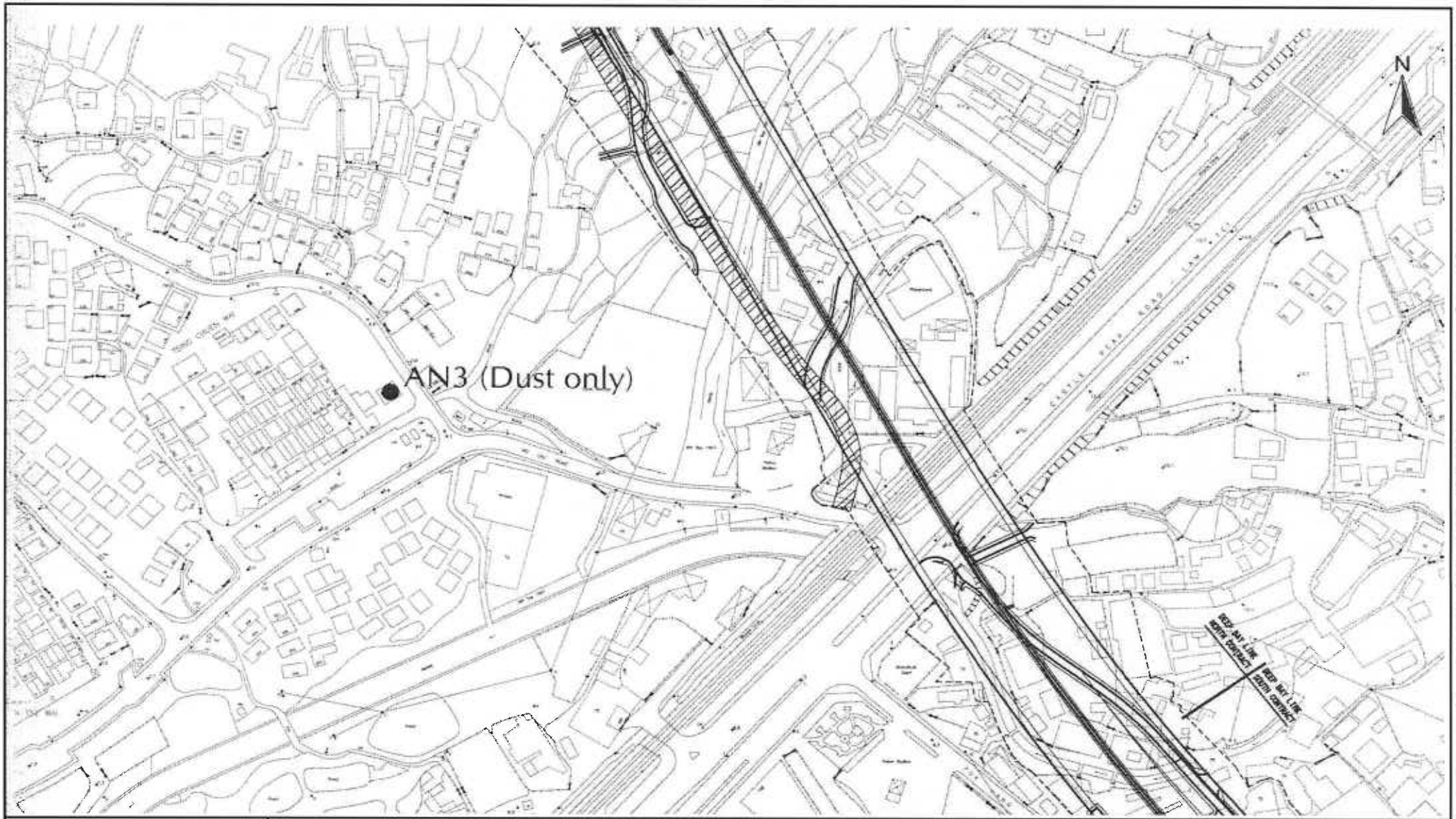
	Project Organization	JOB NO.	60016782	FIGURE No. 2.1	Rev. -



ENSR | AECOM

CONTRACT NO. HY/2002/24

DEEP BAY LINK - NORTHERN SECTION

LOCATION OF AIR QUALITY MONITORING STATIONS

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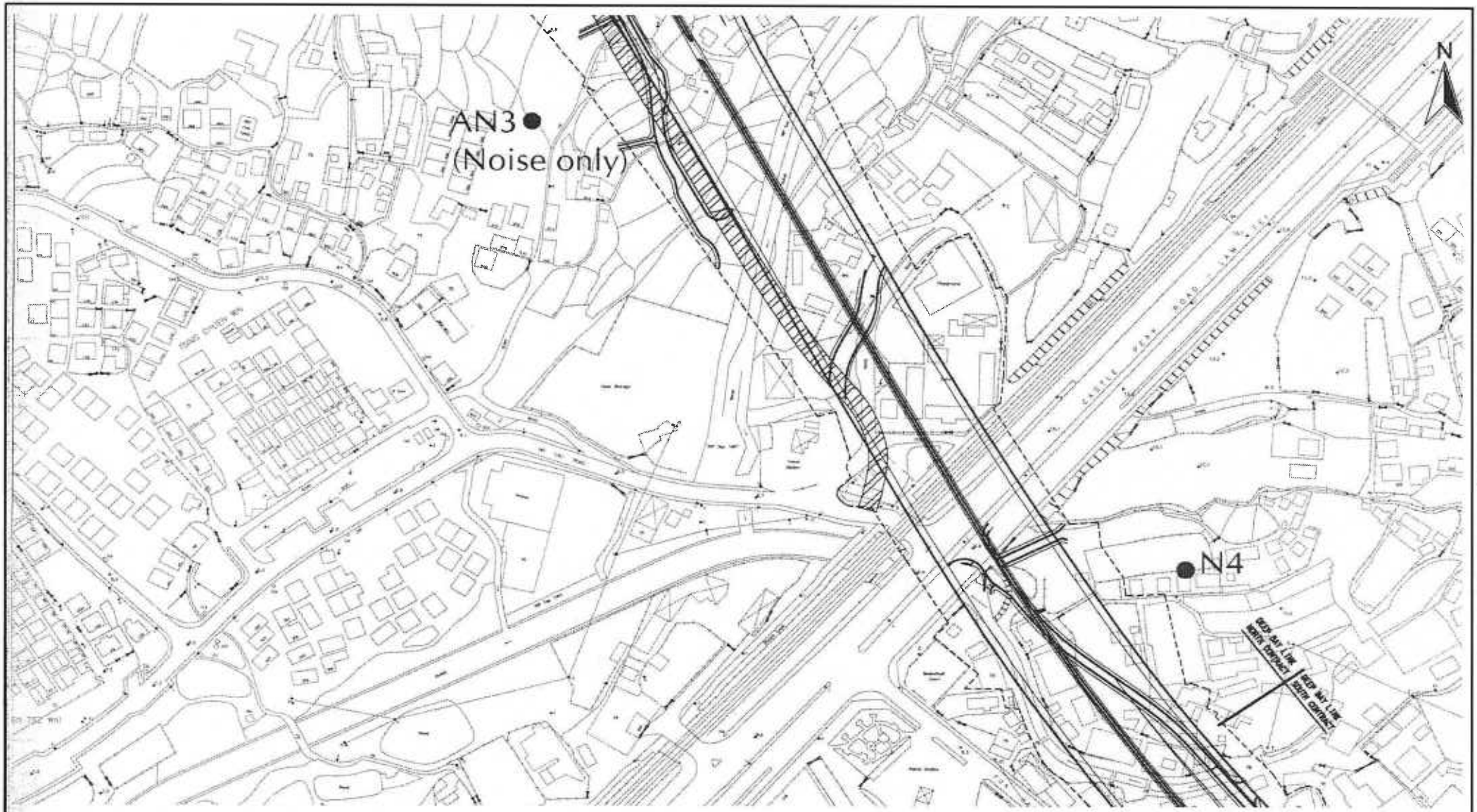
CHECK	PTPM	DRAWN	LLCM
JOB NO.	60016782	FIGURE No. 3.1	Rev -



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CONTRACT NO. HY/2002/24

DEEP BAY LINK - NORTHERN SECTION

LOCATION OF NOISE MONITORING STATIONS

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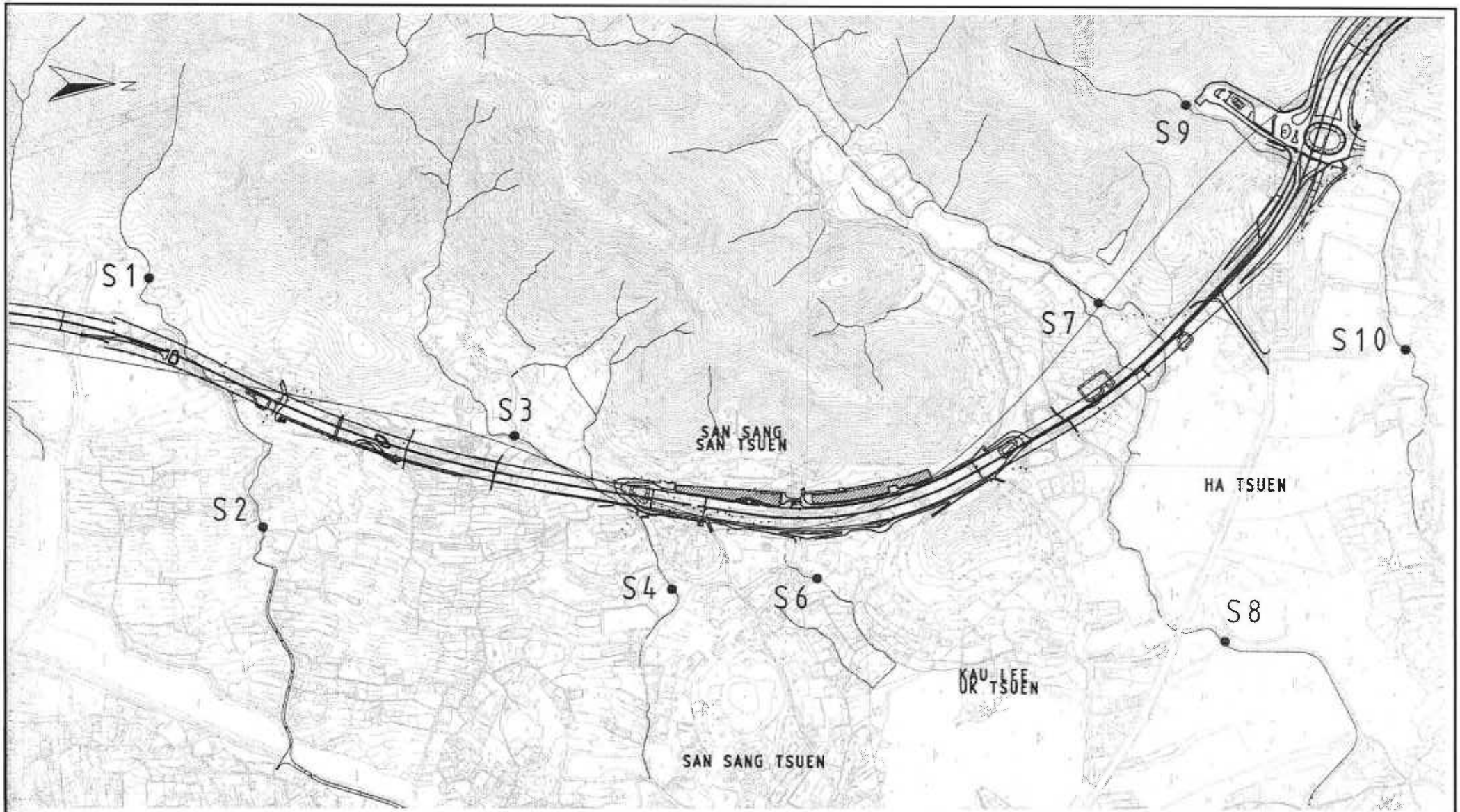
JOB NO.	60016782	FIGURE No. 3.2	Rev -



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CONTRACT NO. HY/2002/24

DEEP BAY LINK - NORTHERN SECTION

LOCATIONS OF LOCAL STREAM WATER QUALITY MONITORING STATIONS

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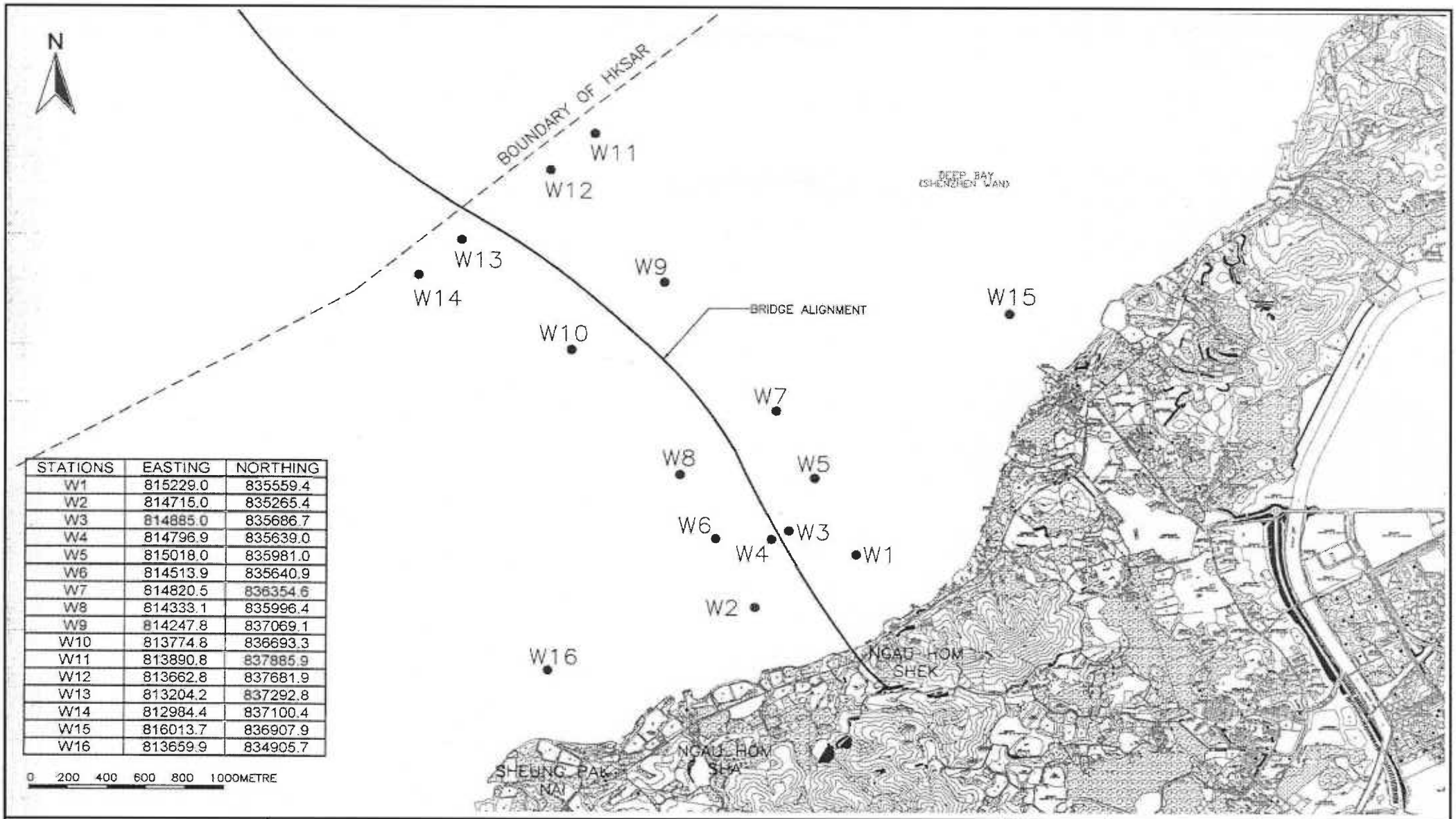
CHECK	PTPM	DRAWN	LLCM
JOB NO.	60016782	FIGURE No.	3.3
		Rev	-



STATIONS	EASTING	NORTHING
W1	815229.0	835559.4
W2	814715.0	835265.4
W3	814885.0	835686.7
W4	814796.9	835639.0
W5	815018.0	835981.0
W6	814513.9	835640.9
W7	814820.5	836354.6
W8	814333.1	835996.4
W9	814247.8	837069.1
W10	813774.8	836693.3
W11	813890.8	837885.9
W12	813662.8	837681.9
W13	813204.2	837292.8
W14	812984.4	837100.4
W15	816013.7	836907.9
W16	813659.9	834905.7

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DEEP BAY LINK - NORTHERN SECTION

LOCATIONS OF COASTAL WATER QUALITY MONITORING STATIONS

SCALE	N.T.S.	DATE	2007
CHECK	PTPM	DRAWN	LLCM
JOB NO.	60016782	FIGURE No.	3.4
		Rev	-

APPENDIX A
CONTACT DETAILS OF KEY MANAGEMENT

Contacts of Key Environmental Staff

	Name	Telephone	Fax
EPD			
Environmental Protection Officer	Mr. K. W. Ng	2411 9622	2611 9149
ER			
Ove Arup & Partners HK Limited			
Senior Resident Engineer	Mr. Jackson Wong	2448 8290	2448 3361
Resident Environmental Protection Officer	Ms. T. C. Wong	2448 8290	2448 3361
IEC			
CH2M HILL HK Limited			
Independent Environmental Checker	Mr. Billy Yu	2507 2203	2507 2293
Contractor			
Gammon Construction Limited			
Project Director	Mr. Rayland Lee	2448 8682	2448 8019
Project Manager / Site Agent	Mr. Bernard Rooney	2448 8682	2448 8019
Environmental Engineer	Mr. Leo Chow	2448 8682	2448 8019
ET			
ENSR Asia (HK) Limited			
Environmental Team Leader	Mr. Y. T. Tang	2893 1551	2891 0305
Senior Environmental Scientist	Ms. Connie Wong	2893 1551	2891 0305

APPENDIX B
ENVIRONMENTAL MONITORING PROGRAMME

Appendix B Environmental Monitoring Programme

Table B1 Air Quality Monitoring Parameters and Frequency

Location	Parameter	Duration	Frequency
AN3	1-hour TSP	1 hour	3 times every 6 days
	24-hour TSP	24 hours	Once every six days

Table B2 Noise Monitoring Parameters, Period and Frequency

Location	Time Period	Parameter	Frequency
AN3, N4	Normal weekday Daytime (0700 to 1900)	$L_{eq\ (30\text{-}min)}$	Once per week
	*Evening (1900 to 2300)	$L_{eq\ (15\text{-}min)}$ or 3 nos.$L_{eq\ (5\text{-}min)}$	
	*Night-time (2300 to 0700 of next day)		
	*Holiday Daytime (0700 to 1900)		

*Noise monitoring to be conducted only when construction work is in progress.

Table B3 Local Stream Water Quality Monitoring Parameters, Period and Frequency

Monitoring Station	Parameters, unit	Frequency	No. of Depths
S1 – S10#	Temperature, °C* Dissolved Oxygen, mg/L* Dissolved Oxygen Saturation, %* Turbidity, NTU* Suspended Solids, mg/L	Three times per week	1 (Surface)

* Parameters measured *in-situ*, otherwise by laboratory analysis.
# Monitoring at S5 was omitted from the impact monitoring programme as it was found not accessible.

Table B4 Coastal Water Quality Monitoring Parameters, Period and Frequency

Monitoring of coastal water quality of Deep Bay was undertaken in the EM&A programme of Hong Kong-Shenzhen Western Corridor (HK-SWC).

Monitoring Station	Parameters, unit	Frequency	No. of Depths
W1 – W16	Water Depth, m* Temperature, °C* Salinity, ppt* Dissolved Oxygen, mg/L* Dissolved Oxygen Saturation, %* Turbidity, NTU* pH* Suspended Solids, mg/L	Three times per week during mid-ebb and mid-flood tides	1 (Mid-depth)
W1 – W6	Tributyltin, µg/L	Two times per week during mid-ebb and mid-flood tides	1 (Mid-depth)

*Parameters measured *in-situ*, otherwise by laboratory analysis.

APPENDIX C
ACTION AND LIMIT LEVELS

Appendix C – Action and Limit Levels

Action and Limit Levels for 1-hour TSP and 24-hour TSP

Parameter	Location	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
1-hour TSP	AN3	297.7	500
24-hour TSP		158.4	260

Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level, dB(A)	
		AN3 (Tsing Chuen Wai)	N4 (Tsoi Yuen Tsuen (West))
0700 – 1900 hours on normal weekdays ($L_{eq, 30mins}$)	When one documented complaint is received from any one of the sensitive receivers	75	75
1900 – 2300 hours on all days ($L_{eq, 15mins}$)		65	65
0700 – 1900 hours on general holiday ($L_{eq, 15mins}$)		65	65
2300 – 0700 hours on all days ($L_{eq, 15mins}$)		50	50

Action and Limit Levels for Coastal Water Quality Monitoring

Carried out under the EM&A programme of HK-SWC

Parameter	Action	Limit
DO, mg/L [1]	4.2	2.0
Turbidity, NTU [1]	**50.8** and 120% of upstream control station's turbidity at the same tide of the same day	**101.5** and 130% of upstream control station's turbidity at the same tide of the same day
SS, mg/L [1]	**50.6** and 120% of upstream control station's SS at the same tide of the same day	**86.3** and 130% of upstream control station's SS at the same tide of the same day

Notes:
1. The Action and Limit Levels are applied to W1 & W15 during mid-flood tide; and W2 & W16 during mid-ebb tide only

Limit Level for Tributyltin (TBT)

Carried out under the EM&A programme of HK-SWC

Parameter	Limit Level
TBT [1]	0.002 µg/L

Notes:
1. The Limit Level is applied to W1 during mid-flood tide and W2 during mid-ebb tide only

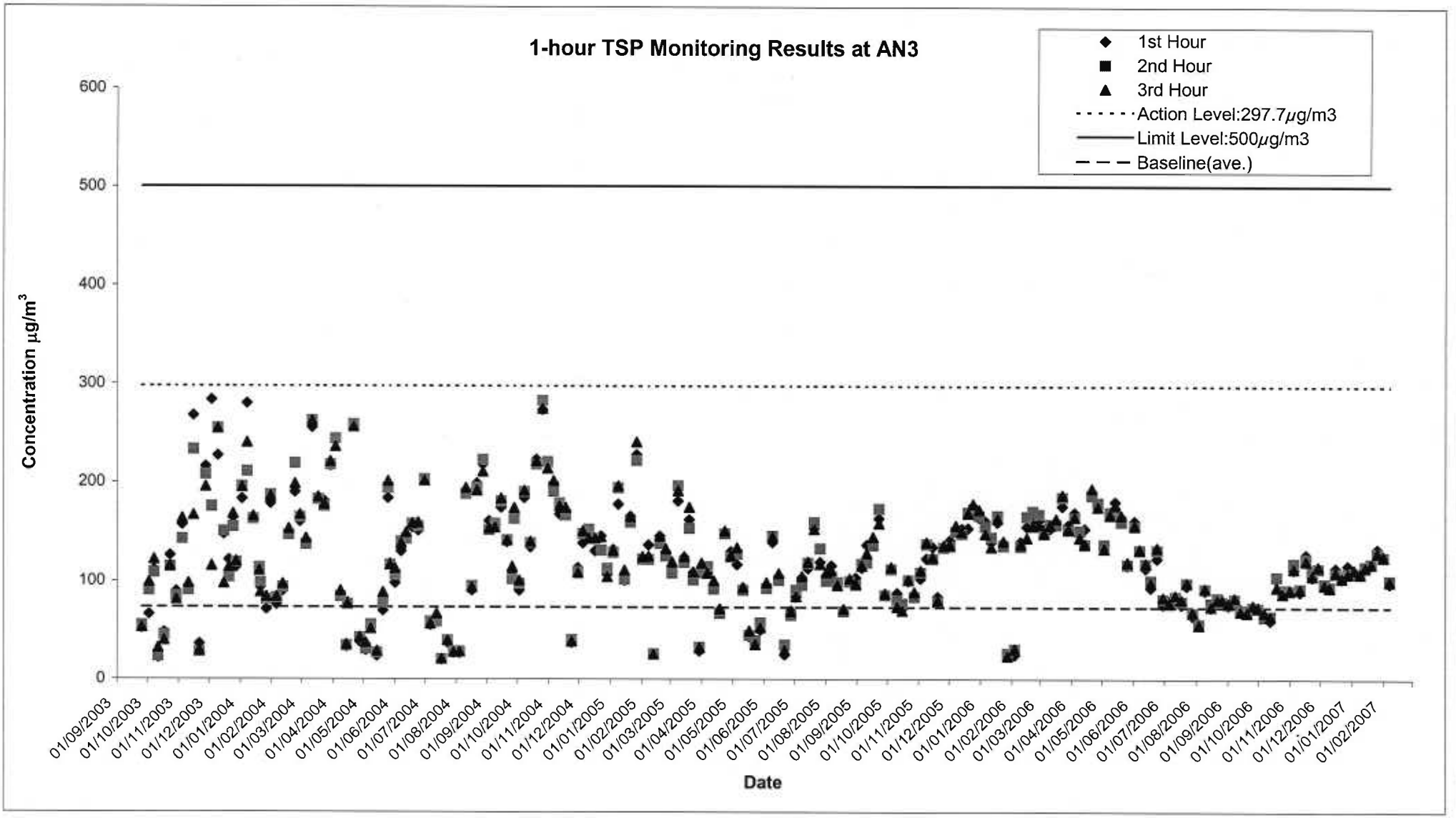
Action and Limit Levels for Local Stream Water Quality Monitoring

Station	Parameter	Action	Limit
S2	DO, mg/L	**4.61**	4 mg/L or 40% saturation at 15^{O}C
	Turbidity, NTU	**43.0** and 120% of upstream control station's turbidity at the same tide of the same day	**60.2** and 130% of upstream control station's turbidity at the same tide of the same day
	SS, mg/L	**28.8** and 120% of upstream control station's SS at the same tide of the same day	**30.6** and 130% of upstream control station's SS at the same tide of the same day
S4	DO, mg/L	4 mg/L or 40% saturation at 15^{O}C*	4 mg/L or 40% saturation at 15^{O}C
	Turbidity, NTU	**16.7** and 120% of upstream control station's turbidity at the same tide of the same day	**19.4** and 130% of upstream control station's turbidity at the same tide of the same day
	SS, mg/L	**25.3** and 120% of upstream control station's SS at the same tide of the same day	**31.5** and 130% of upstream control station's SS at the same tide of the same day
S6#	DO, mg/L	**4.53**	4 mg/L or 40% saturation at 15^{O}C
	Turbidity, NTU	**15.9**	**21.2**
	SS, mg/L	**20.5**	**22.5**
S8	DO, mg/L	4 mg/L or 40% saturation at 15^{O}C*	4 mg/L or 40% saturation at 15^{O}C
	Turbidity, NTU	**251.0** and 120% of upstream control station's turbidity at the same tide of the same day	**271.0** and 130% of upstream control station's turbidity at the same tide of the same day
	SS, mg/L	**247.5** and 120% of upstream control station's SS at the same tide of the same day	**362.3** and 130% of upstream control station's SS at the same tide of the same day
S10	DO, mg/L	4 mg/L or 40% saturation at 15^{O}C*	4 mg/L or 40% saturation at 15^{O}C
	Turbidity, NTU	**48.5** and 120% of upstream control station's turbidity at the same tide of the same day	**70.5** and 130% of upstream control station's turbidity at the same tide of the same day
	SS, mg/L	**45.1** and 120% of upstream control station's SS at the same tide of the same day	**49.0** and 130% of upstream control station's SS at the same tide of the same day

* Since 5%-ile of the baseline data is less than 4 mg/L (the Limit Level), the dissolved oxygen Limit Level was adopted as its Action Level.

\# No appropriate upstream monitoring station could be identified for S6. For future turbidity and suspended solids assessment, water quality at S6 would be compared with its baseline data only.

APPENDIX D
GRAPHICAL PRESENTATION OF AIR QUALITY MONITORING RESULTS



ENSR | AECOM

Contract No.: HY/2002/24

Deep Bay Link Northern Section

Graphical Presentation of 1-hour Air Quality Monitoring Result (September 2003-February 2007)

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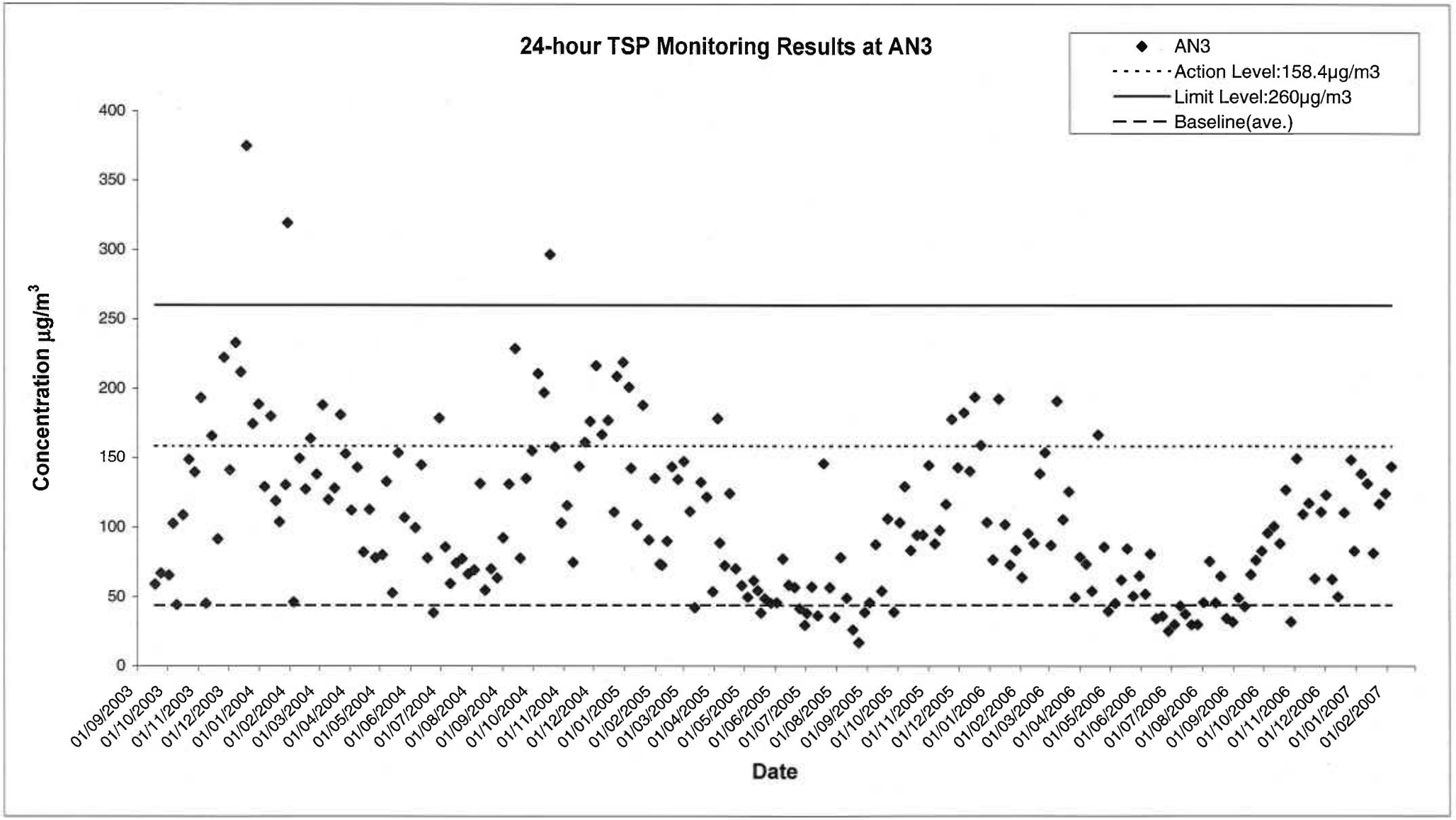
JOB NO.	60016782	APPENDIX No. D	Rev. -



ENSR | AECOM

Contract No.: HY/2002/24

Deep Bay Link Northern Section

Graphical Presentation of 24-hour Air Quality Monitoring Result (September 2003-February 2007)

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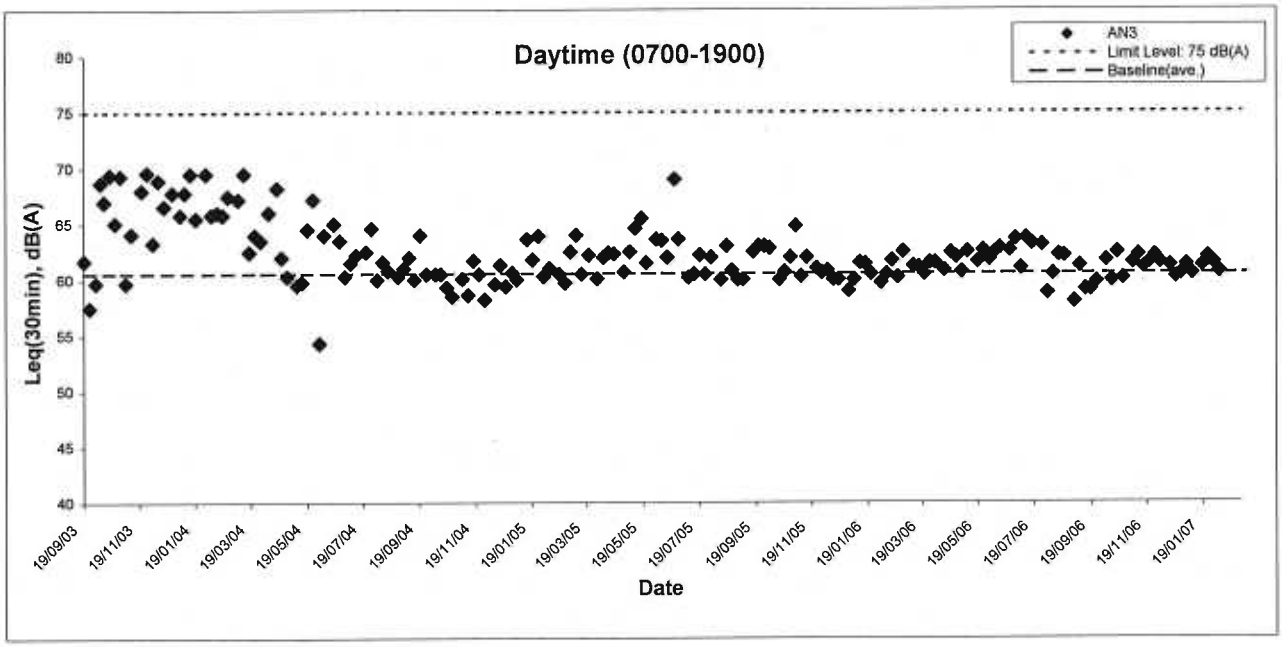
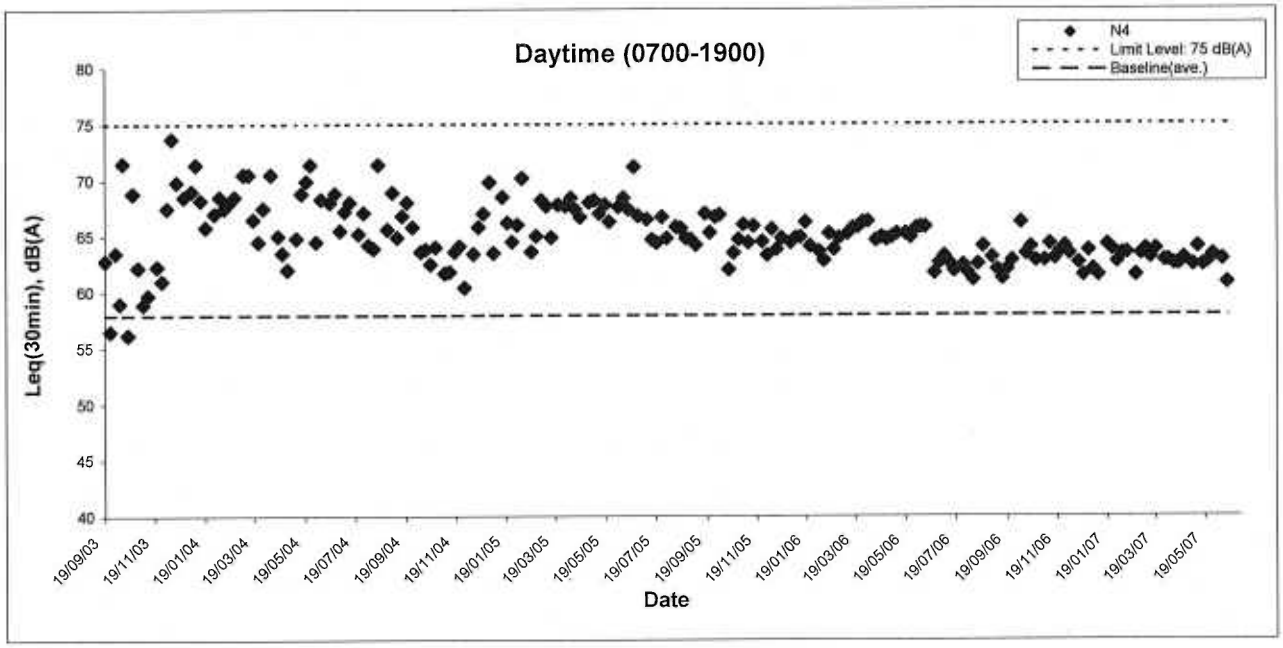
JOB NO.	60016782	APPENDIX No. D	Rev. -

APPENDIX E
GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS

Noise Monitoring Results





ENSR | AECOM	Contract HY/2002/24 Deep Bay Link - Northern Section **Graphical Presentation of Noise Monitoring Results (September 2003- June 2007)**	SCALE	N.T.S.	DATE	2007
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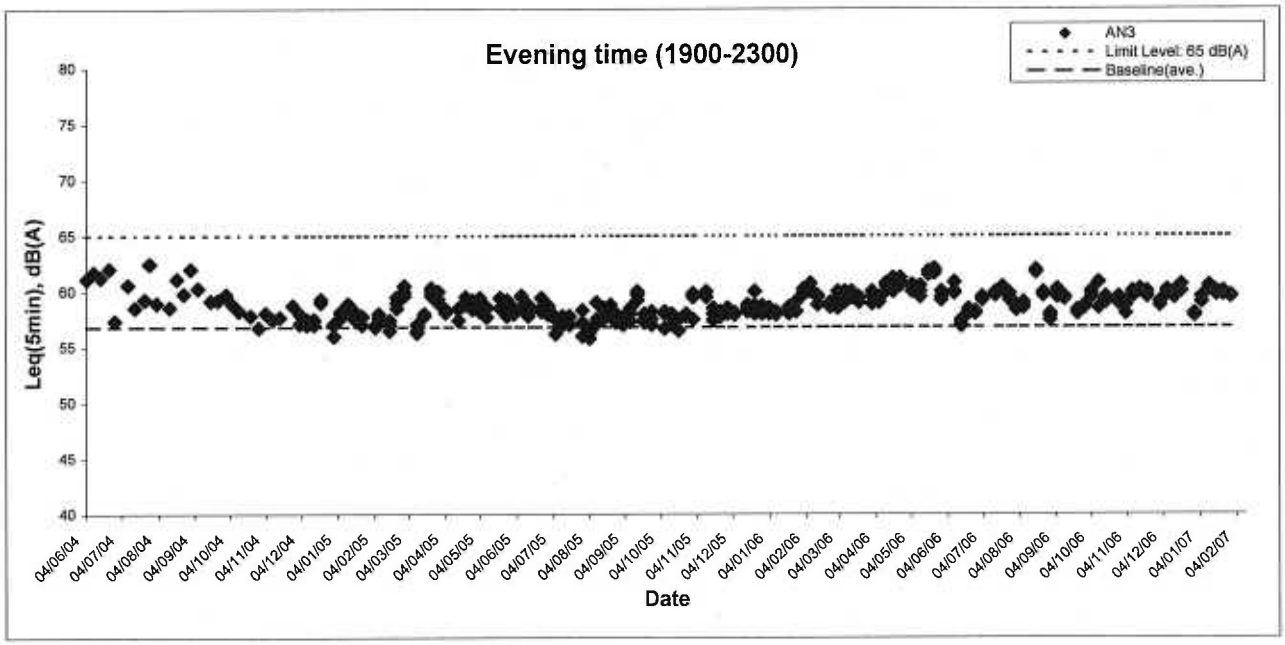
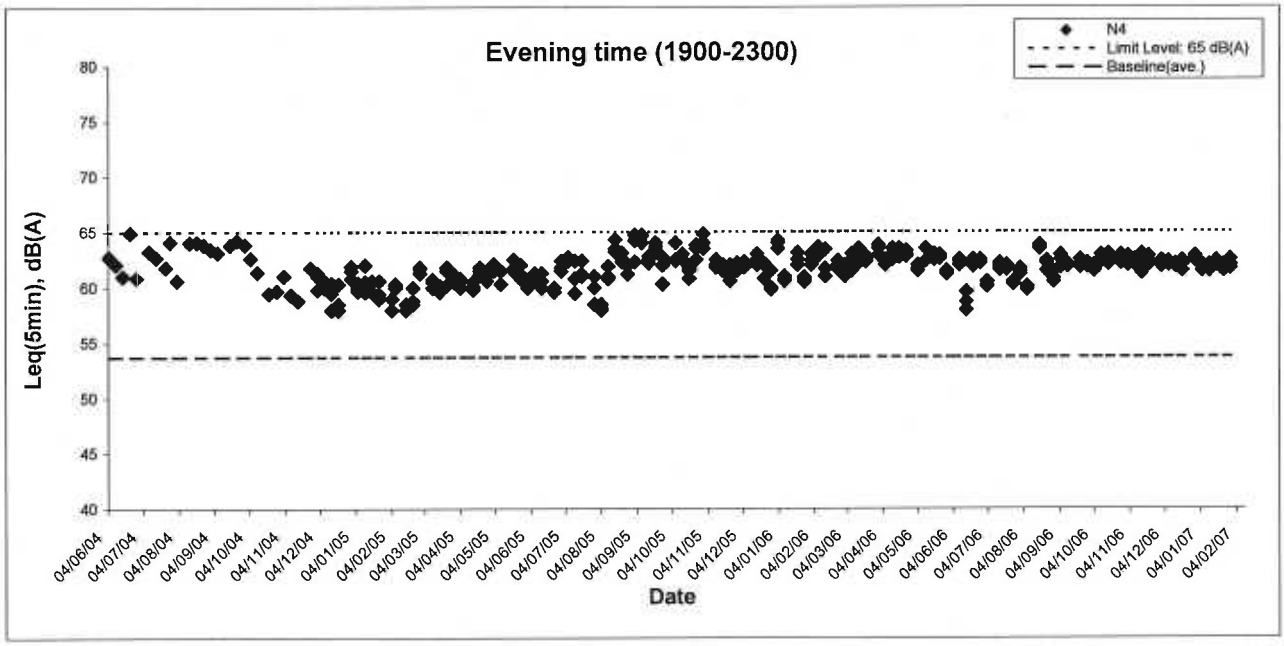
		JOB NO.	60016782	APPENDIX No. E	Rev. -

Noise Monitoring Results





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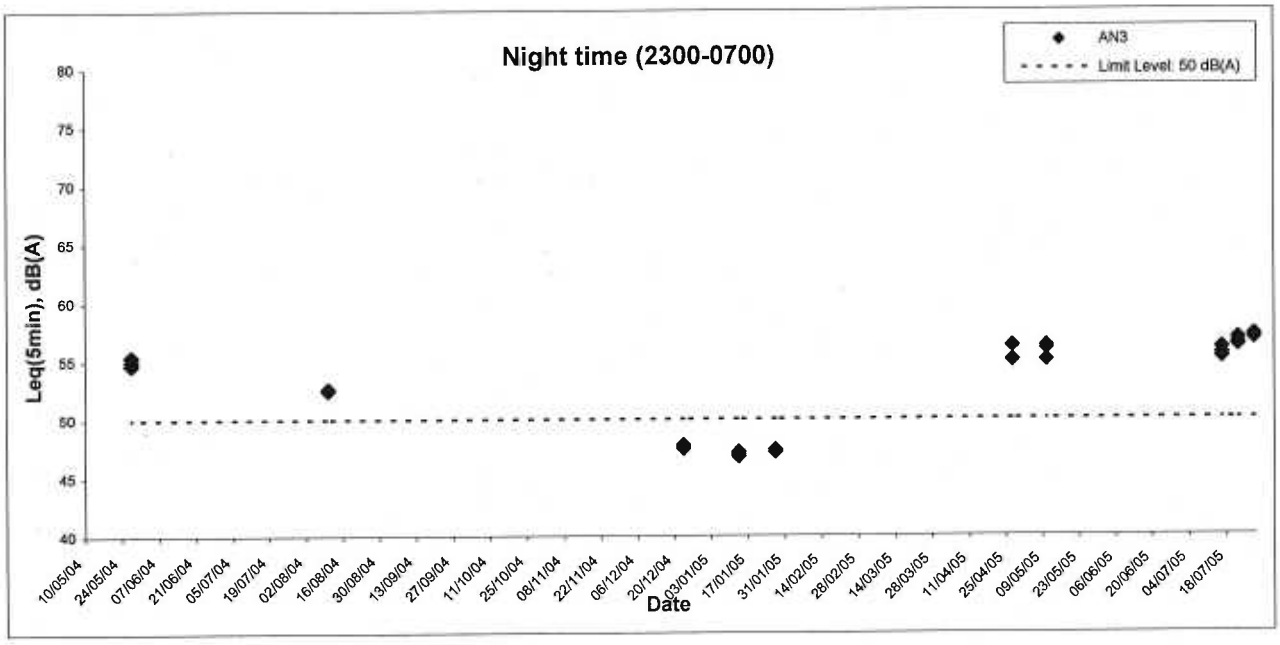
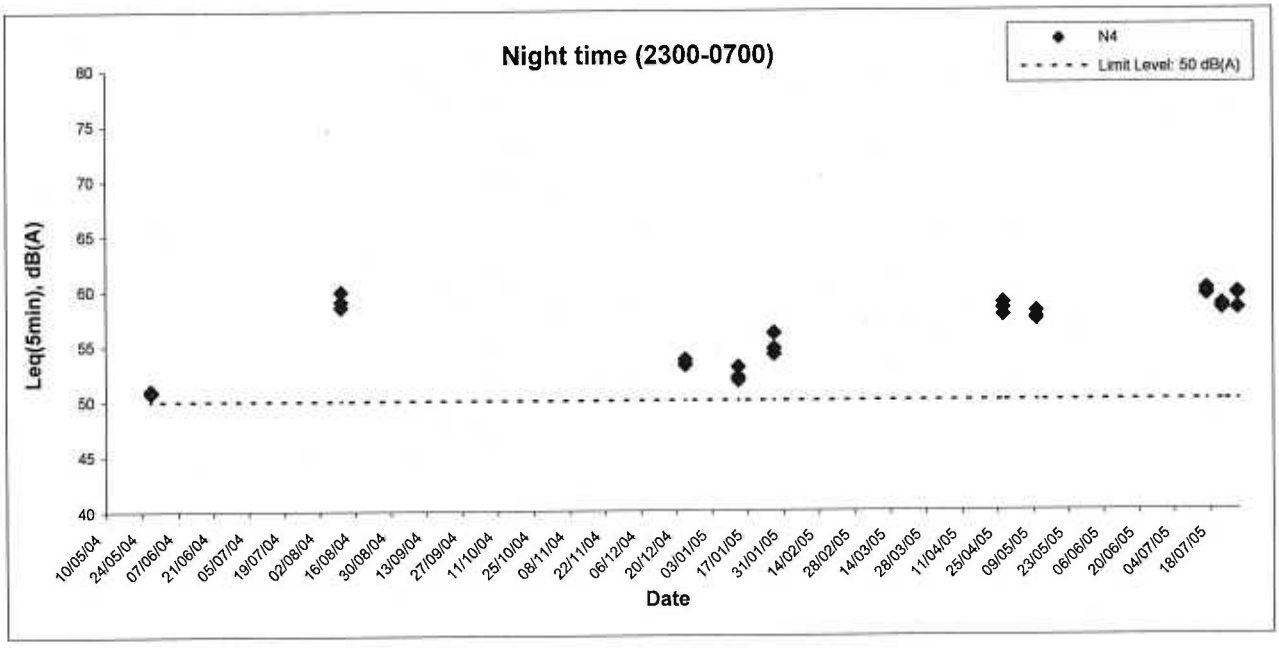
Noise Monitoring Results





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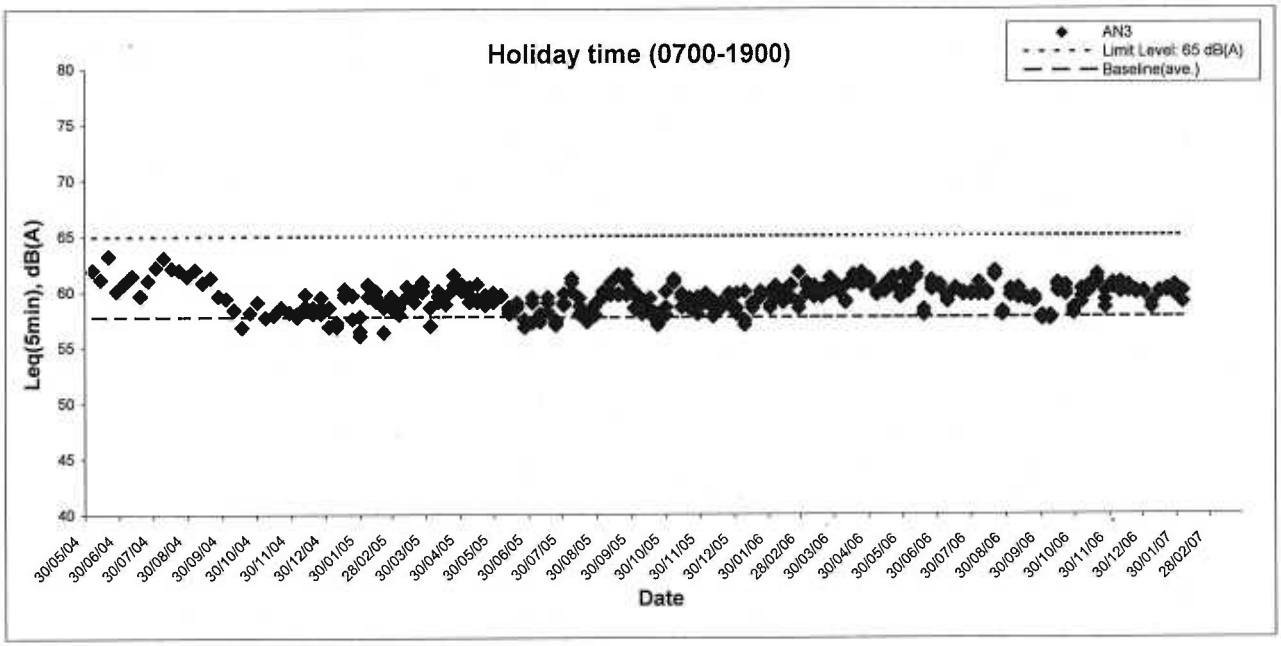
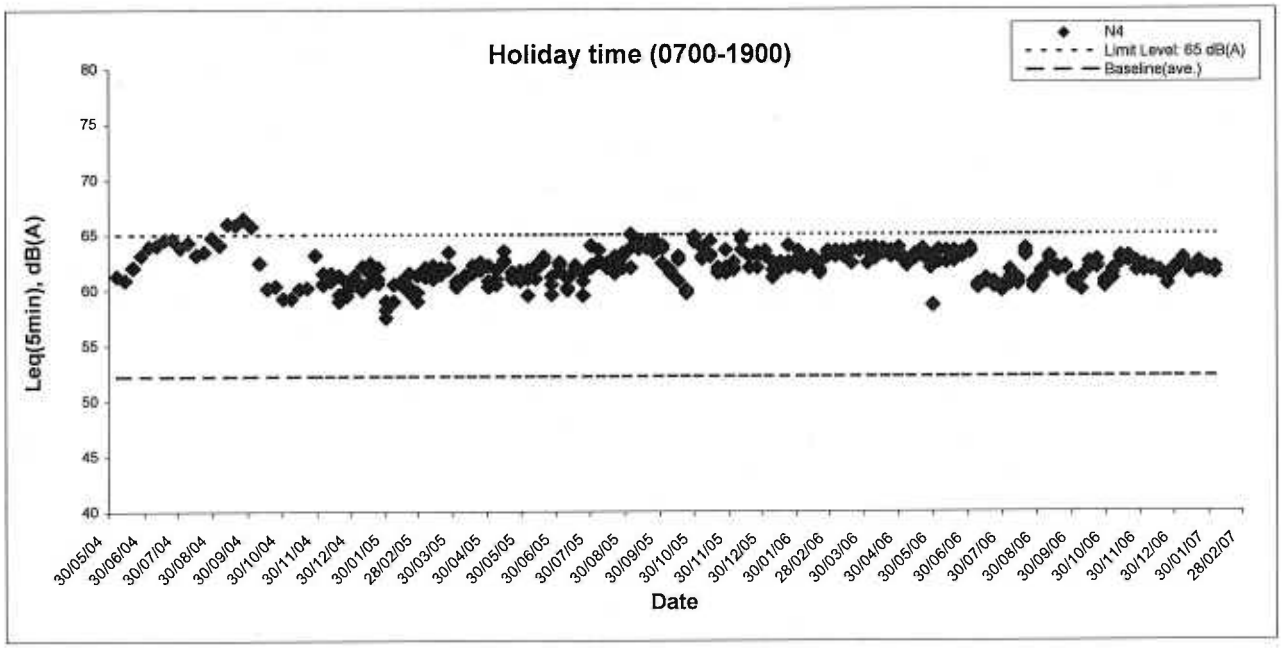
Noise Monitoring Results





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		JOB NO.	60016782	APPENDIX No. E	Rev. -

APPENDIX F
POST-PROJECT STREAM WATER QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATION OF STREAM WATER QUALITY MONITOIRNG RESULTS

Appendix F - Water Quality Monitoring Results

Water Quality Monitoring Results at S1

Date	Weather Condition	Sampling Time	Temperature (°C)		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)
			Value	Average	Value	Average	Value	Average	Value	Average	Value
20/06/2007	Fine	11:45	29.6 29.4	29.5	52.3 52.1	52.2	5.13 5.10	5.12	3.76 4.06	3.9	16
22/06/2007	Sunny	11:20	28.6 28.6	28.6	51.8 52.1	52.0	5.19 5.23	5.21	3.06 3.00	3.0	3
26/06/2007	Sunny	11:00	29.7 29.7	29.7	51.7 51.5	51.6	5.16 5.15	5.16	3.06 3.05	3.1	3
28/06/2007	Sunny	14:30	28.6 28.6	28.6	50.0 50.1	50.1	5.03 5.02	5.03	3.46 3.50	3.5	1
30/06/2007	Sunny	16:05	27.6 27.6	27.6	60.5 61.0	60.8	5.76 5.79	5.78	3.16 3.10	3.1	7
03/07/2007	Sunny	17:00	28.6 28.6	28.6	70.5 69.7	70.1	5.64 5.58	5.61	5.01 4.98	5.0	5
05/07/2007	Sunny	17:05	29.0 29.0	29.0	79.6 79.0	79.3	7.08 7.01	7.05	7.08 7.01	7.1	4
07/07/2007	Sunny	16:00	29.1 29.1	29.1	72.4 71.9	72.2	6.10 6.05	6.08	3.57 3.60	3.6	1
09/07/2007	Sunny	14:30	29.2 29.2	29.2	55.6 55.0	55.3	4.91 4.87	4.89	3.70 3.63	3.7	2
11/07/2007	Sunny	17:15	29.2 29.2	29.2	70.7 70.0	70.4	6.68 6.60	6.64	3.50 3.42	3.5	1
13/07/2007	Sunny	10:00	29.3 29.3	29.3	56.0 55.0	55.5	5.26 5.17	5.22	3.00 3.09	3.1	1
16/07/2007	Sunny	08:40	29.5 29.5	29.5	50.9 50.1	50.5	4.78 4.70	4.74	3.07 3.15	3.1	1
18/07/2007	Sunny	14:00	29.4 29.4	29.4	57.4 56.9	57.2	5.11 5.04	5.08	3.11 3.05	3.1	1
		Min	27.6		50.0		4.7		3.0		1
		Max	29.7		79.6		7.1		7.1		16

Appendix F - Water Quality Monitoring Results

Water Quality Monitoring Results at S2

Date	Weather Condition	Sampling Time	Temperature (°C)		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)
			Value	Average	Value	Average	Value	Average	Value	Average	Value
20/06/2007	Fine	11:56	29.3 29.2	29.3	51.2 50.9	51.1	5.06 5.03	5.05	4.97 5.18	5.1	18
22/06/2007	Sunny	11:31	28.6 28.6	28.6	49.8 49.6	49.7	4.98 4.97	4.98	3.43 3.49	3.5	2
26/06/2007	Sunny	11:09	29.8 29.7	29.8	49.4 49.6	49.5	4.95 4.95	4.95	3.42 3.44	3.4	2
28/06/2007	Sunny	14:42	28.6 28.6	28.6	49.0 48.8	48.9	4.90 4.89	4.90	4.12 4.14	4.1	1
30/06/2007	Sunny	16:21	27.6 27.6	27.6	62.2 62.6	62.4	6.00 6.02	6.01	3.58 3.54	3.6	2
03/07/2007	Sunny	17:14	28.8 28.8	28.8	65.4 65.0	65.2	5.16 5.13	5.15	6.17 6.20	6.2	5
05/07/2007	Sunny	17:18	29.1 29.1	29.1	76.2 75.8	76.0	6.75 6.69	6.72	6.75 6.69	6.7	5
07/07/2007	Sunny	16:13	29.2 29.2	29.2	71.0 70.7	70.9	5.97 5.95	5.96	3.86 3.80	3.8	1
09/07/2007	Sunny	14:44	29.4 29.4	29.4	60.3 59.8	60.1	5.36 5.31	5.34	3.98 4.05	4.0	3
11/07/2007	Sunny	17:28	29.3 29.3	29.3	72.3 71.5	71.9	6.90 6.84	6.87	3.61 3.69	3.7	1
13/07/2007	Sunny	10:13	29.4 29.4	29.4	52.6 52.1	52.4	4.91 4.85	4.88	3.16 3.10	3.1	5
16/07/2007	Sunny	08:53	29.3 29.3	29.3	52.1 51.6	51.9	4.90 4.85	4.88	3.22 3.29	3.3	1
18/07/2007	Sunny	14:13	29.6 29.6	29.6	53.6 53.0	53.3	4.71 4.65	4.68	3.36 3.31	3.3	1
		Min		27.6		48.8		4.7		3.1	1
		Max		29.8		76.2		6.9		6.8	18

Appendix F - Water Quality Monitoring Results

Water Quality Monitoring Results at S3

Date	Weather Condition	Sampling Time	Temperature (°C)		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)
			Value	Average	Value	Average	Value	Average	Value	Average	Value
20/06/2007	Fine	12:04	29.1 29.2	29.2	47.6 47.0	47.3	4.58 4.52	4.55	4.46 4.58	4.5	18
22/06/2007	Sunny	11:43	28.7 28.7	28.7	50.6 50.0	50.3	5.03 5.00	5.02	3.25 3.22	3.2	3
26/06/2007	Sunny	11:21	29.6 29.6	29.6	50.0 50.1	50.1	5.00 5.02	5.01	3.30 3.33	3.3	2
28/06/2007	Sunny	14:53	28.7 28.7	28.7	49.7 49.6	49.7	4.96 4.96	4.96	3.80 3.82	3.8	1
30/06/2007	Sunny	16:34	27.8 27.8	27.8	64.0 63.8	63.9	6.09 6.07	6.08	3.27 3.29	3.3	6
03/07/2007	Sunny	17:29	28.9 28.9	28.9	62.3 62.7	62.5	4.96 4.93	4.95	6.01 6.07	6.0	6
05/07/2007	Sunny	17:31	29.2 29.2	29.2	71.5 71.1	71.3	6.19 6.15	6.17	6.19 6.15	6.2	5
07/07/2007	Sunny	16:26	29.3 29.3	29.3	68.4 68.0	68.2	5.73 5.70	5.72	4.10 4.18	4.1	5
09/07/2007	Sunny	14:57	29.3 29.3	29.3	58.7 58.0	58.4	5.12 5.05	5.09	4.44 4.38	4.4	5
11/07/2007	Sunny	17:41	29.0 29.0	29.0	68.4 67.9	68.2	6.41 6.34	6.38	4.01 4.06	4.0	4
13/07/2007	Sunny	10:26	29.5 29.5	29.5	51.0 51.5	51.3	4.78 4.81	4.80	3.52 3.43	3.5	5
16/07/2007	Sunny	09:06	29.3 29.3	29.3	58.2 57.7	58.0	5.49 5.44	5.47	3.69 3.73	3.7	1
18/07/2007	Sunny	14:27	29.5 29.5	29.5	50.0 49.5	49.8	4.43 4.39	4.41	3.67 3.74	3.7	1
		Min	27.8		47.0		4.4		3.2		1
		Max	29.6		71.5		6.4		6.2		18

Appendix F - Water Quality Monitoring Results

Water Quality Monitoring Results at S4

Date	Weather Condition	Sampling Time	Temperature (°C)		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)
			Value	Average	Value	Average	Value	Average	Value	Average	Value
20/06/2007	Fine	12:13	29.0 28.8	28.9	48.2 49.0	48.6	4.69 4.74	4.72	4.84 4.72	4.8	20
22/06/2007	Sunny	11:56	28.7 28.6	28.7	48.7 48.8	48.8	4.88 4.89	4.89	3.49 3.53	3.5	2
26/06/2007	Sunny	11:29	29.7 29.7	29.7	48.8 49.0	48.9	4.90 4.92	4.91	3.57 3.51	3.5	3
28/06/2007	Sunny	15:06	28.8 28.7	28.8	44.7 44.2	44.5	4.45 4.42	4.44	4.01 4.09	4.1	1
30/06/2007	Sunny	16:49	27.7 27.7	27.7	65.4 65.0	65.2	6.12 6.10	6.11	4.00 4.02	4.0	2
03/07/2007	Sunny	17:43	28.9 28.9	28.9	64.4 64.0	64.2	5.07 5.04	5.06	6.24 6.30	6.3	6
05/07/2007	Sunny	17:44	29.1 29.1	29.1	69.9 69.4	69.7	6.01 5.97	5.99	6.01 5.97	6.0	4
07/07/2007	Sunny	16:39	29.3 29.3	29.3	67.5 66.8	67.2	5.65 5.57	5.61	4.30 4.40	4.4	6
09/07/2007	Sunny	15:10	29.3 29.3	29.3	61.1 60.5	60.8	5.42 5.35	5.39	4.78 4.85	4.8	5
11/07/2007	Sunny	17:54	29.3 29.3	29.3	65.8 65.1	65.5	6.16 6.10	6.13	4.17 4.21	4.2	4
13/07/2007	Sunny	10:39	29.5 29.5	29.5	53.3 52.8	53.1	5.06 5.02	5.04	3.28 3.35	3.3	7
16/07/2007	Sunny	09:19	29.4 29.4	29.4	54.5 53.8	54.2	5.17 5.09	5.13	3.61 3.67	3.6	1
18/07/2007	Sunny	14:41	29.5 29.5	29.5	47.7 48.1	47.9	4.12 4.17	4.15	3.26 3.32	3.3	2
		Min	27.7		44.2		4.1		3.3		1
		Max	29.7		69.9		6.2		6.3		20

Appendix F - Water Quality Monitoring Results

Water Quality Monitoring Results at S7

Date	Weather Condition	Sampling Time	Temperature (°C)		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)
			Value	Average	Value	Average	Value	Average	Value	Average	Value
20/06/2007	Fine	12:28	28.4 28.0	28.2	54.2 51.8	53.0	5.21 5.07	5.14	3.84 3.71	3.8	19
22/06/2007	Sunny	12:11	28.6 28.6	28.6	53.1 53.0	53.1	5.32 5.30	5.31	3.72 3.76	3.7	2
26/06/2007	Sunny	11:42	29.8 29.8	29.8	50.7 50.6	50.7	5.06 5.05	5.06	3.27 3.29	3.3	1
28/06/2007	Sunny	15:30	28.7 28.7	28.7	49.0 49.4	49.2	4.90 4.91	4.91	4.42 4.40	4.4	1
30/06/2007	Sunny	17:02	27.7 27.7	27.7	60.7 60.5	60.6	5.71 5.69	5.70	3.22 3.20	3.2	2
03/07/2007	Sunny	18:00	28.8 28.8	28.8	61.2 61.0	61.1	4.85 4.82	4.84	5.57 5.60	5.6	4
05/07/2007	Sunny	17:58	29.0 29.0	29.0	66.7 66.0	66.4	5.55 5.50	5.53	5.55 5.50	5.5	5
07/07/2007	Sunny	16:53	29.3 29.3	29.3	70.5 70.0	70.3	5.99 5.94	5.97	4.58 4.66	4.6	1
09/07/2007	Sunny	15:24	29.5 29.5	29.5	57.7 57.2	57.5	5.03 4.98	5.01	4.16 4.05	4.1	5
11/07/2007	Sunny	18:07	29.4 29.4	29.4	69.0 68.1	68.6	6.60 6.52	6.56	3.98 4.06	4.0	1
13/07/2007	Sunny	10:53	29.3 29.3	29.3	54.6 54.0	54.3	5.09 5.02	5.06	3.17 3.23	3.2	1
16/07/2007	Sunny	09:32	29.4 29.4	29.4	56.7 56.1	56.4	5.32 5.26	5.29	3.02 3.09	3.1	1
18/07/2007	Sunny	14:55	29.2 29.2	29.2	51.0 50.6	50.8	4.50 4.45	4.48	3.46 3.53	3.5	1
		Min	27.7		49.0		4.5		3.0		1
		Max	29.8		70.5		6.6		5.6		19

Appendix F - Water Quality Monitoring Results

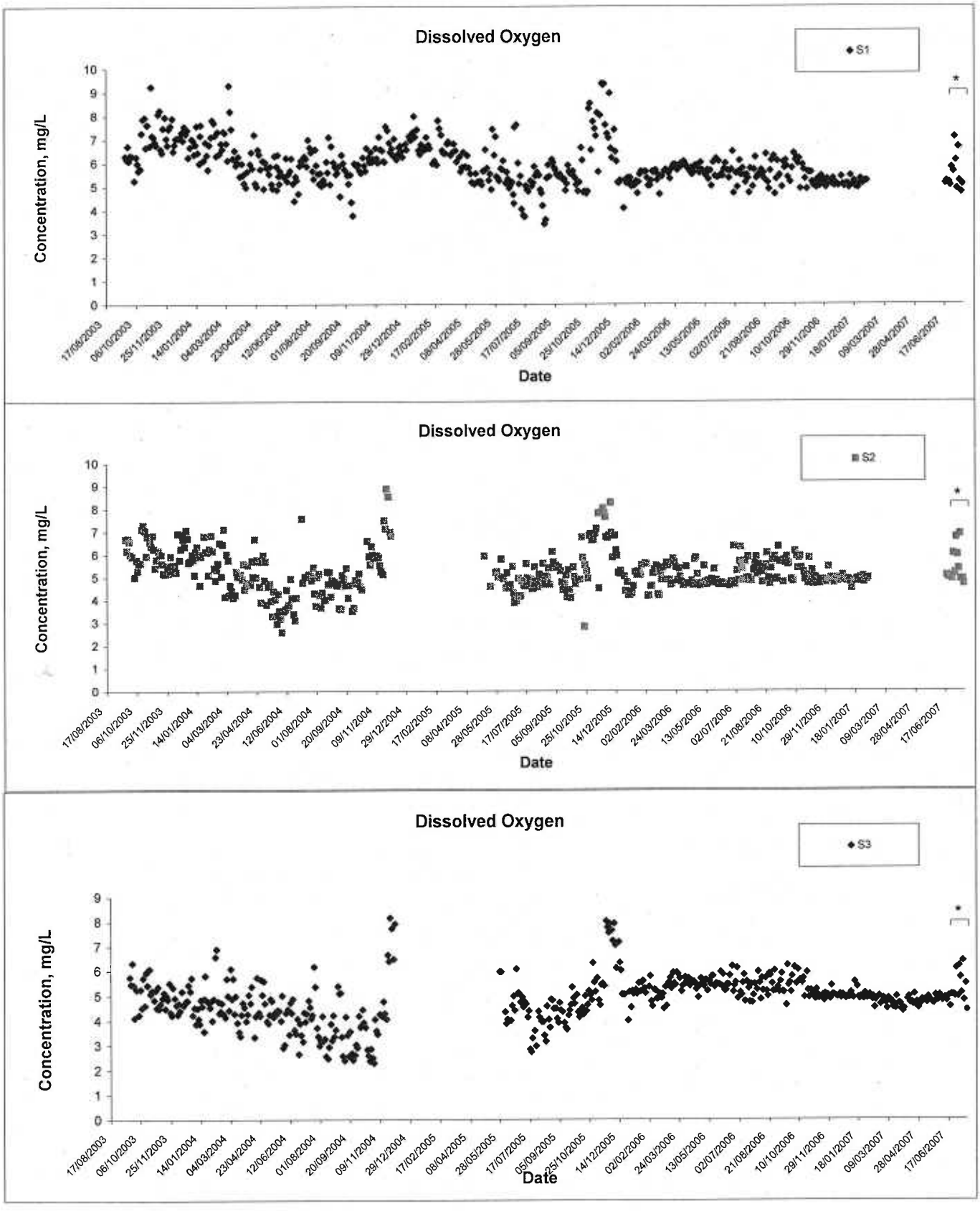
Water Quality Monitoring Results at S8

Date	Weather Condition	Sampling Time	Temperature (°C)		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)
			Value	Average	Value	Average	Value	Average	Value	Average	Value
20/06/2007	Fine	13:04	28.7 28.7	28.7	49.2 48.7	49.0	4.71 4.64	4.68	4.68 4.99	4.8	18
22/06/2007	Sunny	12:38	28.7 28.7	28.7	46.4 46.6	46.5	4.65 4.68	4.67	4.25 4.26	4.3	3
26/06/2007	Sunny	12:06	29.9 29.9	29.9	49.4 49.2	49.3	4.93 4.93	4.93	4.68 4.63	4.7	2
28/06/2007	Sunny	15:49	28.8 28.8	28.8	45.7 45.9	45.8	4.60 4.60	4.60	5.63 5.66	5.7	1
30/06/2007	Sunny	17:15	27.8 27.8	27.8	64.0 63.8	63.9	6.02 6.00	6.01	3.66 3.63	3.7	2
03/07/2007	Sunny	18:15	28.7 28.7	28.7	66.2 66.5	66.4	5.25 5.27	5.26	5.24 5.26	5.3	7
05/07/2007	Sunny	18:10	29.0 29.0	29.0	69.2 69.0	69.1	6.06 6.03	6.05	6.06 6.03	6.1	5
07/07/2007	Sunny	17:07	29.3 29.3	29.3	67.9 67.2	67.6	5.81 5.76	5.79	4.79 4.86	4.8	1
09/07/2007	Sunny	15:37	29.4 29.4	29.4	60.4 60.0	60.2	5.32 5.29	5.31	4.33 4.27	4.3	5
11/07/2007	Sunny	18:20	29.2 29.2	29.2	65.8 65.1	65.5	6.09 6.02	6.06	3.78 3.85	3.8	7
13/07/2007	Sunny	11:06	29.4 29.4	29.4	52.3 52.0	52.2	4.85 4.83	4.84	3.96 4.02	4.0	1
16/07/2007	Sunny	09:46	29.4 29.4	29.4	54.5 54.1	54.3	5.17 5.13	5.15	3.96 3.91	3.9	1
18/07/2007	Sunny	15:09	29.3 29.3	29.3	49.2 48.8	49.0	4.35 4.31	4.33	4.08 4.00	4.0	1
		Min		27.8		45.7		4.3		3.6	1
		Max		29.9		69.2		6.1		6.1	18

Appendix F - Water Quality Monitoring Results

Water Quality Monitoring Results at S10

Date	Weather Condition	Sampling Time	Temperature (°C)		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)
			Value	Average	Value	Average	Value	Average	Value	Average	Value
20/06/2007	Fine	12:50	28.5 28.4	28.5	44.1 43.5	43.8	4.19 4.14	4.17	5.06 5.17	5.1	20
22/06/2007	Sunny	12:23	28.6 28.6	28.6	43.6 43.8	43.7	4.37 4.39	4.38	4.86 4.79	4.8	5
26/06/2007	Sunny	11:52	29.7 29.7	29.7	47.4 47.0	47.2	4.73 4.71	4.72	4.82 4.80	4.8	1
28/06/2007	Sunny	15:43	28.7 28.7	28.7	45.0 44.2	44.6	4.48 4.46	4.47	5.74 5.71	5.7	1
30/06/2007	Sunny	17:30	27.9 27.9	27.9	59.4 59.0	59.2	5.62 5.60	5.61	4.10 4.05	4.1	2
03/07/2007	Sunny	18:30	28.9 28.9	28.9	60.7 60.3	60.5	4.81 4.77	4.79	7.50 7.45	7.5	6
05/07/2007	Sunny	18:23	29.0 29.0	29.0	63.7 63.0	63.4	5.22 5.18	5.20	5.22 5.18	5.2	7
07/07/2007	Sunny	17:20	29.2 29.2	29.2	66.7 66.3	66.5	5.62 5.60	5.61	5.07 5.13	5.1	6
09/07/2007	Sunny	15:51	29.4 29.4	29.4	56.7 56.2	56.5	4.89 4.83	4.86	5.01 4.97	5.0	5
11/07/2007	Sunny	18:33	29.3 29.3	29.3	64.3 63.8	64.1	5.96 5.89	5.93	4.17 4.22	4.2	4
13/07/2007	Sunny	11:19	29.4 29.4	29.4	51.0 50.8	50.9	4.74 4.70	4.72	4.56 4.42	4.5	1
16/07/2007	Sunny	09:59	29.3 29.3	29.3	51.7 51.3	51.5	4.85 4.81	4.83	3.81 3.88	3.9	1
18/07/2007	Sunny	15:23	29.2 29.2	29.2	48.5 48.0	48.3	4.27 4.23	4.25	4.33 4.41	4.4	1
		Min		27.9		43.5		4.1		3.8	1
		Max		29.7		66.7		6.0		7.5	20

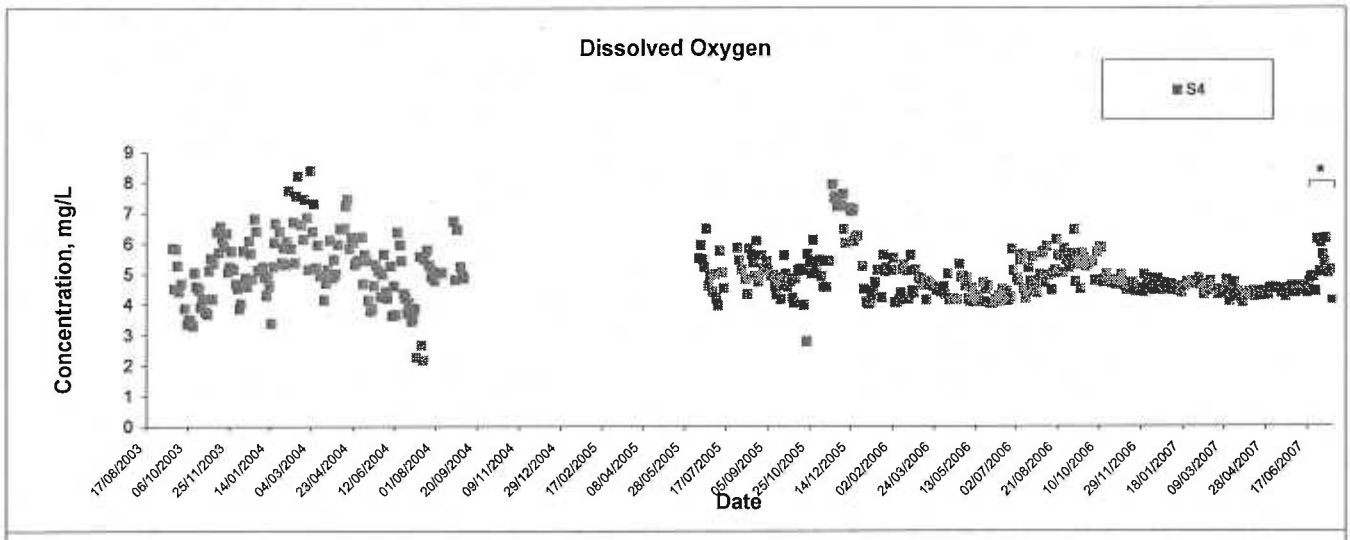


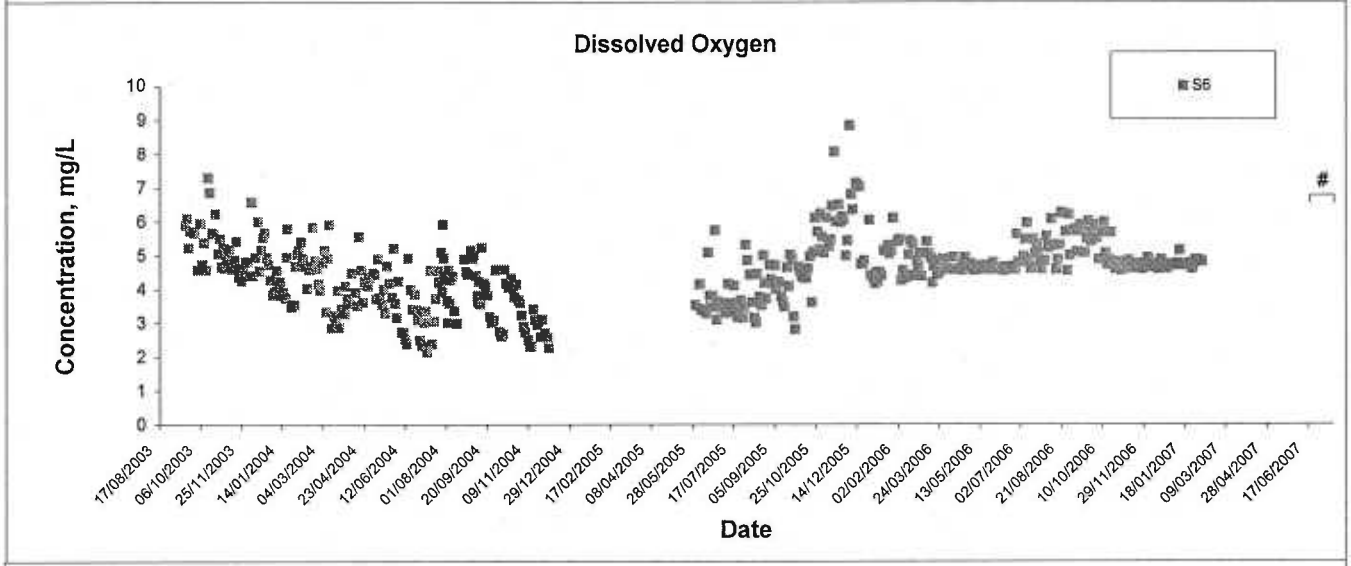
Note 1: Monitoring streams were dried up, and monitoring could not be conducted at S2 and S3 during the period for Dec 04 to May 05.

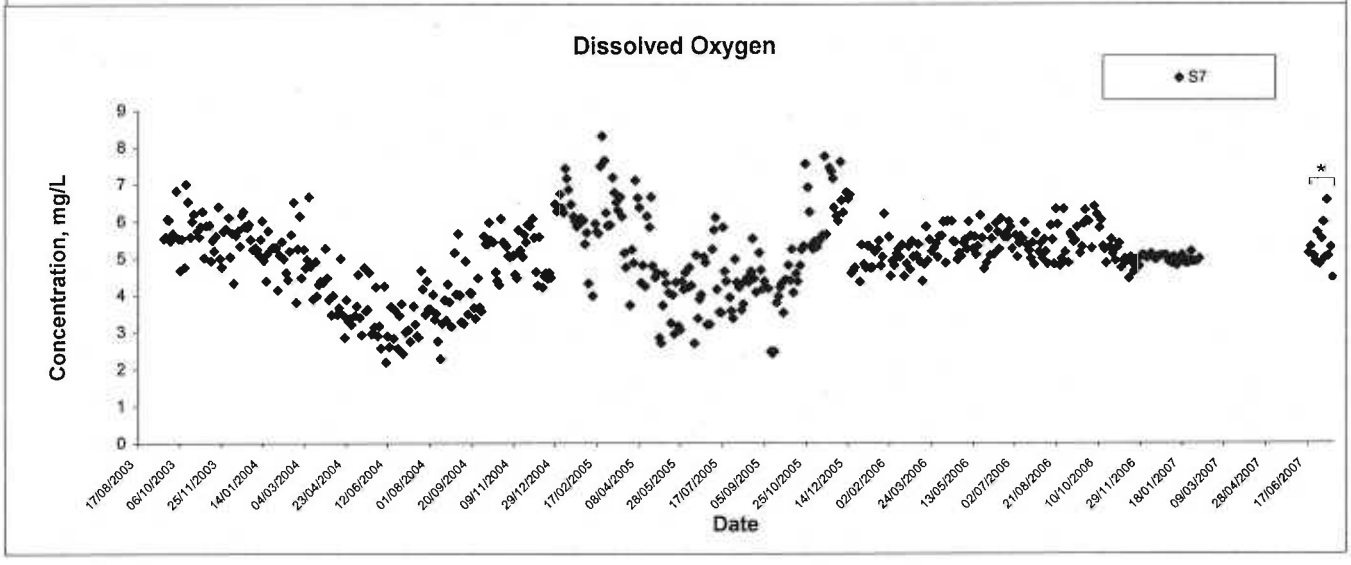
Note 2: The construction phase stream water quality monitoring for S1 and S2 was terminated on 9 Feb 07.

* Post-project local stream water quality monitoring was conducted at S1, S2 and S3 from 20 Jun 07 to 18 Jul 07.

ENSR | AECOM	Contract No.: HY/2002/24 Deep Bay Link Northern Section **Graphical Presentation of Stream Water Quality Monitoring Results**	SCALE	N.T.S.	DATE	Jul-07
		CHECK	PTPM	DRAWN	LLMC
		JOB NO.	60016782	APPENDIX F	Rev -







Note 1: Monitoring stream was dried up, and monitoring could not be conducted at S4 during the period for Sep 04 to Jun 05.

Note 2: Monitoring stream was dried up, and monitoring could not be conducted at S6 during the period for Dec 04 to May 05.

Note 3: The construction phase stream water quality monitoring for S6 and S7 was terminated on 9 Feb 07.

* Post-project local stream water quality monitoring was conducted at S4 and S7 from 20 Jun 07 to 18 Jul 07.

No post-project local stream water quality monitoring was conducted at S6 since the stream was dried out.

ENSR | AECOM	Contract No.: HY/2002/24 Deep Bay Link Northern Section **Graphical Presentation of Stream Water Quality Monitoring Results**	SCALE	N.T.S.	DATE	Jul-07
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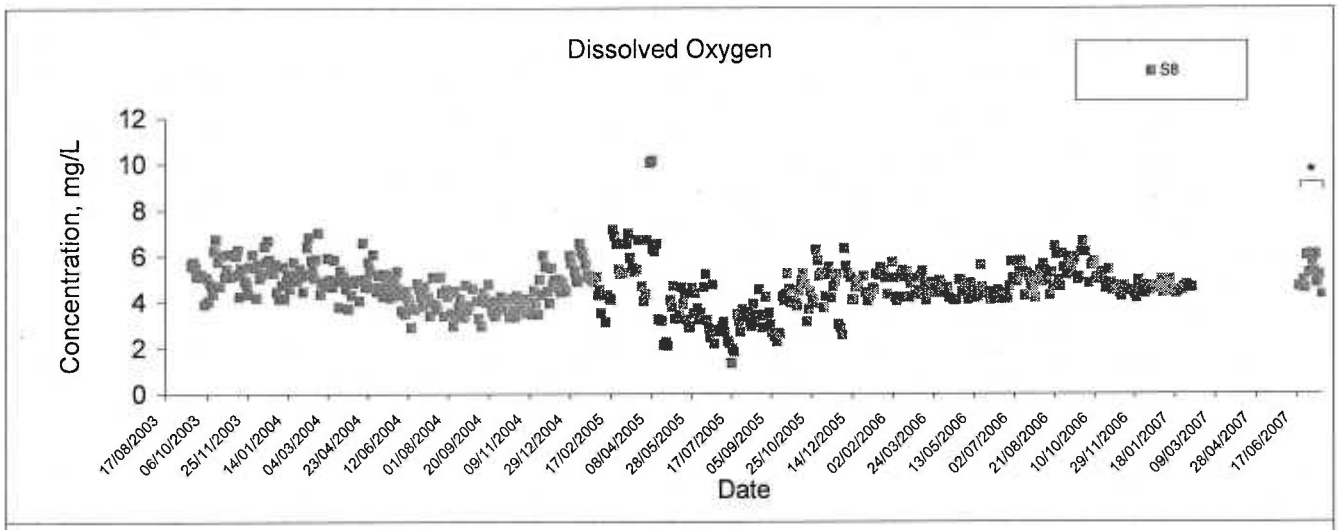

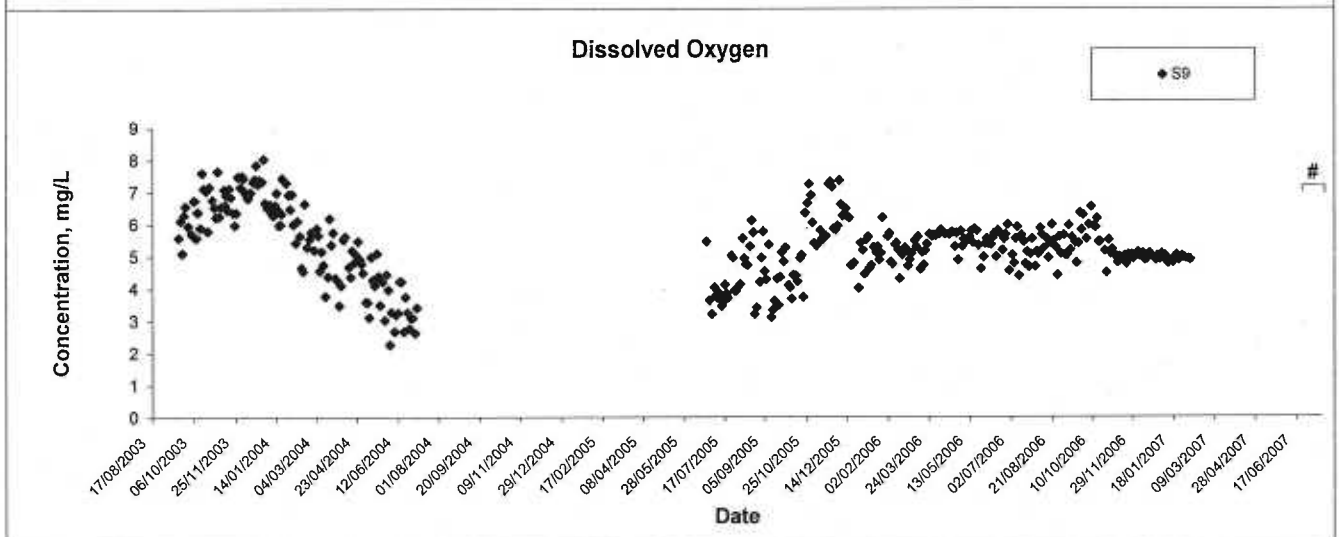

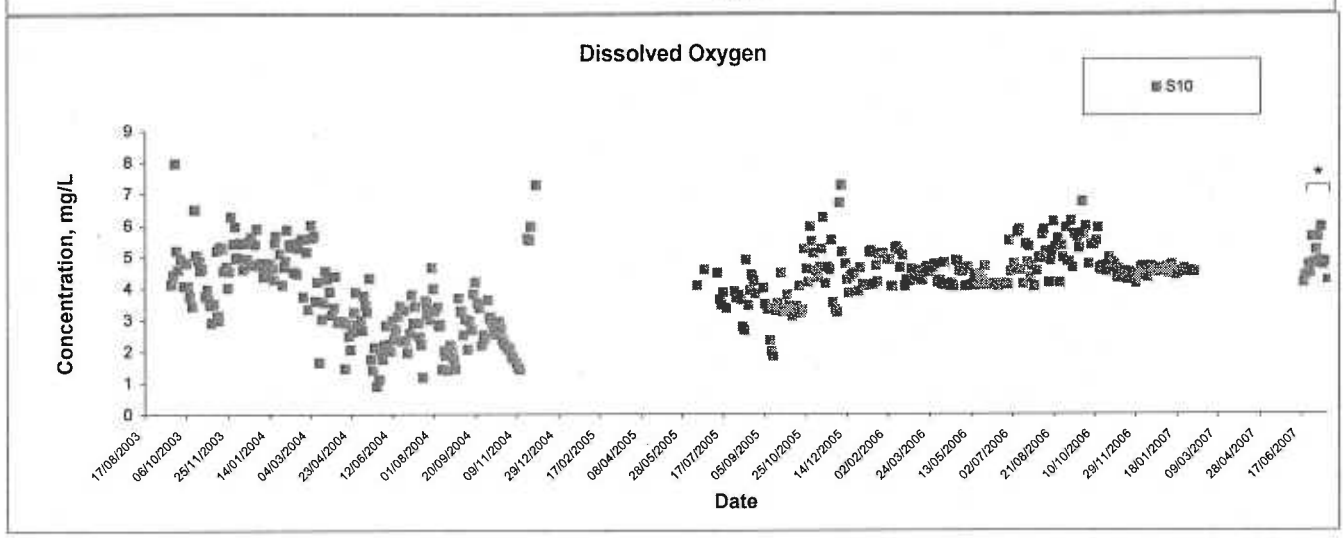

Note 1: Monitoring stream was dried up, and monitoring could not be conducted at S9 during the period for Jul 04 to Jun 05.

Note 2: Monitoring stream was dried up, and monitoring could not be conducted at S10 during the period for Dec 04 to Jun 05.

Note 3: The construction phase stream water quality monitoring for S8, S9 and S10 was terminated on 9 Feb 07.

* Post-project local stream water quality monitoring was conducted at S8 and S10 from 20 June 07 to 18 July 07.

No post-project local stream water quality monitoring was conducted at S9 since the access was blocked after the operation of Ha Tusen Weigh Station.

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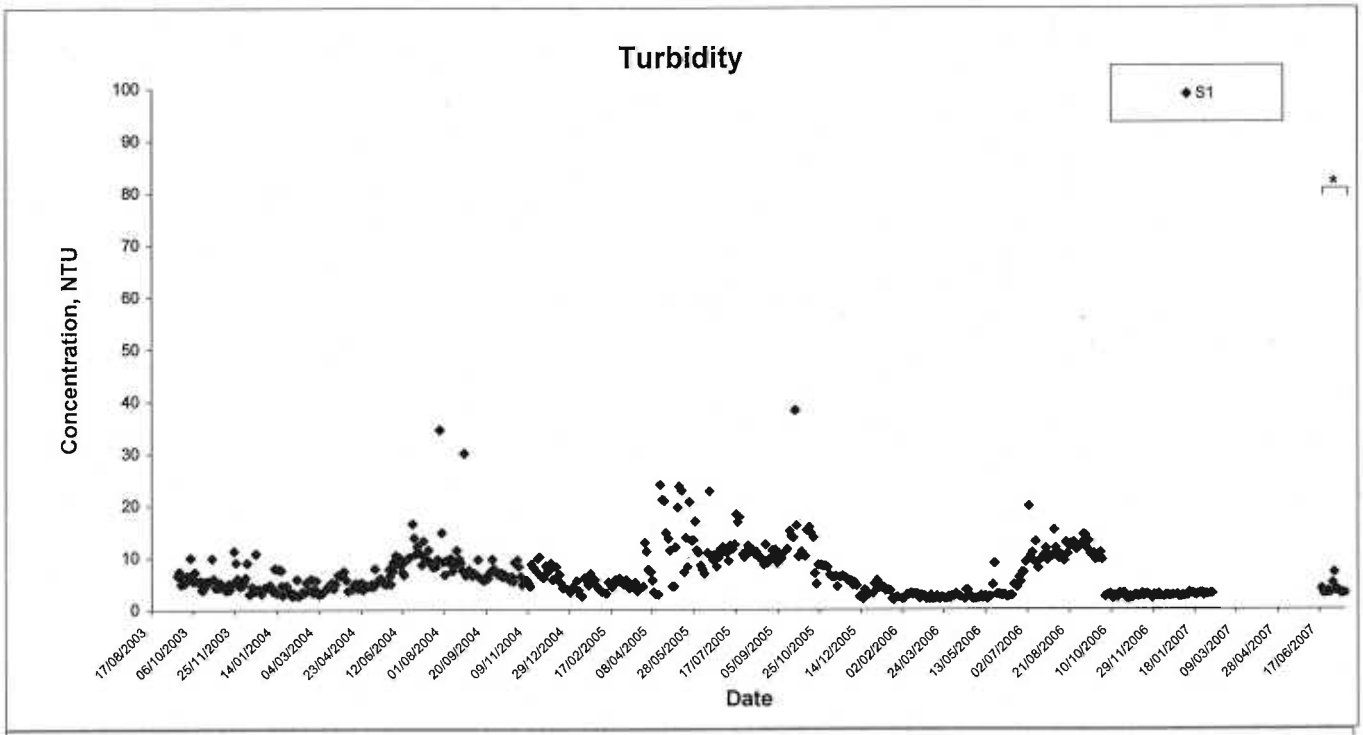

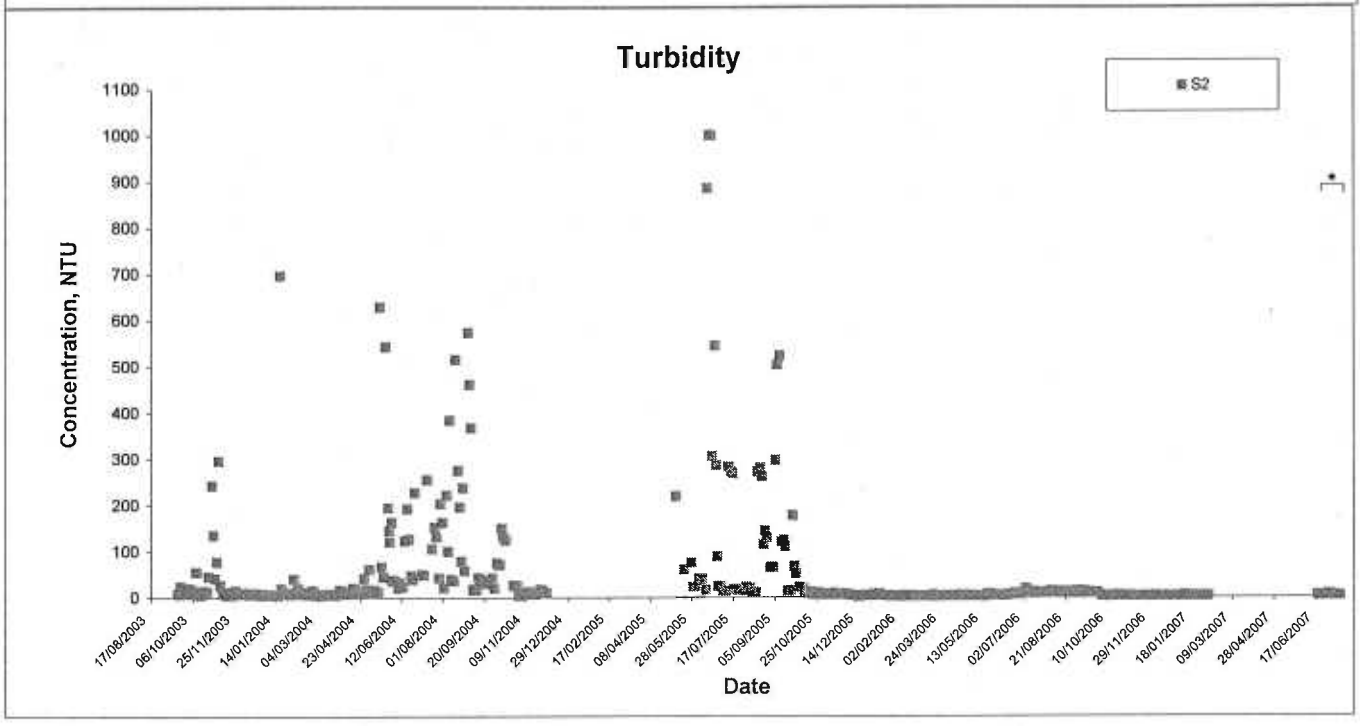

Note 1: Monitoring stream was dried up, and monitoring could not be conducted at S2 during the period for Dec 04 to May 05.

Note 2: The construction phase stream water quality monitoirng for S1 and S2 was terminated on 9 Feb 07.

Note 3: The turbidity result of S2 was over 1000 NTU on 20 Jun 05 since the muddy surface runoff was generated during heavy rainfall.

* Post-project local stream water quality monitoring was conducted at S1 and S2 from 20 Jun 07 to 18 Jul 07.

ENSR | AECOM	Contract No.: HY/2002/24 Deep Bay Link Northern Section **Graphical Presentation of Stream Water Quality Monitoring Results**	SCALE	N.T.S.	DATE	Jul-07
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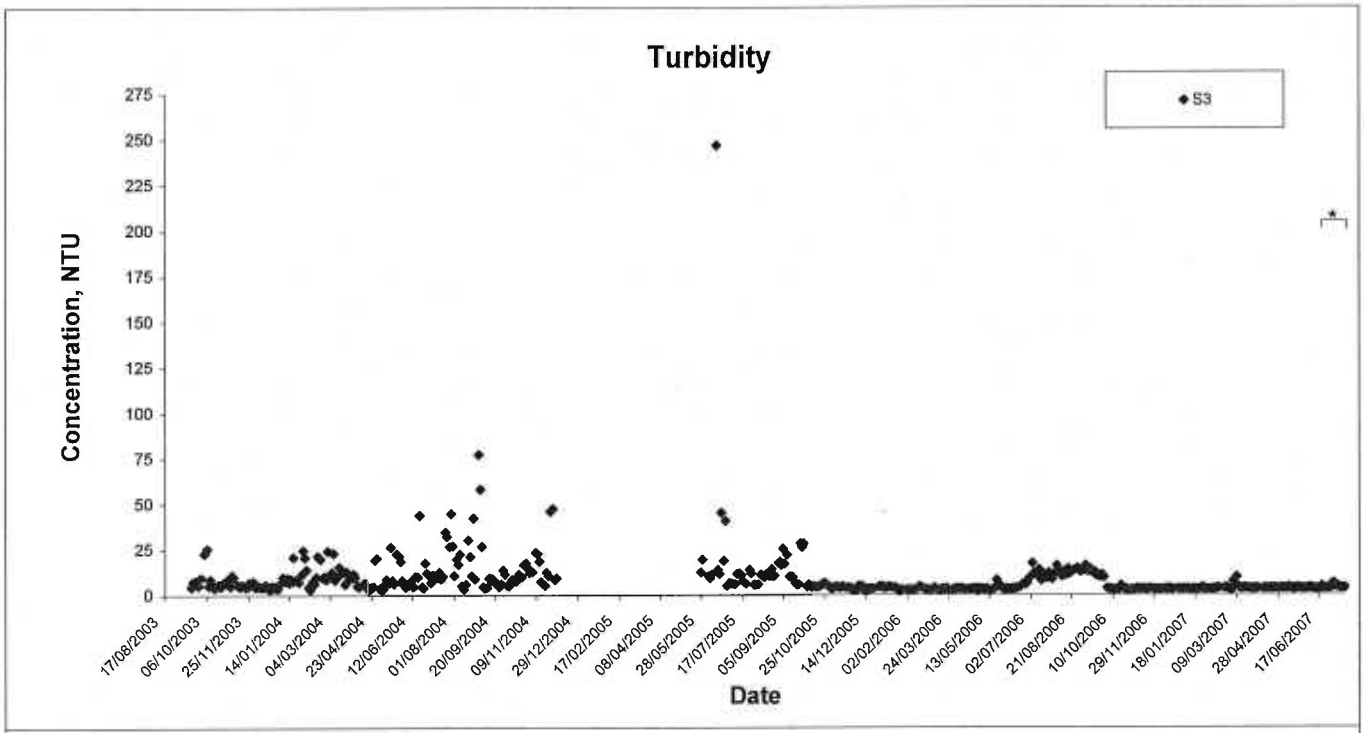
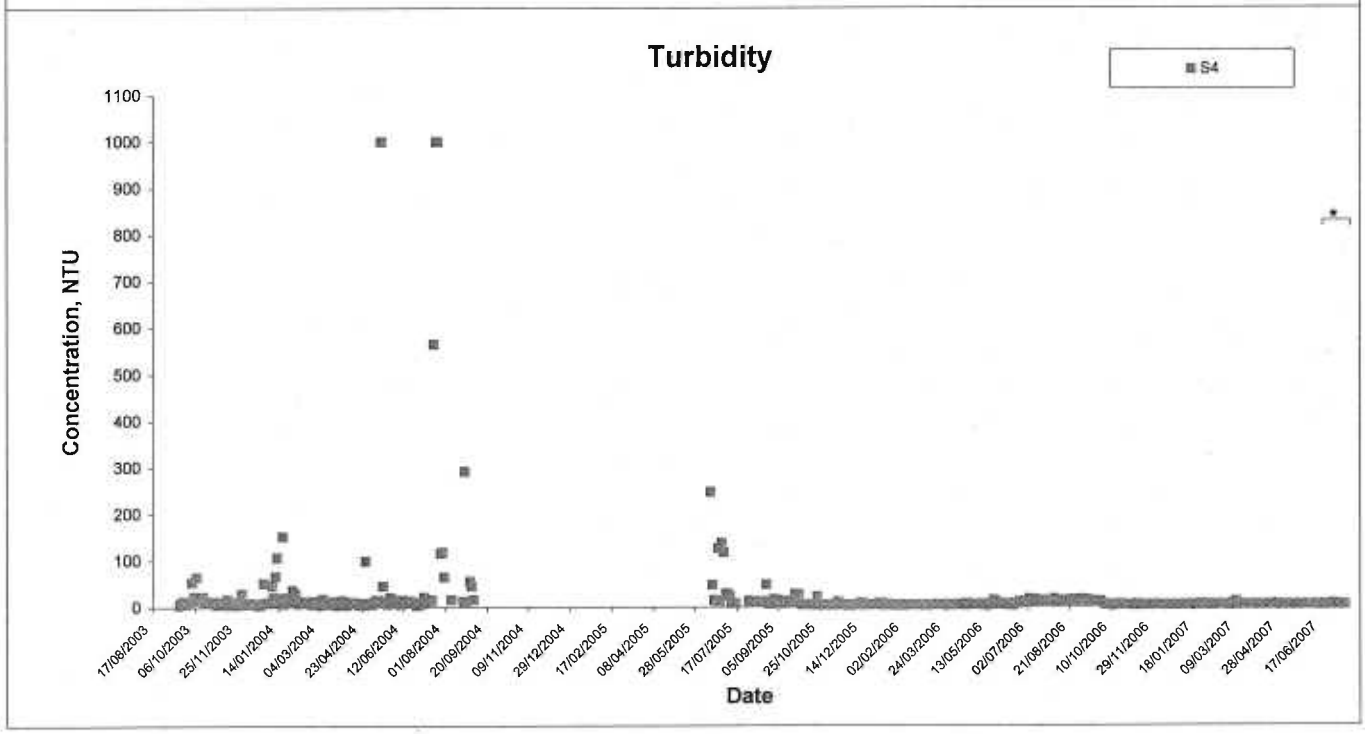
		JOB NO.	60016782	APPENDIX F	Rev -





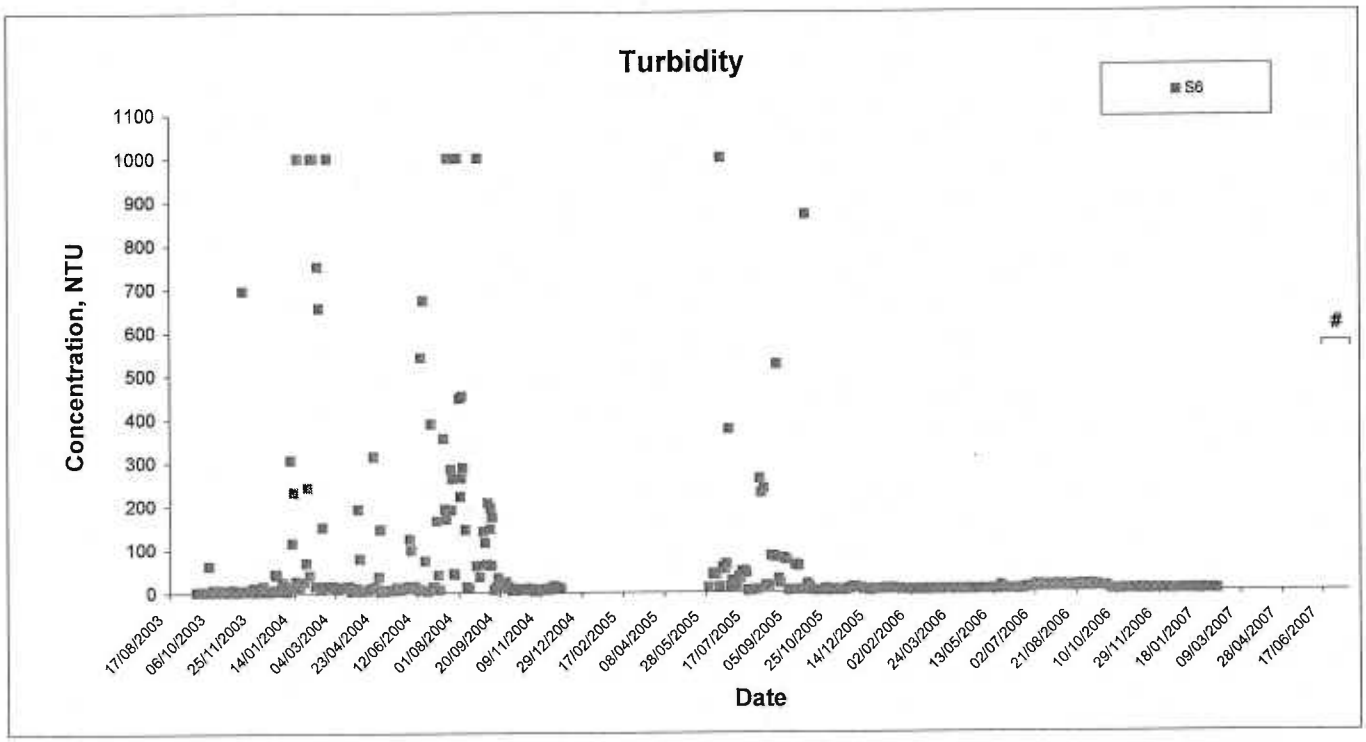
Note 1: Monitoring stream was dried up, and monitoring could not be conducted at S3 during the period for Dec 04 to May 05.

Note 2: Monitoring stream was dried up, and monitoring could not be conducted at S4 during the period for Sep 04 to Jun 05.

Note 3: The turbidity results of S4 were over 1000 NTU on 17 May 04 and 24 Jul 04 since the muddy surface runoff entered into the stream.

* Post-project local stream water quality monitoring was conducted at S3 and S4 from 20 Jun 07 to 18 Jul 07.

ENSR | AECOM	Contract No.: HY/2002/24 Deep Bay Link Northern Section **Graphical Presentation of Stream Water Quality Monitoring Results**	SCALE	N.T.S.	DATE	Jul-07
		CHECK	PTPM	DRAWN	LLMC
		JOB NO.	60016782	APPENDIX F	Rev -



Note 1: Monitoring stream was dried up, and monitoring could not be conducted at S6 during the period for Dec 04 to May 05.

Note 2: The construction phase stream water quality monitoring for S6 was terminated on 9 Feb 07.

Note 3: The turbidity results were over 1000 NTU on 19 Jan 04 and 7 Feb 04 since the muddy surface runoff entered into the stream during rainy weather.

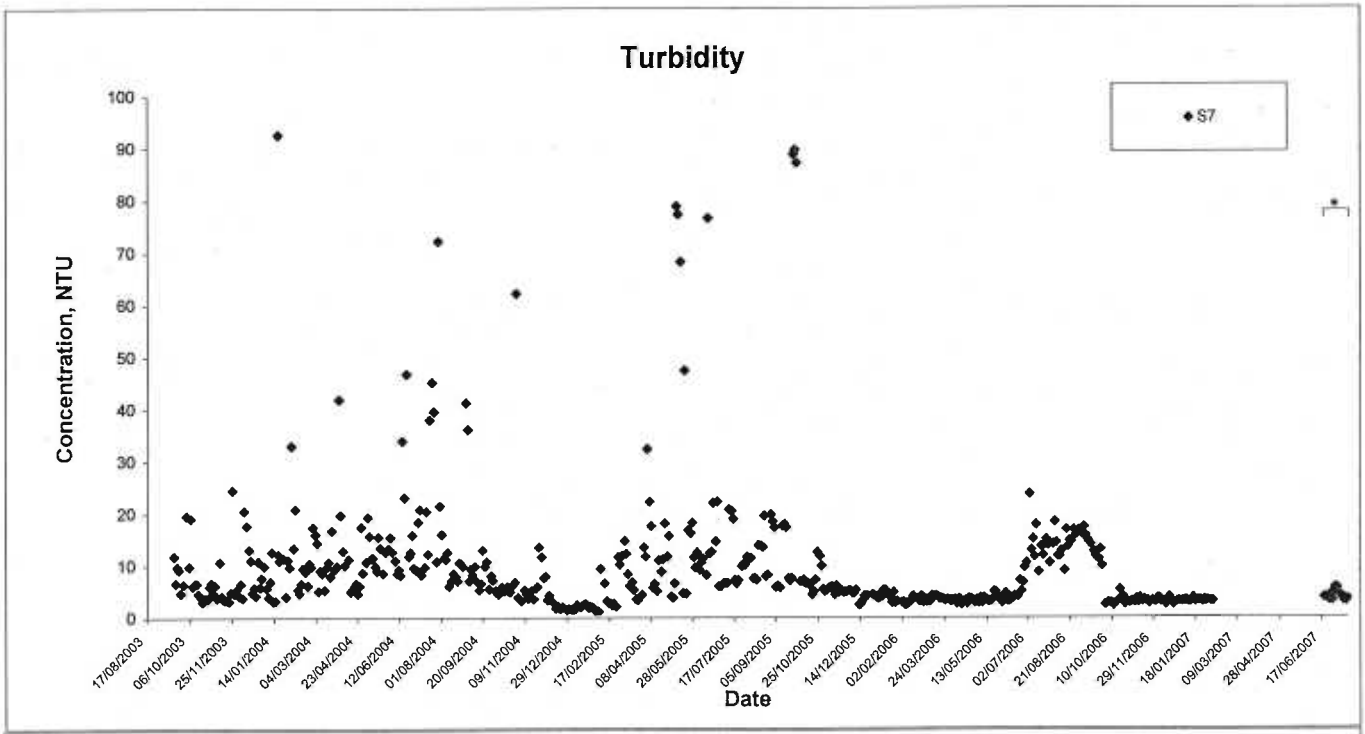
Note 4: The turbidity results were over 1000 NTU on 24 Feb 04, 19 & 31 Jul 04 since the muddy surface runoff was generated from the washing vehicle by water hose and entered into the stream.

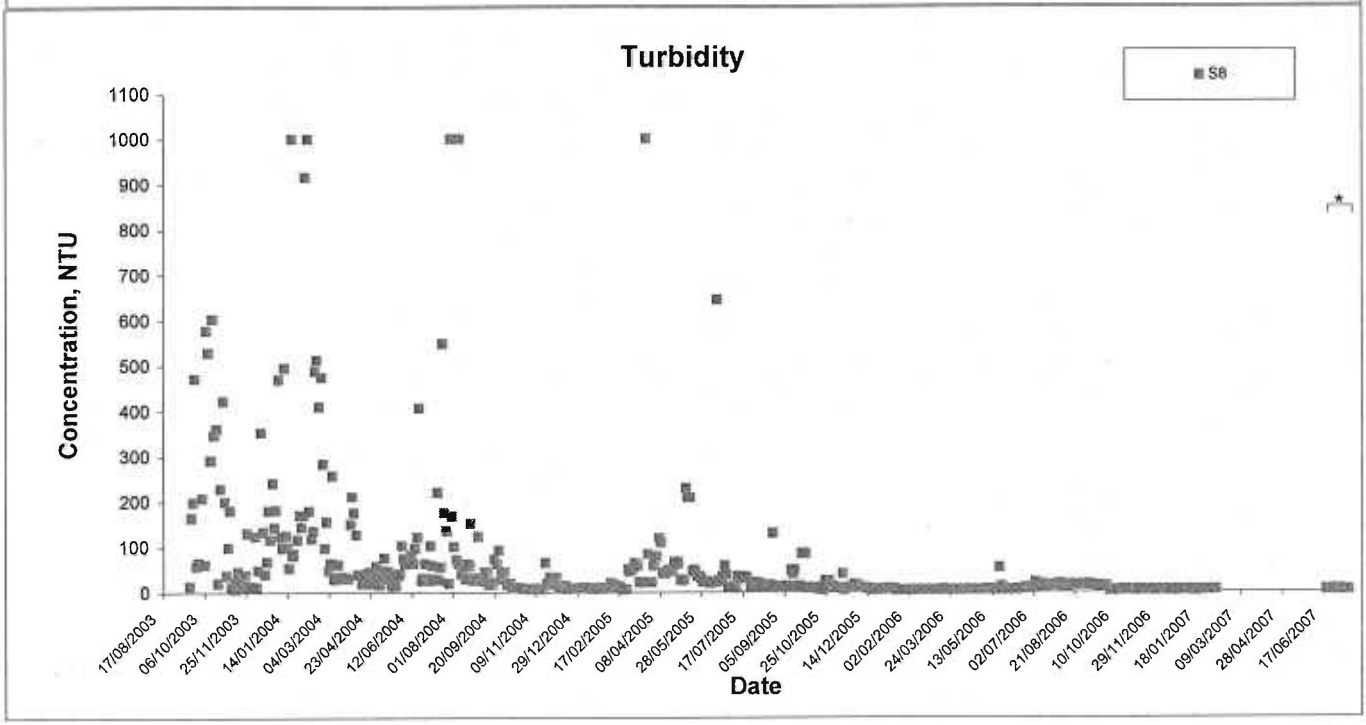
Note 5: The turbidity result was over 1000 NTU on 25 Aug 04 since the muddy surface runoff was generated from the haul road watering and entered into the stream.

Note 6: The turbidity result was over 1000 NTU on 16 Jun 05 since the muddy surface runoff was generated during heavy rainfall.

No post-project local stream water quality was conducted at S6 since the stream was dried out.

ENSR | AECOM	Contract No.: HY/2002/24 Deep Bay Link Northern Section **Graphical Presentation of Stream Water Quality Monitoring Results**	SCALE	N.T.S.	DATE	Jul-07
		CHECK	PTPM	DRAWN	LLMC
		JOB NO.	60016782	APPENDIX F	Rev -





Note 1: The construction phase stream water quality monitoring for S7 and S8 was terminated on 9 Feb 07.

Note 2: The turbidity result of S8 was over 1000 NTU on 19 Jan 04 since the muddy surface water entered into the stream during heavy rainfall.

Note 3: The turbidity results of S8 were over 1000 NTU on 7 Feb 04, 9 Aug 04 and 22 Mar 05 because the highly turbid water in black/grey colour from nearby road entered into the stream.

Note 4: The turbidity result of S8 was over 1000 NTU on 29 Jul 04 because of the non-project related effluents being discharged to the stream.

* Post-project local stream water quality monitoring was conducted at S7 and S8 from 20 Jun 07 to 18 Jul 07.

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		CHECK	PTPM	DRAWN	LLMC
		JOB NO.	60016782	APPENDIX	F
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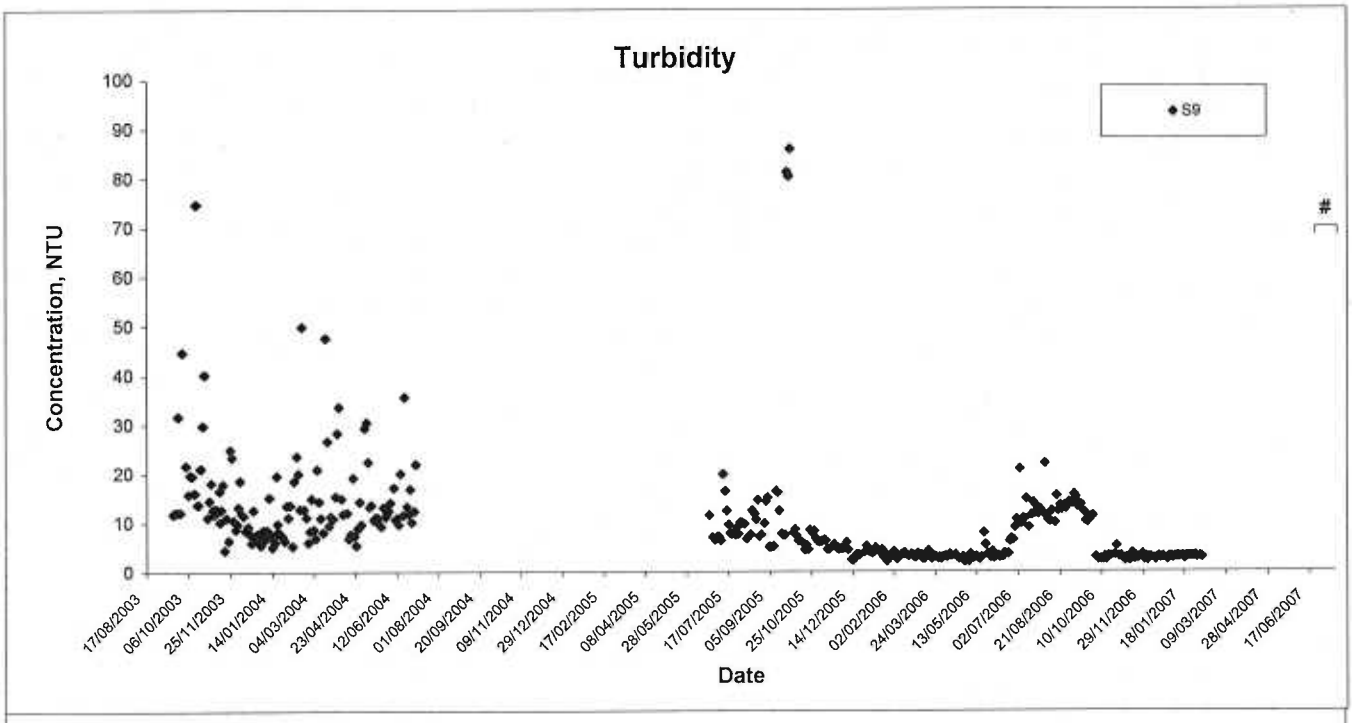

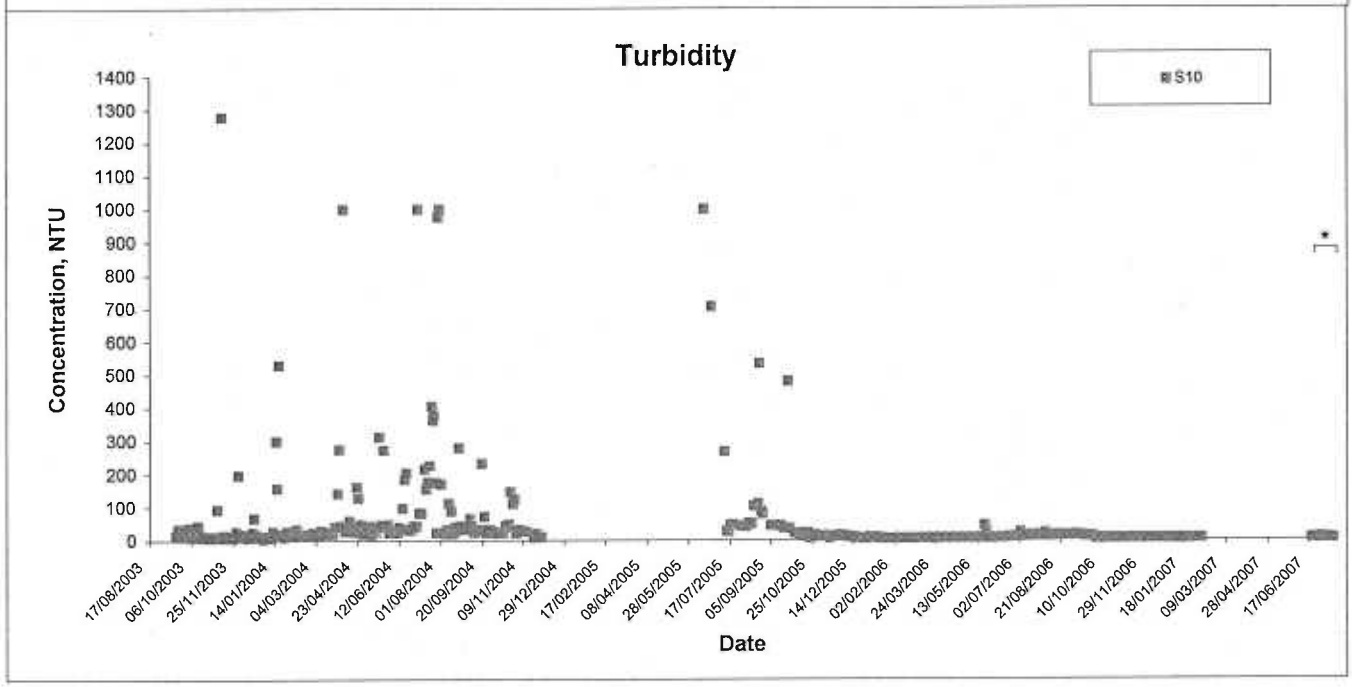

Note 1: Monitoring stream was dried up, and monitoring could not be conducted at S9 during the period for Jul 04 to Jun 05

Note 2: Monitoring stream was dried up, and monitoring could not be conducted at S10 during the period for Dec 04 to Jun 05

Note 3: The construction phase stream water quality monitoring for S9 and S10 was terminated on 9 Feb 07.

Note 4: The turbidity result of S10 was over 1000 NTU on 11 Nov 03 because muddy water was overflowing from the wastewater treatment system and discharged to the stream.

* Post-project local stream water quality monitoring at S10 was conducted from 20 Jun 07 to 18 Jul 07.

No post-project local stream water quality monitoring was conducted at S9 since the access was blocked after the operation of Ha Tusen Weigh Station.

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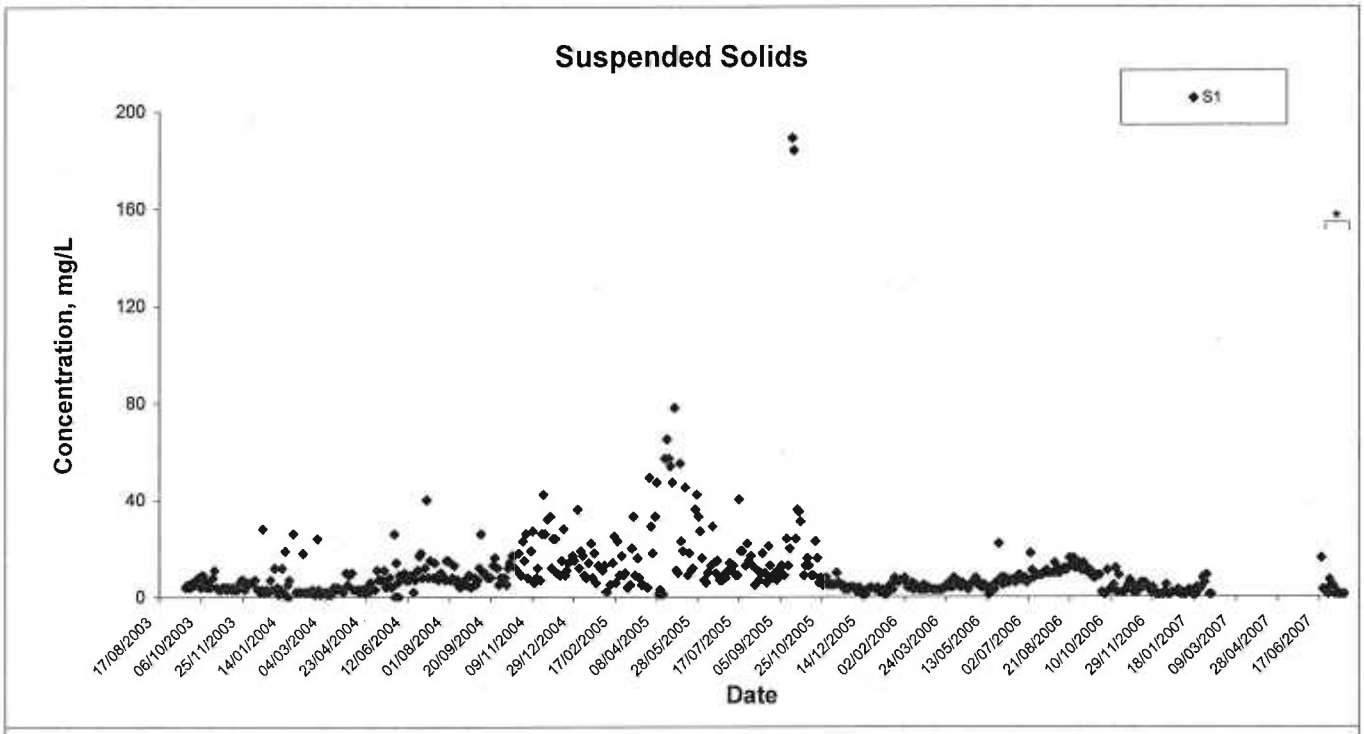

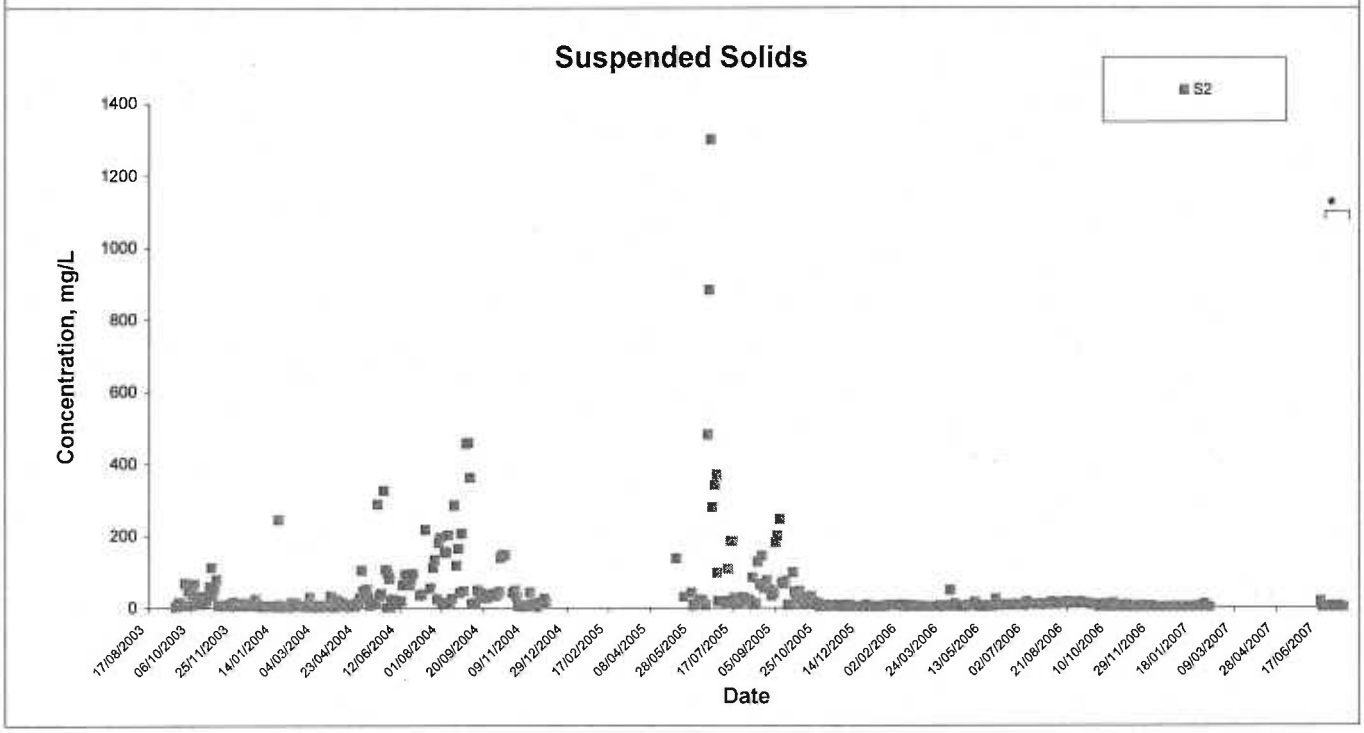

Note 1: Monitoring stream was dried up, and monitoring could not be conducted at S2 during the period for Dec 04 to May 05.

Note 2: The cosntruction phase stream water quality monitoring for S1 and S2 was terminated on 9 Feb 07.

* Post-project local stream water quality monitoring was conducted at S1 and S2 from 20 Jun 07 to 18 Jul 07.

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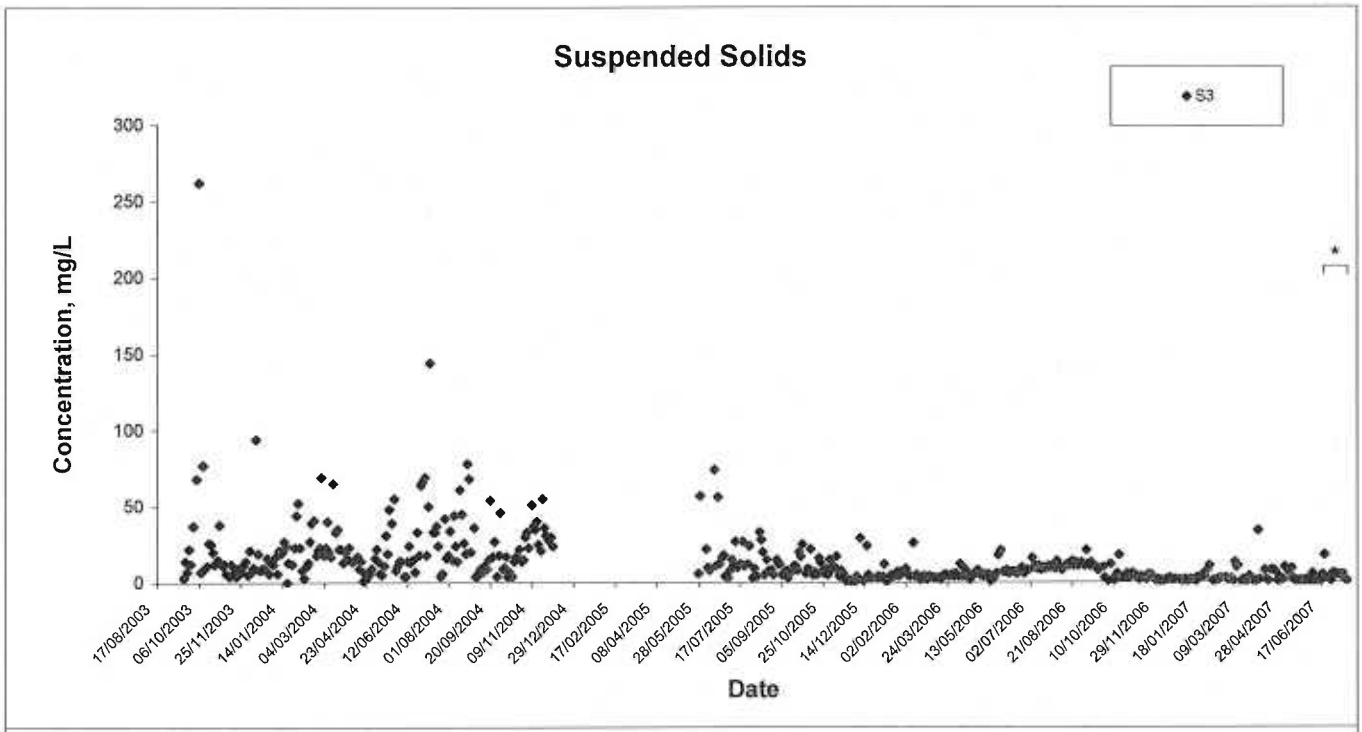

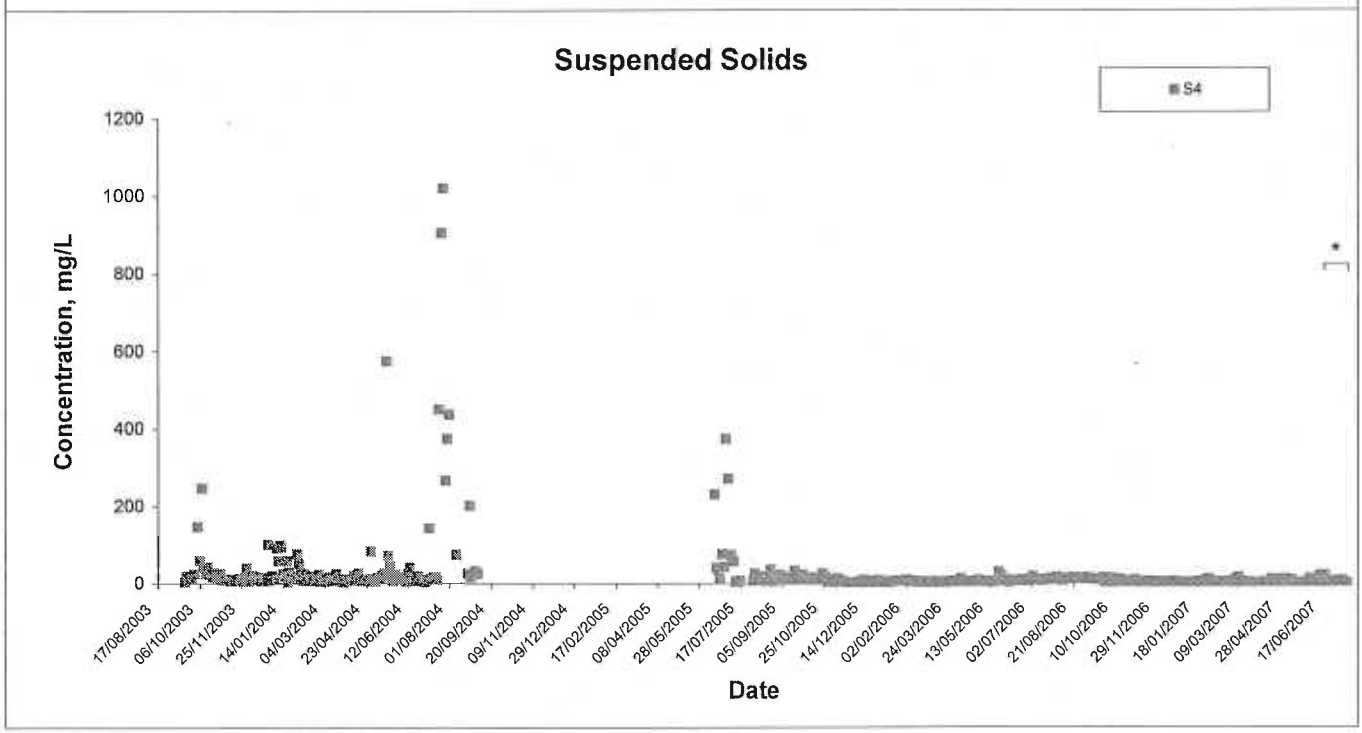

Note 1: Monitoring stream was dried up, and monitoring could not be conducted at S3 during the period for Dec 04 to May 05.

Note 2: Monitoring stream was dried up, and monitoring could not be conducted at S4 during the period for Sep 04 to Jun 05.

* Post-project local stream water quality monitoring was conducted at S3 and S4 from 20 June 07 to 18 July 07.

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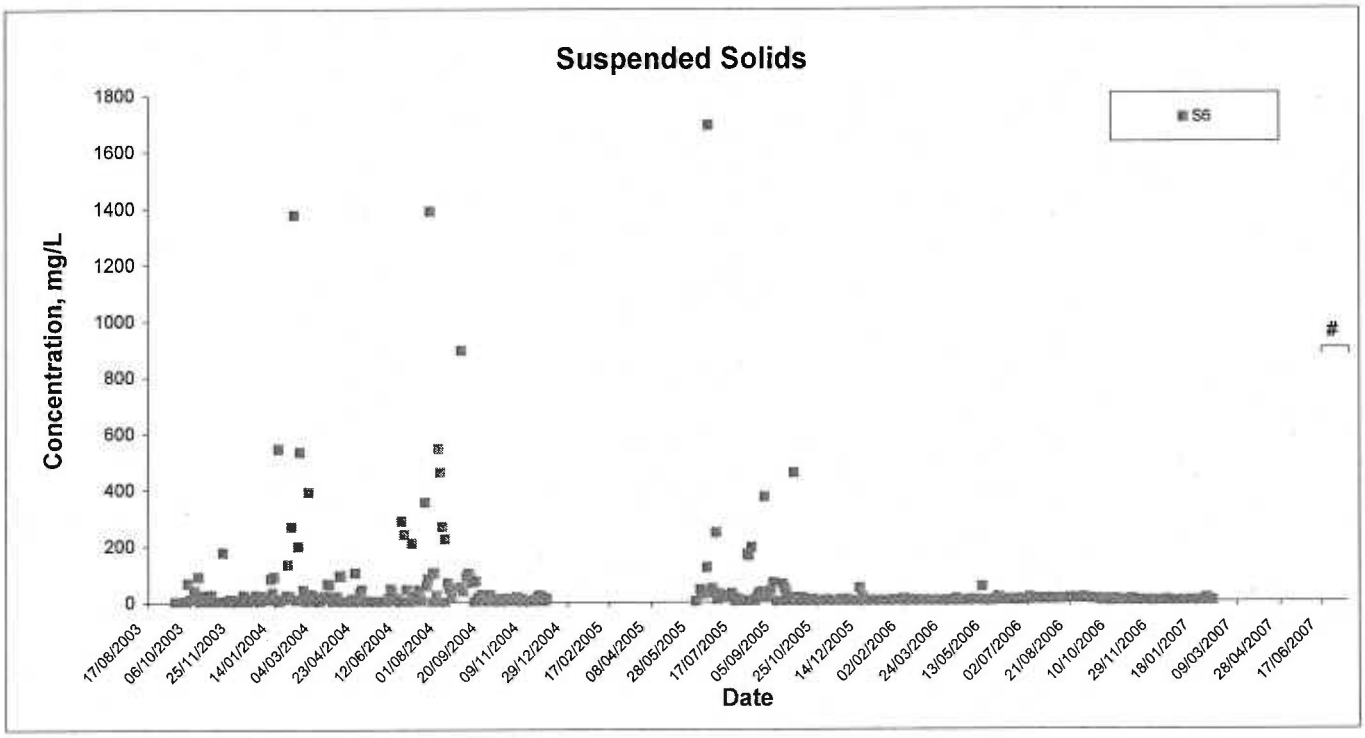

Note 1: Monitoring stream was dried up, and monitoring could not be conducted at S6 during the period for Dec 04 to May 05

Note 2: The construciton phase stream water quality monitoring for S6 was terminated on 9 Feb 07.

No post-project local stream water quality monitoring was conducted at S6 since the stream was dried out.

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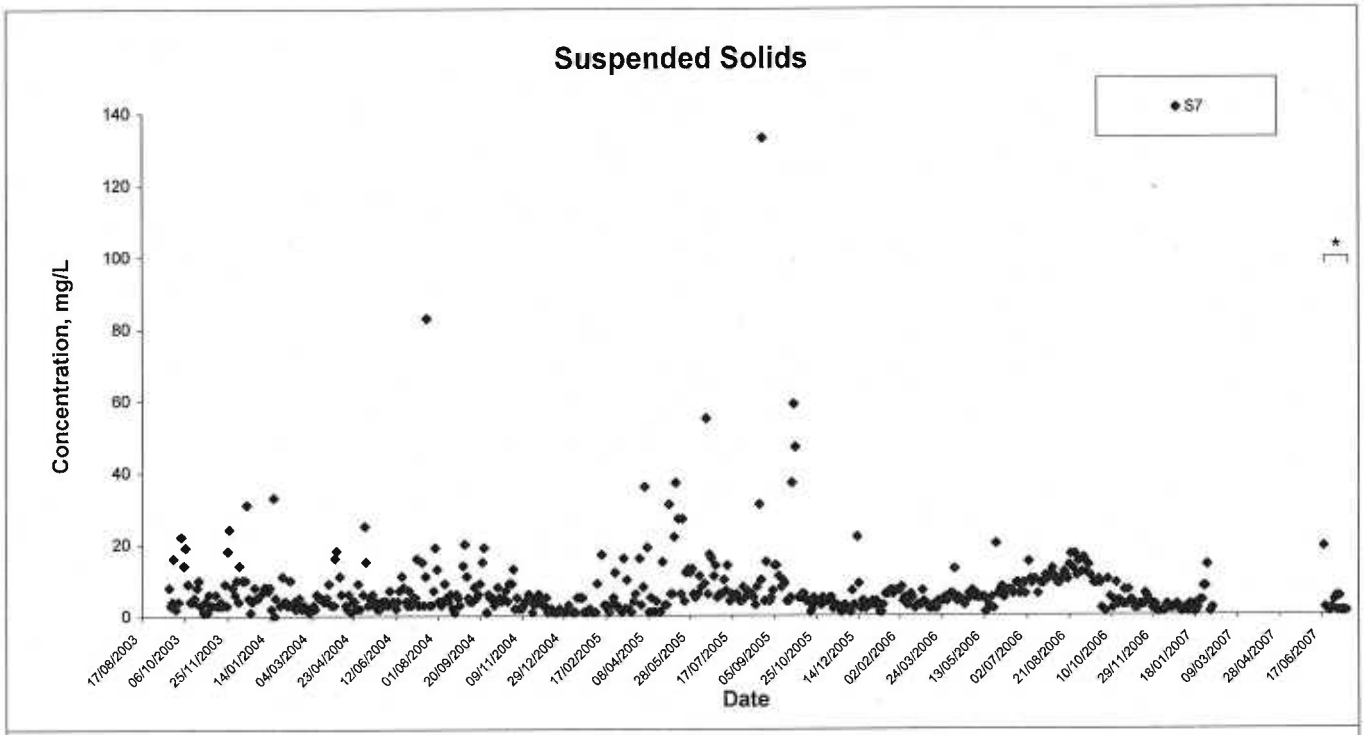

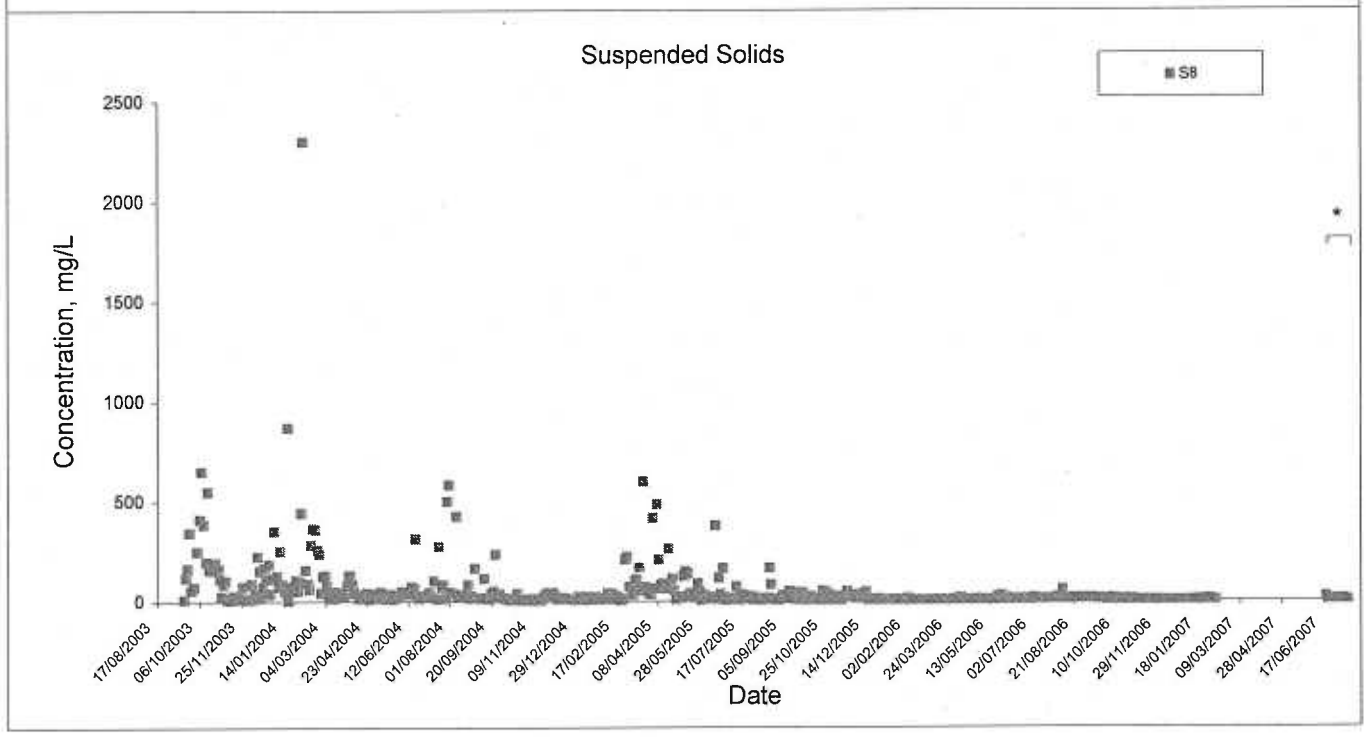

Note 1: The costruction phase stream water quality monitoring for S7 and S8 was terminated on 9 Feb 07.

* Post-project local stream water quality monitoring was conducted at S7 and S8 from 20 Jun 07 to 18 Jul 07.

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	Deep Bay Link Northern Section	CHECK	PTPM	DRAWN	LLMC
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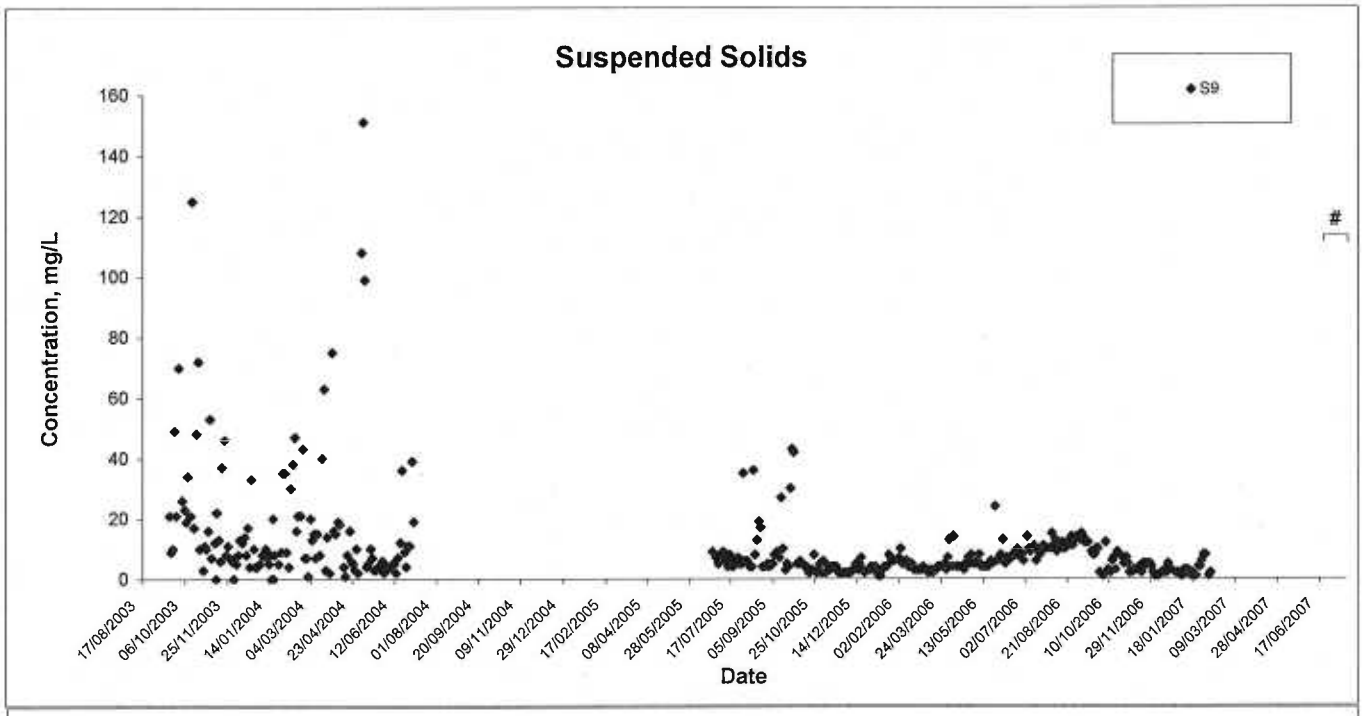

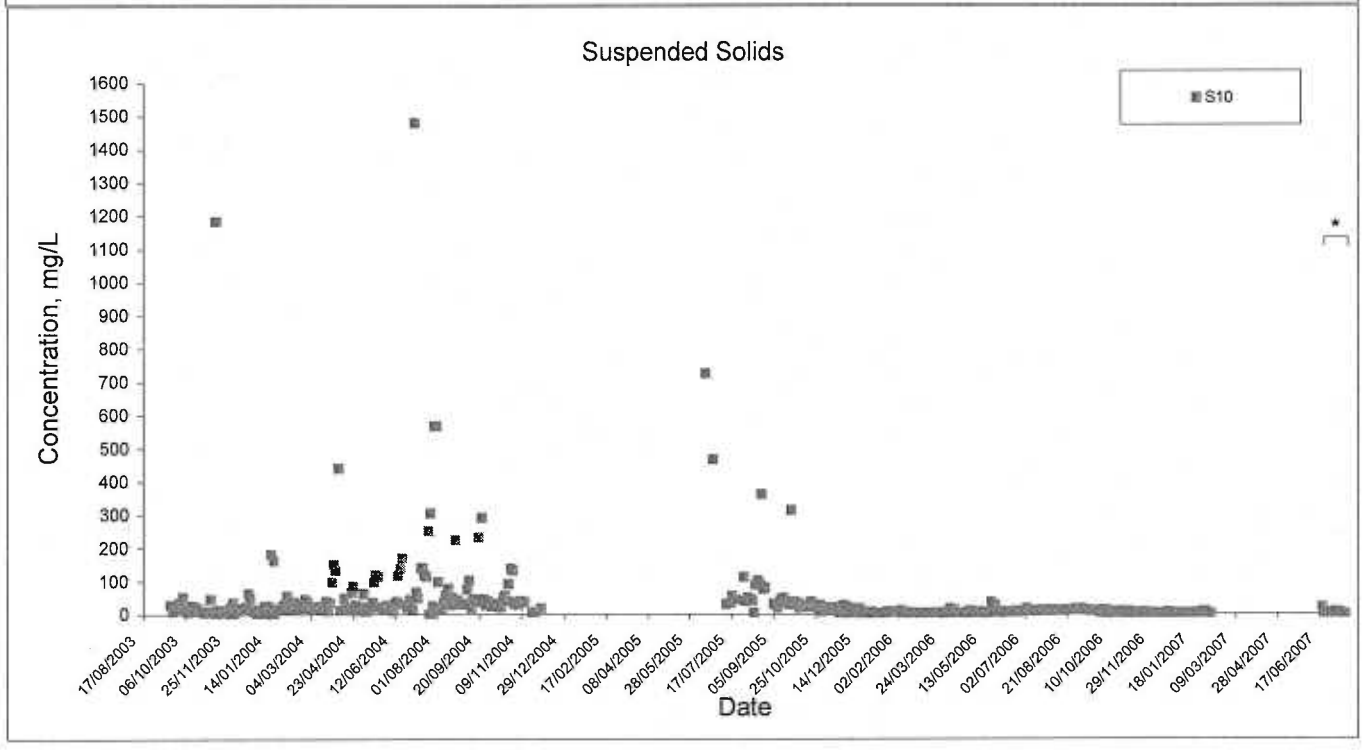

Note 1: Monitoring stream was dried up, and monitoring could not be conducted at S9 during the period for Jul 04 to Jun 05.

Note 2: Monitoring stream was dried up, and monitoring could not be conducted at S10 during the period for Dec 04 to Jun 05.

Note 3: The construction phase stream water quality monitoring for S9 and S10 was terminated on 9 Feb 07.

* Post-project local stream water quality monitoring at S10 was conducted from 20 Jun 07 to 18 Jul 07.

No post-project stream water quality monitoring was conducted at S9 since the access was blocked after the operation of Ha Tusen Weigh Station.

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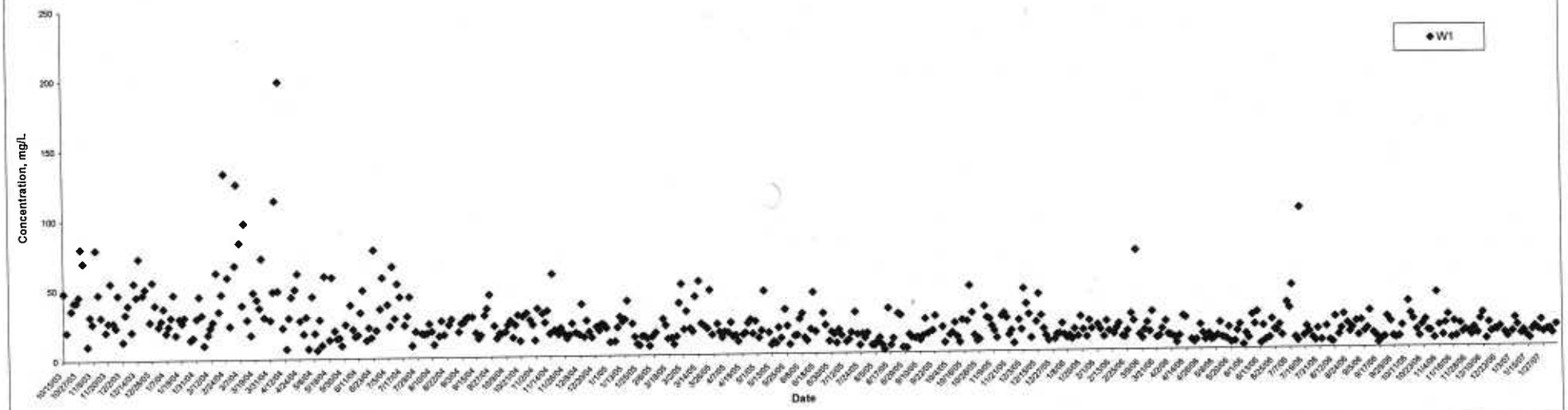
APPENDIX G
GRAPHICAL PRESENTATION OF COASTAL WATER QUALITY MONITORING RESULTS (FROM EM&A PROGRAMME OF HK-SWC)

Suspended Solids at Mid-Ebb Tide

W1



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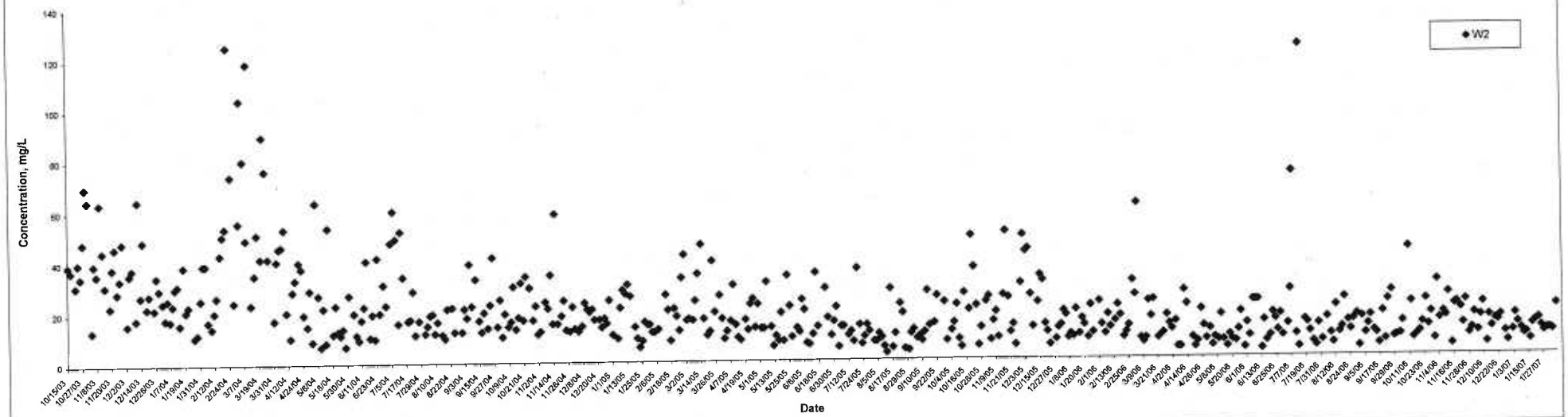

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Deep Bay Link Northern Section

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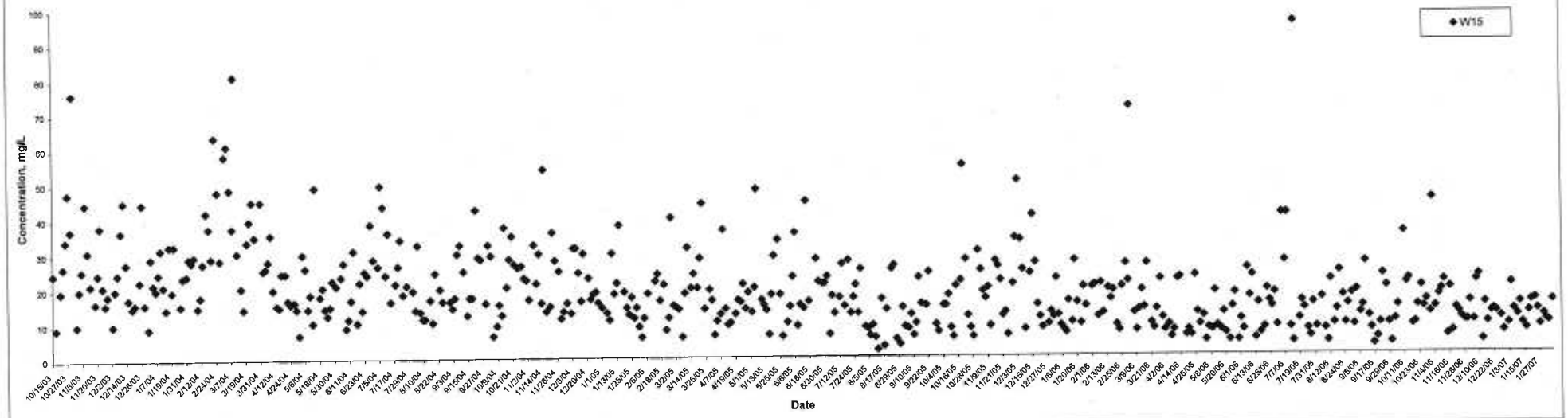
Suspended Solids at Mid-Ebb Tide

W15



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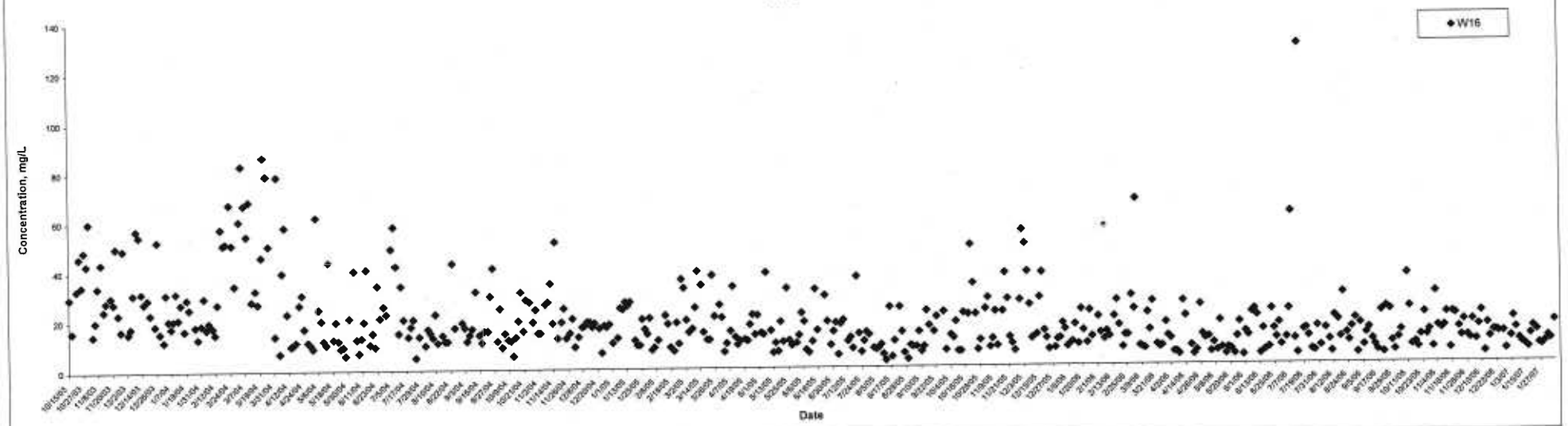

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Deep Bay Link Northern Section

Graphical Presentation of Coastal Water Quality Monitoring Results (From EM&A programme of HK-SWC)

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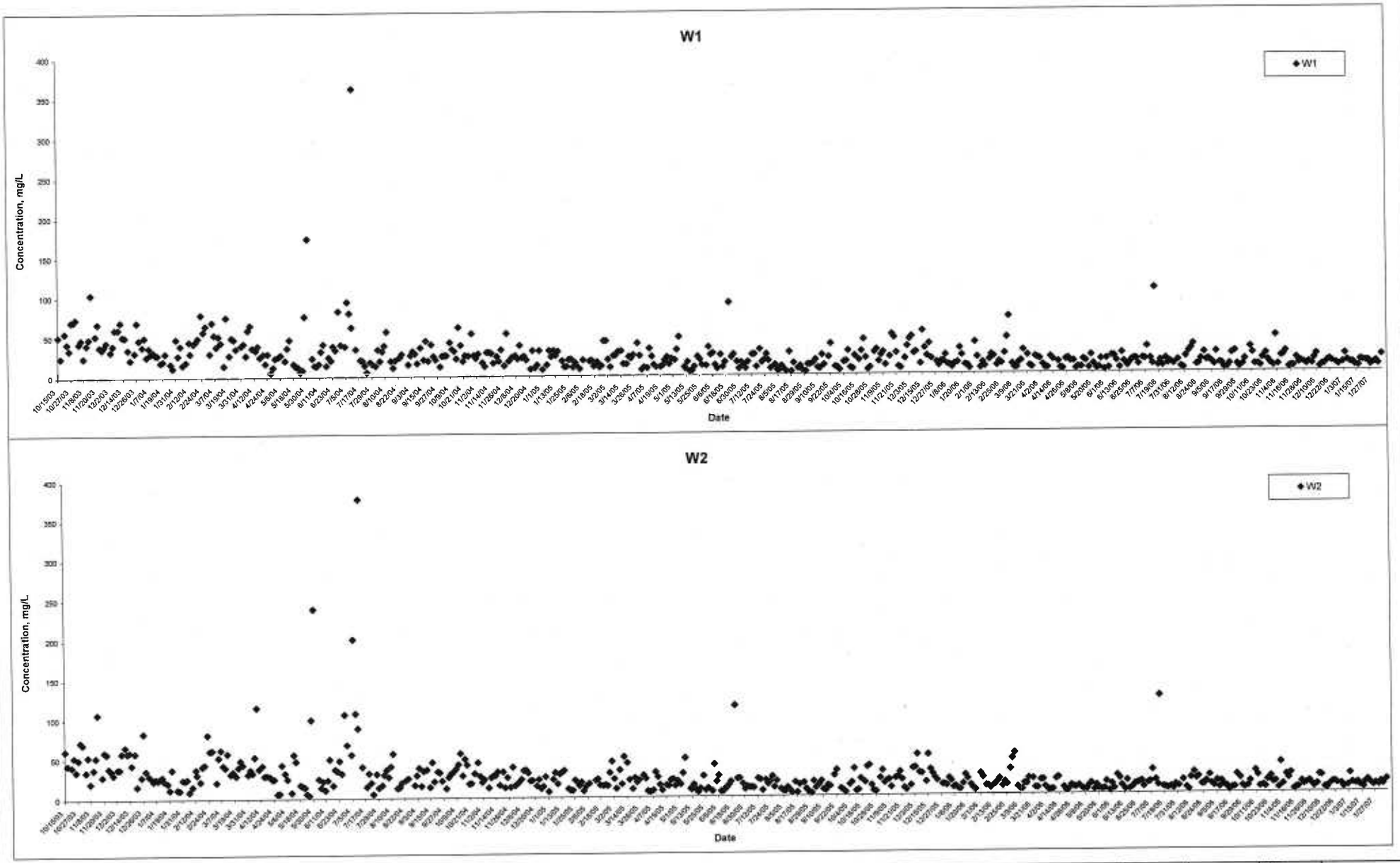
Suspended Solids at Mid-Flood Tide



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Graphical Presentation of Coastal Water Quality Monitoring Results (From EM&A programme of HK-SWC)

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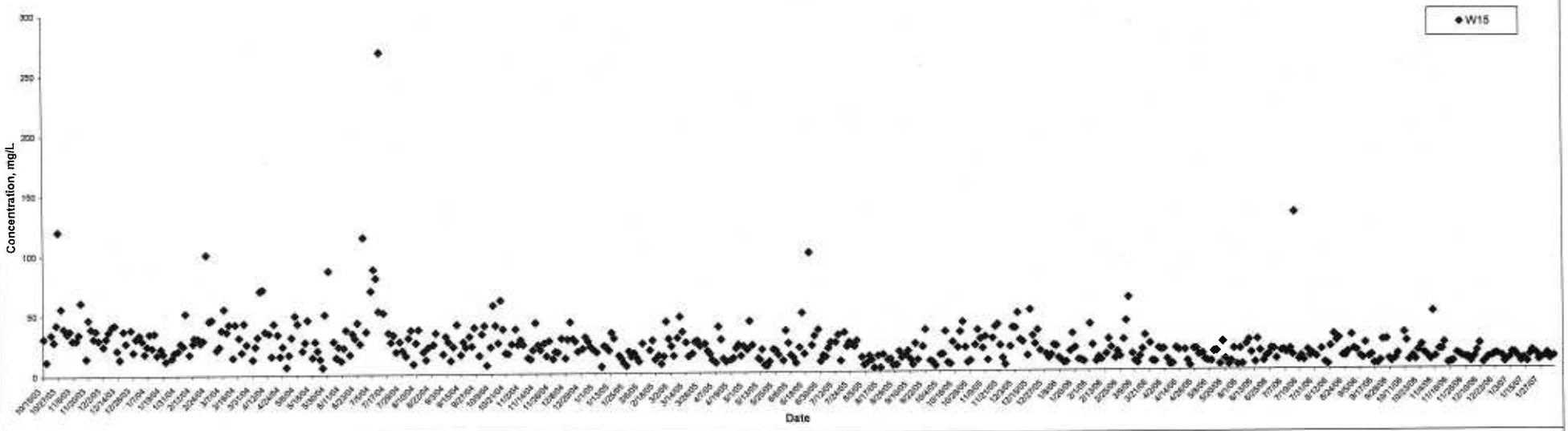
Suspended Solids at Mid-Flood Tide

W15



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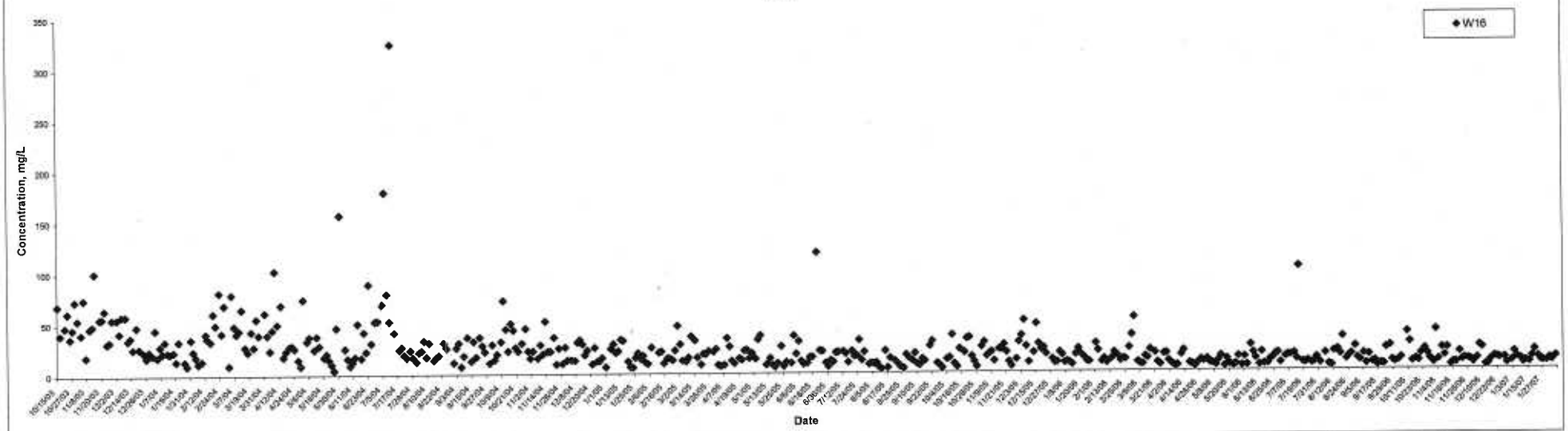

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Graphical Presentation of Coastal Water Quality Monitoring Results (From EM&A programme of HK-SWC)

SCALE	N.T.S.	DATE	Jul-07
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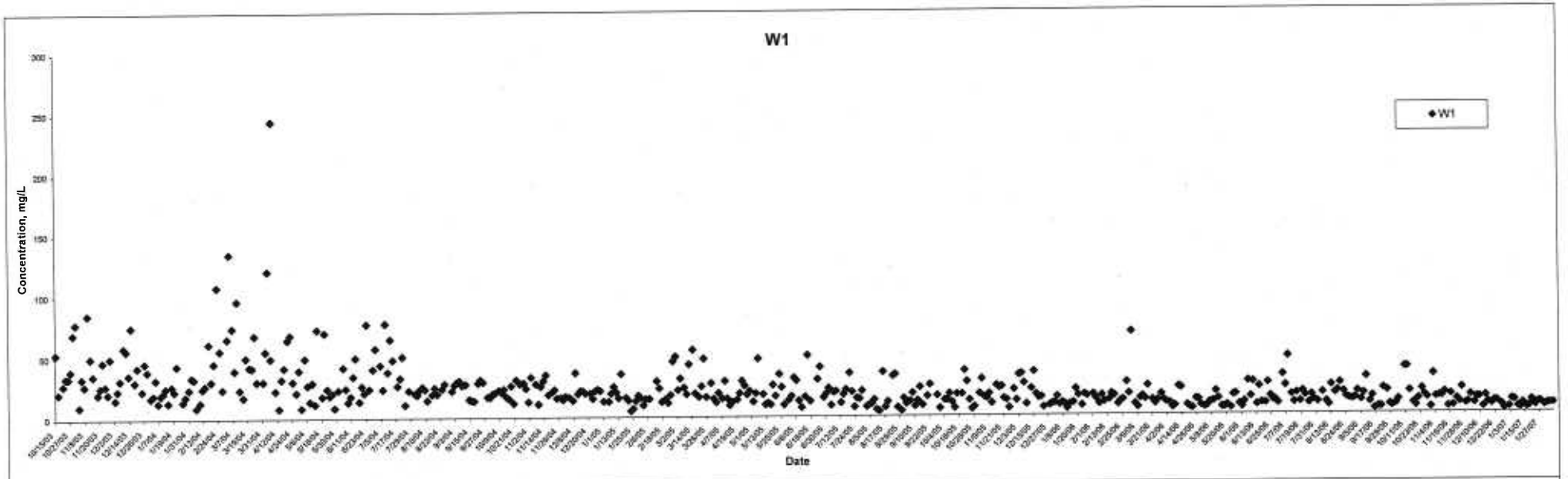
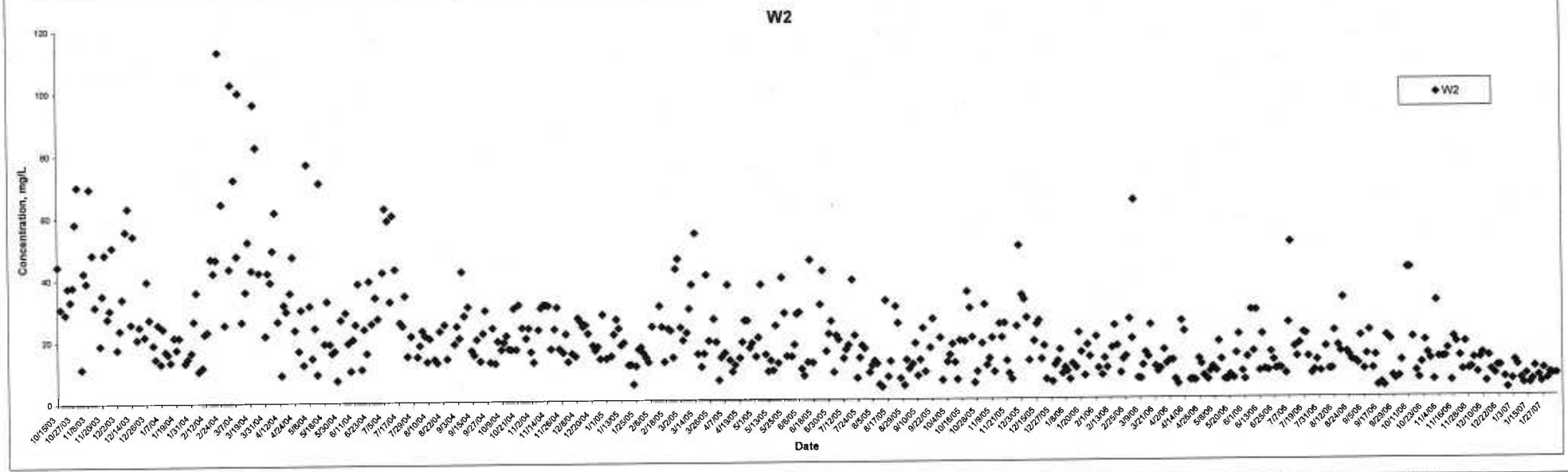
Turbidity at Mid-Ebb Tide





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Graphical Presentation of Coastal Water Quality Monitoring Results (From EM&A programme of HK-SWC)

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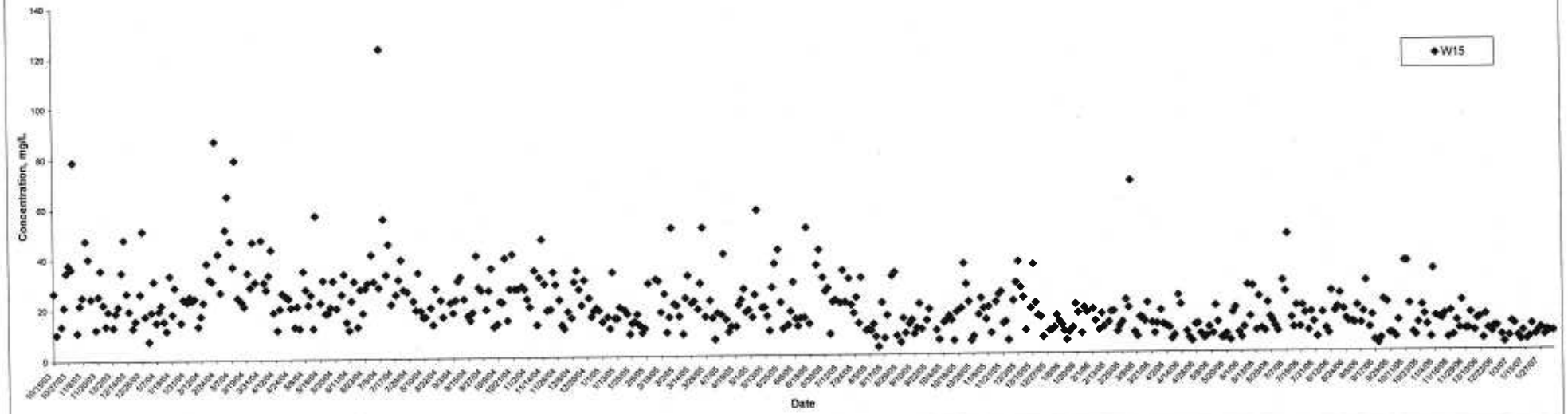
Turbidity at Mid-Ebb Tide

W15



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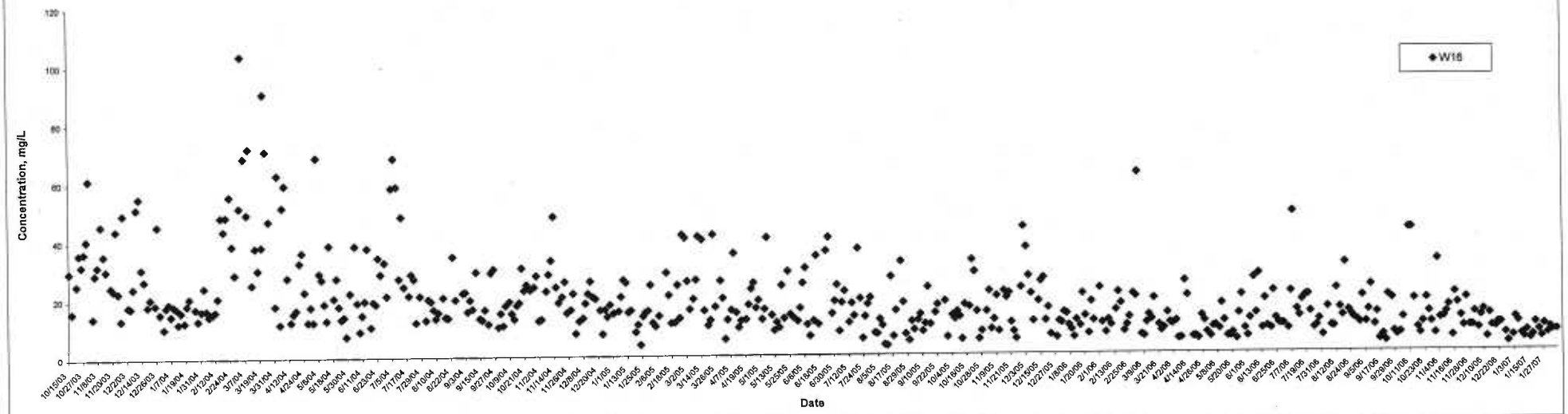

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Deep Bay Link Northern Section

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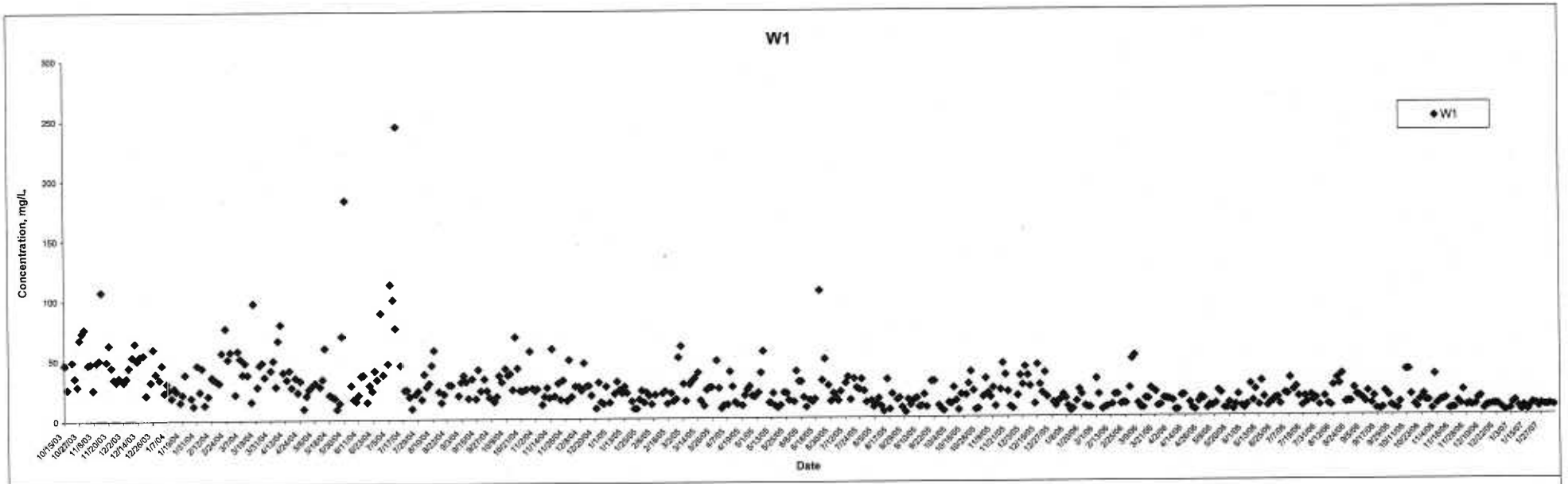
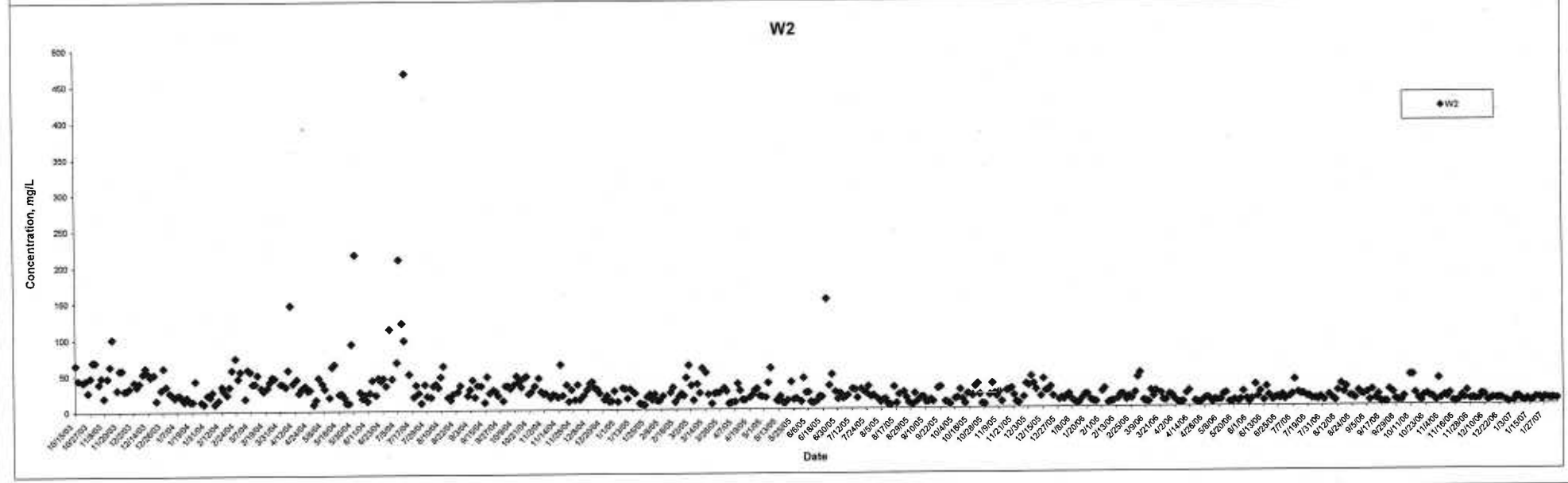
Turbidity at Mid-Flood Tide





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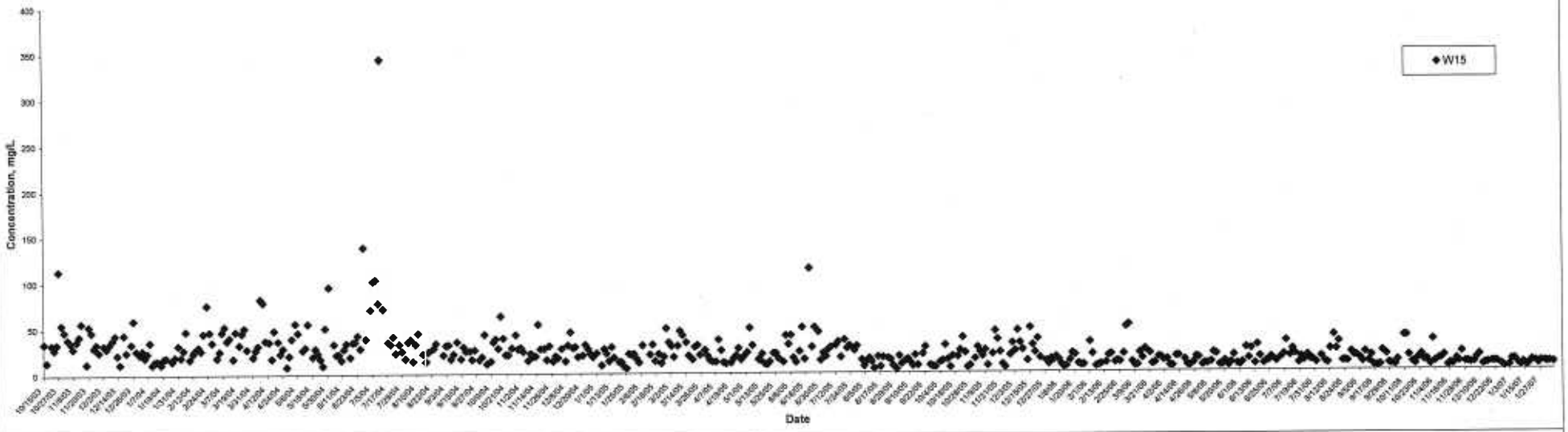
Turbidity at Mid-Flood Tide

W15



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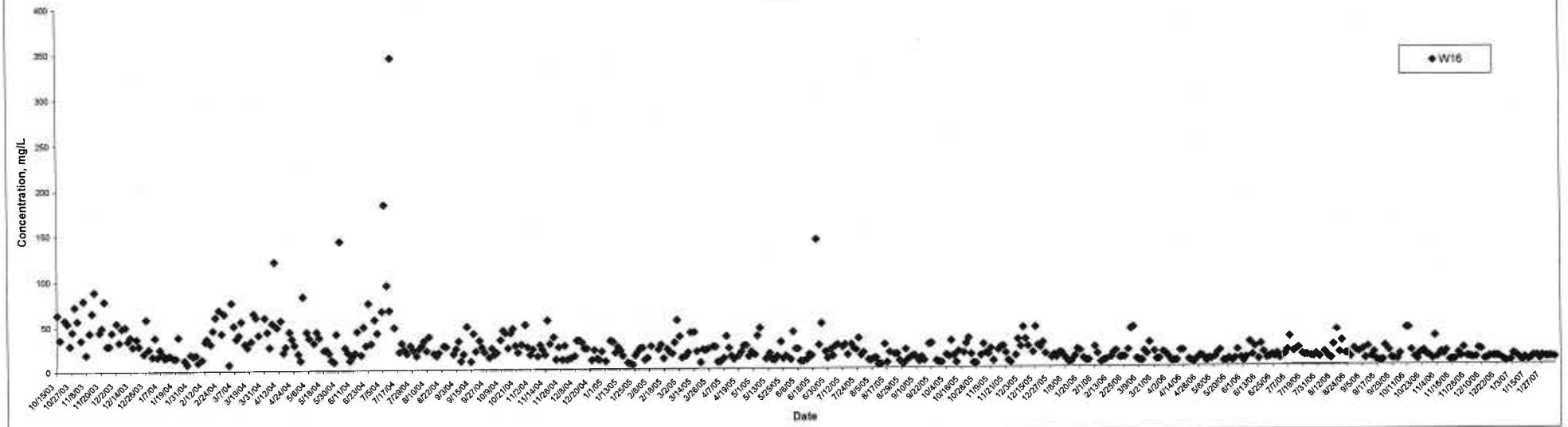

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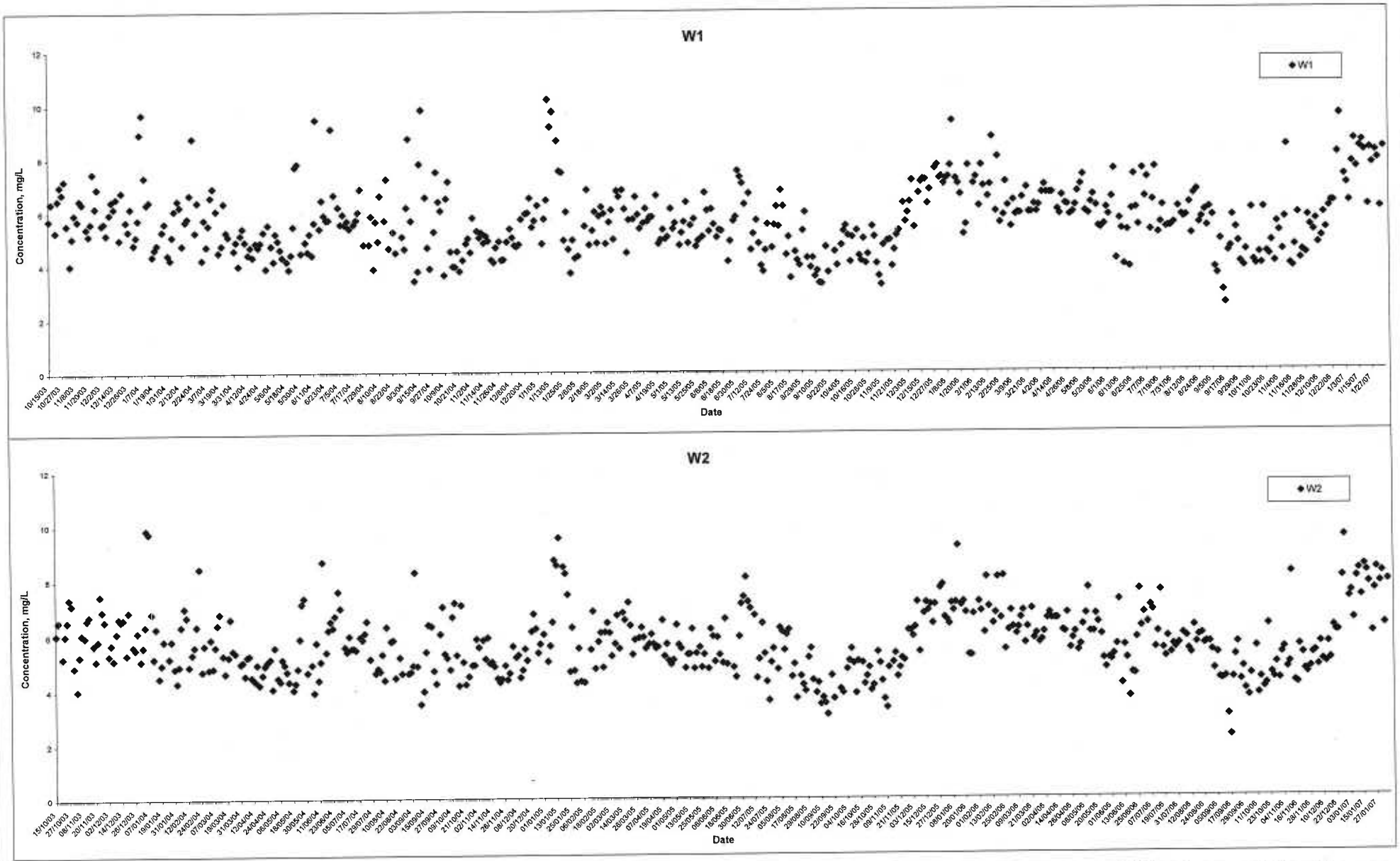
Dissolved Oxygen at Mid-Ebb Tide



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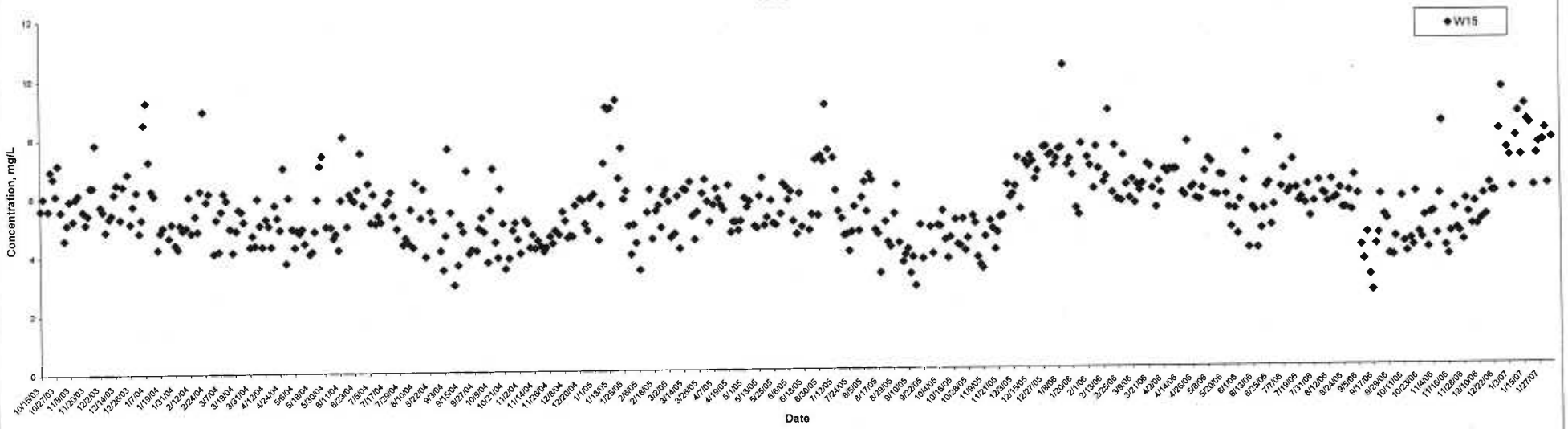
Dissolved Oxygen at Mid-Ebb Tide

W15



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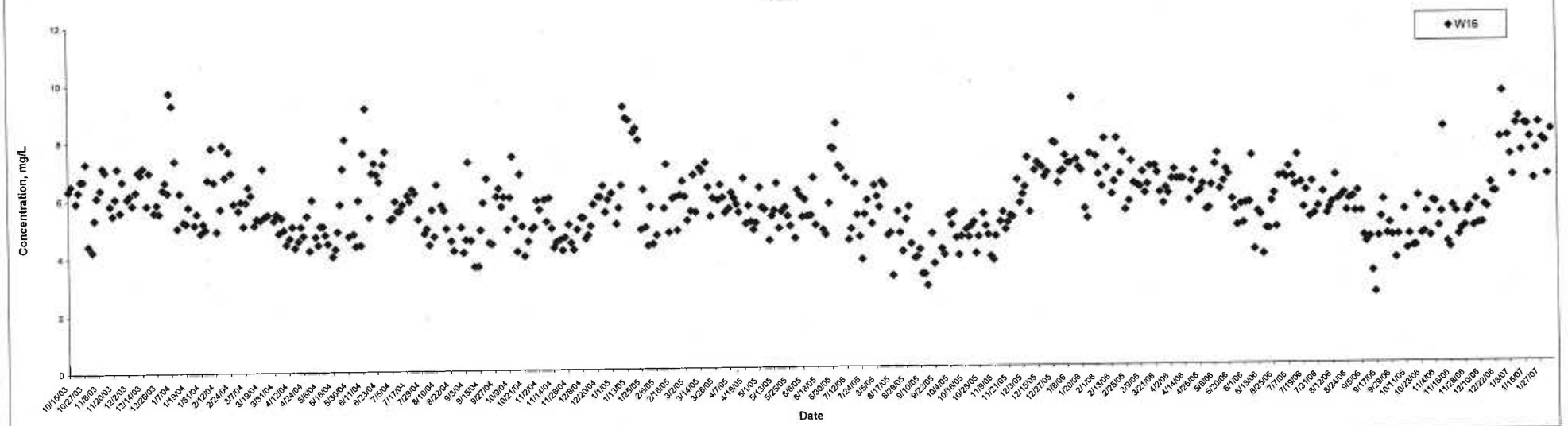

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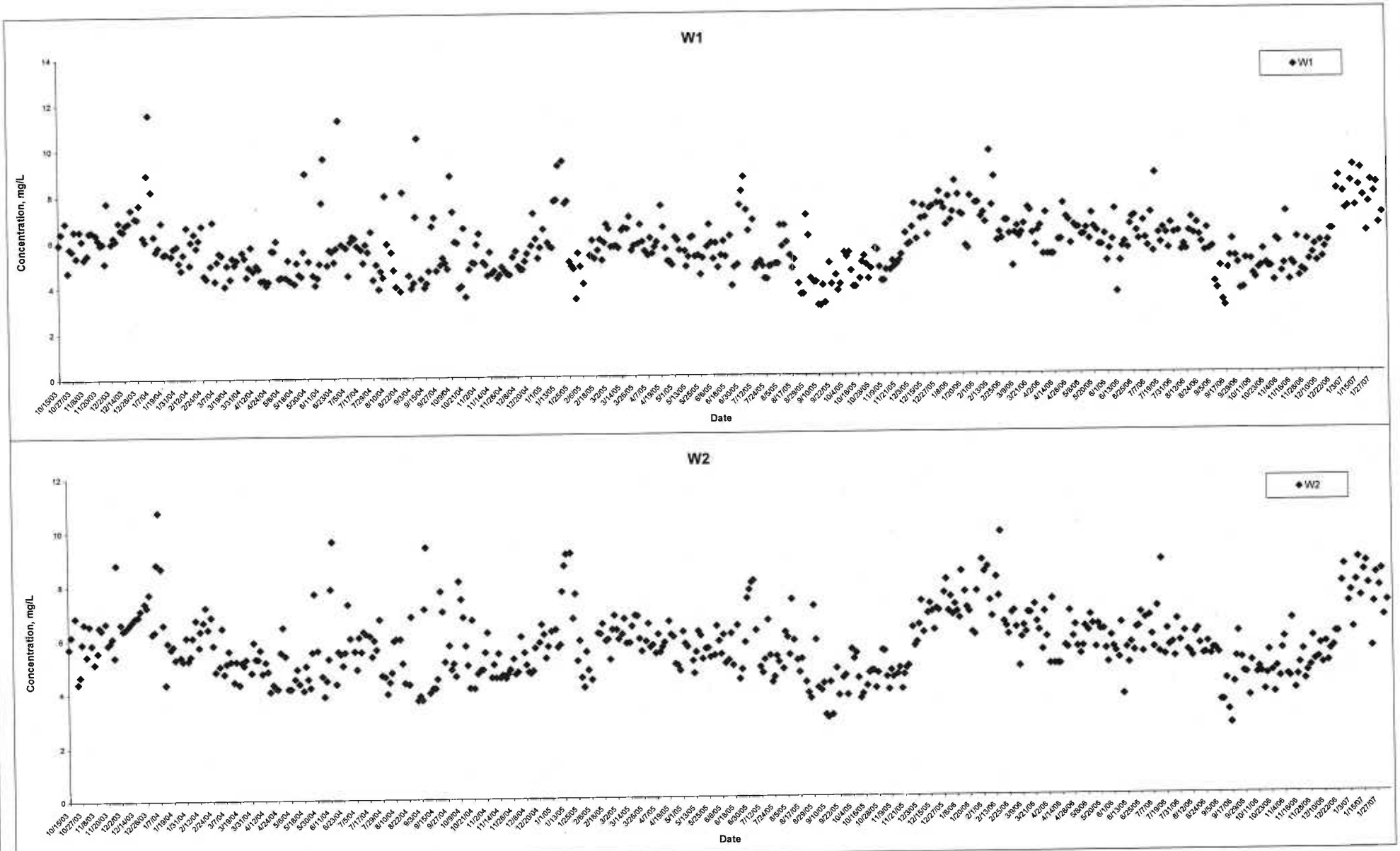
Dissolved Oxygen at Mid-Flood Tide



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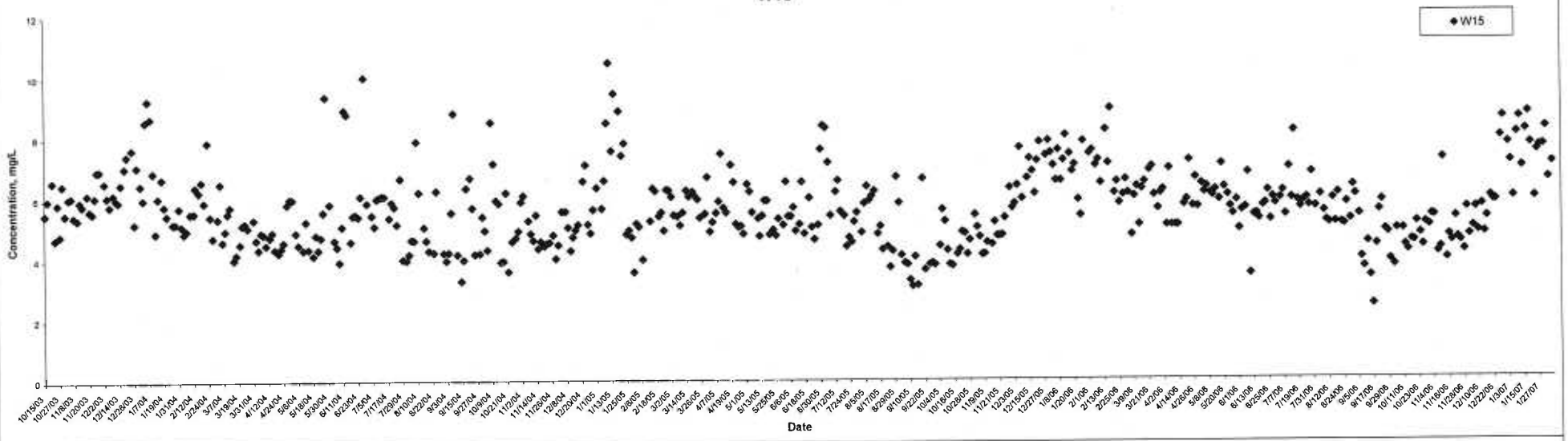
Dissolved Oxygen at Mid-Flood Tide

W15



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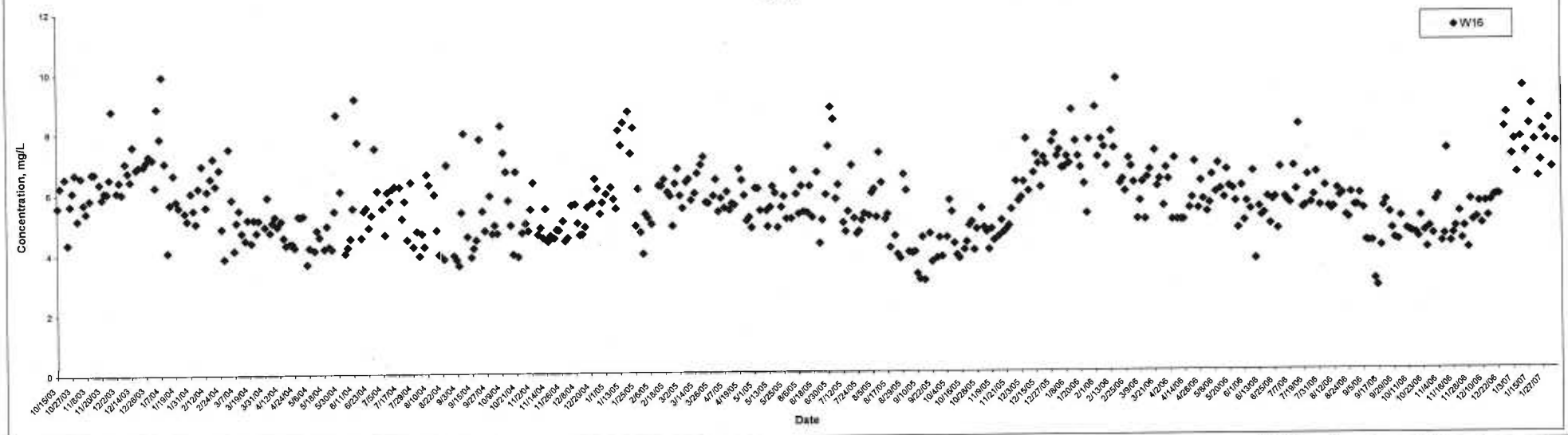

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APPENDIX H
SUMMARY OF ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHDULE

Appendix H — Summary of Environmental Mitigation Implementation Schedule

Types of Impacts	Mitigation Measures	Status
Air Quality		
Site clearance and demolition of existing structures	• The working area for the uprooting of trees, shrubs or vegetation or for the removal of boulders, poles, pillars or temporary or permanent structures shall be sprayed with water or a dust suppression chemical immediately	√
	• All demolished items (including trees, shrubs, vegetation, boulders, poles, pillars, structures debris, rubbish and other items arising from site clearance) that may dislodge dust particles shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition	√
Site boundary and entrance	• Vehicle washing facilities including a high pressure jet shall be provided at every vehicle exit point;	√
	• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point shall be paved with concrete, bituminous materials or hardcores;	√
	• Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4 m high from ground level shall be provided along the entire length except for a site entrance or exit;	N/A
Access road	• Every main haul road (i.e. any course inside a construction site having a vehicle passing rate higher than 4 in any 30 minutes) shall be sealed and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet;	√
	• The portion of any road leading only to a construction site that is within 30m of discernible or designated vehicle entrance or exit shall be kept clear of dusty materials;	√
Use of vehicle	• Immediately before leaving a construction site, every vehicle shall be washed to remove any dusty materials from its body and wheels;	√
	• Where a vehicle leaving a construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle;	√
	• Vehicle speed within the worksite shall be limited to 10 kph, except for properly formed and maintained access roads;	√
Concrete production	• The concrete batching plant shall be located away from any air sensitive receiver as far as practicable;	N/A
	• If the total silo capacity of the concrete batching plant exceed 50 tonne, the project proponent is required to obtain a Specified Process licence to ensure that any potential dust emission would be properly controlled	N/A
	• Cement delivered in bulk shall be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line such that, in the event of the silo approaching an overfilling condition, an audible alarm is triggered and the material filling stops within one minute;	N/A

Types of Impacts	Mitigation Measures	Status
	• Silo used for the storage of cement shall not be overfilled;	N/A
	• The loading, unloading, transfer, handling or storage of any cement shall be carried out in a totally enclosed system or facility, and any vent or exhaust shall be fitted with an effective fabric filter or equivalent air pollution control system or equipment;	N/A
	• Cement collected by fabric filters or other pollution control system or equipment shall be disposed of in a totally enclosed containers;	N/A
Excavation and earth moving	• The working area of any excavation or earth moving operation shall be sprayed with water or a dusty suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet;	√
	• Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabilizer within 6 months after the last construction activity on the construction site or part of the construction site where the exposed earth lies;	√
Stockpiling of dusty materials	• If a stockpile of dusty materials is more than 1.2 m high and lies within 50 m from any site boundary that adjoins a road, street, or other area accessible to the public, it shall be properly treated and sealed with latex, vinyl, bitumen or other suitable surface stabilizer;	√
	• All dusty materials shall be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet;	√
Noise		
Good site practice	• The Contractor should site noisy equipment and activities as far from sensitive receivers as practical. Also, temporary site offices (and other similar structures) should be located, as far as is possible, such that sensitive receivers are screened by these structures form the line of sight of the construction areas	√
	• Intermittent noisy activities should be scheduled to minimise exposure of nearby NSRs to high levels of construction noise. For example, noisy activities could be scheduled at times coinciding with periods when the schools are likely to be unoccupied. Prolonged operation of noisy equipment close to the schools should be avoided	√
	• Idle equipment should be turned off or throttled down. Noisy equipment should be properly maintained and used no more often than is necessary	√
	• Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided	√
	• Where possible, the numbers of concurrently operating items of plant should be reduced through sensitive programming	√
	• Construction plant should be properly maintained and operated. Construction equipment often has silencing measures built in or added on, e.g. compressor panels, and mufflers. Silencing measures should be properly maintained and utilized	√
Water Quality		

Types of Impacts	Mitigation Measures	Status
Local Stream Courses, Pipeworks and drains	• Local stream courses should be realigned or diverted in the sections where the proposed road alignment intersects with the local stream courses to ensure that there would be no discontinuity of flows downstream from the construction sites	√
	• Box culverts and diversion channels should be constructed to divert the stream flows downstream	√
	• Supporting columns and piers for the elevated sections of the DBL should be located away from existing stream courses as far as possible	√
	• The design of diverted sections of the stream courses should minimise loss of flow section and avoid generating unstable flow conditions	√
	• The construction period for re-alignment or diversion of stream courses should be shortened as far as possible through a better coordination with the other DBL construction activities	√
	• A construction site drainage layout and management plan should be developed by the Contractor to detail the procedures for control of construction site runoff. The plan should be submitted to the ET prior to the commencement of the DBL construction works to ensure a better site management and control of surface runoff on site	√
	• The existing pipes, which would be affected by the DBL project due to the increased runoff from DBL, should be upsized to increase the pipe capacity	√
	• A discharge license from EPD for discharge of effluent should be obtained	√
Excavation and Filling	• In areas where extensive excavation and filling are carried out, temporary earth bunds should be built. Sand bags may be used to confine the runoff or wastewater generated from the construction activities	√
	• Excavation works should be minimised in rainy season	√
	• Open stockpiles of construction materials and dusty materials should be covered with tarpaulin during rainstorms. These materials should not be placed near the stream courses. This avoids the release of materials into the stream water	√
	• The carrying out of trench and hole digging should be in short sections. Trenches and holes should be immediately back-filled after the completion of a section of works to minimise the inflow of rainwater during rainstorms	√
	• To prevent runoff from washing across exposed soil surface, intercepting channels should be provided. It is recommended to pave haul roads with concrete and protect temporary access roads using crushed stone or gravel. The exposed slope surfaces should be line or hydroseeded.	√
Construction of Foundation and Road Sections	• The waste water generated from bored pile foundation construction and related activities should be collected and recycled	√
	• Bentonite slurries used in bore-piling works or diaphragm wall construction should be reconditioned and reused whenever practicable	√
	• Adequate surface channels should be constructed along the site boundaries to avoid release of surface and storm runoffs out of the sites	√
	• The channel system to collect the runoffs in the construction sites should be well designed prior to the commencement of the site formation works	√

Types of Impacts	Mitigation Measures	Status
	• Provisions of drains at the lowest points of the sites could effectively collect the runoff. Silt and sand traps, which remove large soil particles in the runoffs, should be provided in the channels. Regular maintenance and cleaning of the channels would ensure that the channel system is in good condition and is not obstructed by sediments	√
	• Wastewater generated from the vehicle wheel washing facilities should be recycled wherever practicable. Excess wastewater should be transferred to suitable treatment systems for removal of suspended solids.	√
	• Wastewater generated from washing of concrete lorry mixers should be pre-treated by discharging into a sedimentation pit, which provides a quiescent environment for the concrete particles to settle and consolidate. The upper layer water in the sedimentation pit with low concentration of concrete particles should be further treated to the standards acceptable for final discharge. The concrete wastes deposited on the bottom of the pit should be removed regularly.	√
	• Covers should be provided to the newly constructed manholes to prevent any kinds of wastewater from entering into the drainage systems during the construction phase.	√
	• Pipes connected to the manholes should be temporarily sealed to avoid debris and construction materials get into the drainage systems	√
	• A wastewater treatment system comprising of chemical coagulation, sedimentation and pH control processes should be used to treat the site runoffs and the wastewater generated from various construction activities	√
	• Chemical toilets should be provided on site for collection and temporary storage of sewage. Alternatively, sewage storage tank should be provided. The collected sewage should be tinkered away by a licensed waste collector for off-site disposal.	√
Chemical Waste	*Storage and Handling of Oil, Other Petroleum Products and Chemicals* • All fuel tanks and chemical storage areas shall be provided with locks and be sited on sealed areas. The storage areas shall be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil, fuel and chemicals from reaching the receiving waters. The Contractors shall prepare guidelines and procedures for immediate clean-up actions following any spillages of oil, fuel or chemicals.	√
Waste	Details are provided in the Waste Management Plan.	
Landscape and Visual	▪ Temporary hydroseeding to reclamation if lapse time between completion of the reclamation and subsequent development is one year or more.	N/A

Note:

√	Compliance of mitigation measure
×	Non-compliance of mitigation measures
N/A	Not applicable

APPENDIX I
STATUS OF ENVIRONMENTAL LICENSES AND PERMITS

Permit No.	Valid Period		Section
	From	To	
Environmental Permit			
EP-163/2000	02 Apr 03	20 May 03	• Construction and operation of a dual three-lane carriageway (Deep Bay Link) with bridge structures linking, interchange between at Lam Tei, Ha Tsuen and widening of the Yuen Long Highway between Lam Tei and Tan Kwai Tsuen from a duel 2-lane to a dual 3-lane.
EP-163/2003/A	21 May 03	31 Aug 03	• Construction and operation of a dual three-lane carriageway (Deep Bay Link) with bridge structures linking, interchange between at Lam Tei, Ha Tsuen and widening of the Yuen Long Highway between Lam Tei and Tan Kwai Tsuen from a dual 2-lane to a dual 3-lane.
EP-163/2003/B	1 Sep 04	7 Dec 04	• Construction and operation of a dual three-lane carriageway (Deep Bay Link) with bridge structures linking, interchange between at Lam Tei, Ha Tsuen and widening of the Yuen Long Highway between Lam Tei and Tan Kwai Tsuen from a dual 2-lane to a dual 3-lane.
EP-163/2003/C	8 Dec 04	10 May 05	• Construction and operation of a dual three-lane carriageway (Deep Bay Link) with bridge structures linking, interchange between at Lam Tei, Ha Tsuen and widening of the Yuen Long Highway between Lam Tei and Tan Kwai Tsuen from a dual 2-lane to a dual 3-lane.
EP-163/2003/D	11 May 05	8 Sep 05	• Construction and operation of a dual three-lane carriageway (Deep Bay Link) with bridge structures linking, interchange between at Lam Tei, Ha Tsuen and widening of the Yuen Long Highway between Lam Tei and Tan Kwai Tsuen from a dual 2-lane to a dual 3-lane.
EP-163/2003/E	9 Sep 05	1 Mar 06	• Construction and operation of a dual three-lane carriageway (Deep Bay Link) with bridge structures linking, interchange between at Lam Tei, Ha Tsuen and widening of the Yuen Long Highway between Lam Tei and Tan Kwai Tsuen from a dual 2-lane to a dual 3-lane.
EP-163/2003/F	2 Mar 06	26 Oct 06	• Construction and operation of a dual three-lane carriageway (Deep Bay Link) with bridge structures linking, interchange between at Lam Tei, Ha Tsuen and widening of the Yuen Long Highway between Lam Tei and Tan Kwai Tsuen from a dual 2-lane to a dual 3-lane.
EP-163/2003/G	27 Oct 06	N/A	• Construction and operation of a dual three-lane carriageway (Deep Bay Link) with bridge structures linking, interchange between at Lam Tei, Ha Tsuen and widening of the Yuen Long Highway between Lam Tei and Tan Kwai Tsuen from a dual 2-lane to a dual 3-lane.
Construction Noise Permit			
GW-TW0264-03	25 Aug 03	24 Jan 04	• Holiday Daytime and any day evening time.
GW-TW0266-03	25 Aug 03	24 Jan 04	• Holiday Daytime and any day evening time.
GW-TW0267-03	25 Aug 03	24 Jan 04	• Holiday Daytime and any day evening time.
GW-TW0281-03	01 Sep 03	31 Oct 03	• Any day evening time.
GW-TW0321-03	4 Oct 03	31 Jan 04	• Holiday Daytime and any day evening time.
GW-TW0387-03	23 Nov 03	22 May 04	• Holiday Daytime and any day evening time.
GW-TW0020-04	12 Feb 04	11 Aug 04	• Holiday Daytime and any day evening time.
GW-TW0021-04	12 Feb 04	11 Aug 04	• Holiday Daytime and any day evening time.
GW-TW0022-04	12 Feb 04	11 Aug 04	• Holiday Daytime and any day evening time.
GW-TW0036-04	16 Feb 04	15 Aug 04	• Holiday Daytime and any day evening time.
GW-TW0037-04	16 Feb 04	15 Aug 04	• Holiday Daytime and any day evening time.
GW-TW0086-04	31 Mar 04	30 Sep 04	• Holiday Daytime and any day evening time.
GW-TW0107-04	19 Apr 04	06 May 04	• Holiday Daytime and any day evening time.
GW-TW0113-04	17 Apr 04	16 Oct 04	• Holiday Daytime and any day evening time.
GW-TW0126-04	07 May 04	07 Jun 04	• Any day between 2300-0700 hrs.
GW-TW0144-04	24 May 04	23 Oct 04	• Holiday Daytime and any day evening time.
GW-TW0169-04	11 Jun 04	10 Dec 04	• Holiday Daytime and any day evening time.

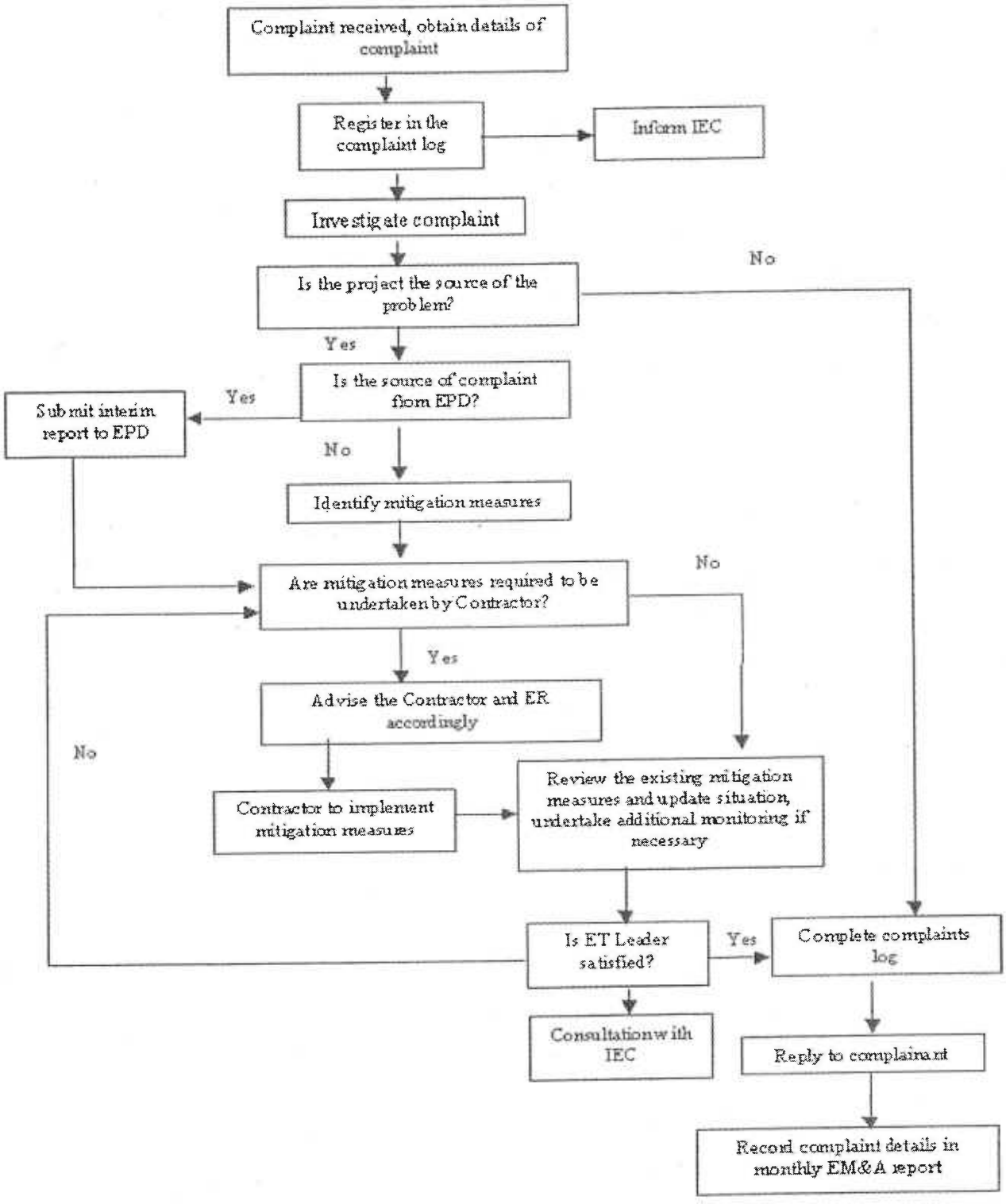
Permit No.	Valid Period		Section
	From	To	
GW-TW0198-04	29 Jun 04	28 Dec 04	• Holiday Daytime and any day evening time.
GW-TW0215-05	16 Jul 04	16 Aug 04	• Only three nights within the validity period between 1900-2300 hrs on any day not being a general holiday.
GW-TW0226-04	06 Aug 04	06 Sep 04	• Any one day including general holiday between 2300-0700 hours on next day.
GW-RW0370-04	16 Aug 04	15 Feb 05	• Holiday Daytime and any day evening time.
GW-RW0391-04	19 Aug 04	18 Feb 05	• Holiday Daytime and any day evening time.
GW-RW0408-04	27 Aug 04	30 Nov 04	• Only two nights within the validity period between 1900-2300 hrs on any day not being a general holiday.
GW-RN8001-04	19 Aug 04	18 Feb 05	• Holiday Daytime and any day evening time.
GW-RN8024-04	24 Oct 04	23 Apr 05	• Holiday Daytime and any day evening time.
GW-RN8025-04	19 Oct 04	18 Apr 05	• Holiday Daytime and any day evening time.
GW-RW0493-04	15 Oct 04	12 Nov 04	• Only ten nights within the validity period between 0100-0500 on any day not being a general holiday.
GW-RW0531-04	19 Oct 04	18 Apr 05	• Holiday Daytime and any day evening time.
GW-RW0629-04	13 Nov 04	12 Jan 05	• Ten nights within the validity period between 0100-0500 hrs on any day not being a general holiday and not immediately following a general holiday.
GW-RW0661-04	22 Nov 04	21 May 05	• Holiday daytime and any day evening time.
GW-RN8049-04	6 Dec 04	5 Jun 05	• Holiday daytime and any day evening time.
GW-RN8051-04	21 Dec 04	20 Jun 05	• Holiday daytime and any day evening time
GW-RN8057-04	1 Jan 05	30 Jun 05	• Holiday daytime and any day evening time
GW-RW0730-04	13 Dec 04	12 Jun 05	• Holiday Daytime and any day evening time.
GW-RW0731-04	13 Dec 04	12 Jun 05	• Holiday Daytime and any day evening time.
GW-RW0732-04	13 Dec 04	12 Jun 05	• Holiday Daytime and any day evening time.
GW-RW0820-04	13 Jan 05	12 Feb 05	• Seven nights within the validity period between 0100-0500 hrs.
GW-RW0053-05	31 Jan 05	30 Jul 05	• General holiday including Sundays between 0000-2400 hrs; • Any day not being a general holiday between 0000-0700 and 1900-2400 hrs.
GW-RW0095-05	17 Feb 05	16 Mar 05	• Any day within the validity period between 0000-0600 hrs.
GW-RW0096-05	17 Feb 05	16 Mar 05	• Seven nights within the validity period between 0100- 0500 hrs.
GW-RN8005-05	19 Feb 05	18 Aug 05	• Holiday Daytime and any day evening time.
GW-RW0117-05	28 Feb 05	31 Mar 05	• Seven nights within the validity period between 0100- 0500 hrs.
GW-RW0135-05	17 Mar 05	16 Apr 05	• Any day within the validity period between 0000-0600 hrs.
GW-RW0136-05	14 Mar 05	13 May 05	• General holiday including Sundays between 0000-0600 hrs; • Any day not being a general holiday between 0000-0600 hrs.
GW-RW0191-05	30 Mar 05	29 May 05	• Only eighteen days not being a general holiday between 1900-2100 hrs within the validity period.
GW-RN8014-05	28 Mar 05	27 Sep 05	• Holiday daytime and any day evening time.
GW-RN8017-05	6 Apr 05	5 Oct 05	• Holiday daytime and any day evening time.
GW-RN8018-05	6 Apr 05	5 Oct 05	• Holiday daytime and any day evening time.
GW-RW0212-05	8 Apr 05	7 May 05	• Any day within the validity period between 2300-0700 hrs on next day.
GW-RW0213-05	17 Apr 05	16 Jun 05	• Any day within the validity period between 0000-0600 hrs
GW-RW0239-05	18 Apr 05	17 Jun 05	• Only 7 nights including general holiday between 0100- 0500 hrs within the validity period.
GW-RN8023-05	27 Apr 05	26 Jun 05	• Any day within the validity period between 0000-0600 hrs.
GW-RN8024-05	27 Apr 05	26 Jun 05	• Any day within the validity period between 0000-0600 hrs.
GW-RN8025-05	28 Apr 05	27 Jun 05	• Any day within the validity period between 0000-0600 hrs.
GW-RW0288-05	8 May 05	7 Jun 05	• Any day within the validity period between 2300-0700 hrs on next day.
GW-RW0289-05	14 May 05	13 Nov 05	• General holiday including Sundays between 0000-0600 hrs; • Any day not being a general holiday between 0000-0600 hrs.
GW-RN8029-05	18 May 05	17 Nov 05	• General holiday including Sundays between 0700-2300 hrs;

Permit No.	Valid Period		Section
	From	To	
			• Any day not being a general holiday between 1900-2300 hrs.
GW-RN8030-05	18 May 05	17 Nov 05	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0321-05	18 May 05	17 Aug 05	• Any day between 0100-0500 hrs.
GW-RW0325-05	30 May 05	29 Jul 05	• Only eighteen days not being a general holiday between 1900-2100 hrs within the validity period.
GW-RW0343-05	8 Jun 05	7 Jul 05	• Any day within the validity period between 2300-0700 hrs on next day.
GW-RW0349-05	31 May 05	30 Nov 05	• Any day within the validity period between 1900-0700 hrs on next day.
GW-RW0369-05	13 Jun 05	12 Dec 05	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0370-05	13 Jun 05	12 Dec 05	• General holiday including Sundays between 0700-2300 hrs. • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0375-05	17 Jun 05	16 Aug 05	• Any day within the validity period between 0000-0600 hrs.
GW-RN8043-05	27 Jun 05	26 Aug 05	• Any day within the validity period between 0000-0600 hrs.
GW-RN8044-05	27 Jun 05	26 Aug 05	• Any day within the validity period between 0000-0600 hrs.
GW-RN8045-05	27 Jun 05	26 Aug 05	• Any day within the validity period between 0000-0600 hrs.
GW-RW0444-05	8 Jul 05	7 Aug 05	• Any day within the validity period between 2300-0700 hrs on next day.
GW-RW0477-05	30 Jul 05	29 Sep 05	• Any day not being a general holiday between 1900-2100 hrs.
GW-RW0478-05	30 Jul 05	30 Jan 06	• General holiday including Sundays between 0700-0700 hrs on next day; • Any day not being a general holiday between 1900-0700 hrs on the next day.
GW-RW0497-05	17 Aug 05	16 Oct 05	• Any day within the validity period between 0000-0600 hrs.
GW-RW0498-05	18 Aug 05	17 Nov 05	• Any day between 0100 and 0500 hrs.
GW-RW0508-05	8 Aug 05	7 Sep 05	• Any day within the validity period between 2300-0700 hrs on next day.
GW-RN8056-05	19 Aug 05	18 Feb 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0548-05	24 Aug 05	23 Feb 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RN8057-05	27 Aug 05	25 Sep 05	• Any day within the validity period between 0000-0600 hrs.
GW-RN8058-05	27 Aug 05	25 Sep 05	• Any day within the validity period between 0000-0600 hrs.
GW-RN8059-05	27 Aug 05	25 Sep 05	• Any day within the validity period between 0000-0600 hrs.
GW-RN8063-05	31 Aug 05	27 Feb 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hours.
GW-RW0570-05	8 Sep 05	7 Oct 05	• Any day within the validity period between 2300-0700 hrs on next day.
GW-RW0571-05	5 Sep 05	4 Mar 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0586-05	12 Sep 05	11 Mar 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs
GW-RW0587-05	12 Sep 05	11 Mar 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RN8067-05	21 Sep 05	20 Mar 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs

Permit No.	Valid Period		Section
	From	To	
GW-RW0612-05	30 Sep 05	29 Nov 05	• Any day not being a general holiday between 1900-2100 hrs.
GW-RW0637-05	8 Oct 05	7 Nov 05	• Any day within the validity period between 2300-0700 hrs on next day.
GW-RN8070-05	6 Oct 05	5 Apr 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RN8071-05	6 Oct 05	5 Apr 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0681-05	27 Oct 05	26 Dec 05	• Any day within the validity period between 0100-0500 hrs.
GW-RW0697-05	8 Nov 05	7 Dec 05	• Any day within the validity period between 2300-0700 hrs on next day.
GW-RW8087-05	18 Nov 05	17 May 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0751-05	30 Nov 05	29 Jan 06	• Any day not being a general holiday between 1900-2100 hrs.
GW-RN8094-05	30 Nov 05	29 May 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RN8095-05	30 Nov 05	29 May 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RN8098-05	30 Nov 05	29 May 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0769-05	1 Dec 05	31 May 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0775-05	3 Dec 05	2 Jun 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0776-05	13 Dec 05	12 Jun 06	• General holiday including Sundays between 0700-2300 hrs; • Any day not being a general holiday between 1900-2300 hrs.
GW-RW0798-05	15 Dec 05	31 Dec 05	• Any day within the validity period between 0100-0500 hrs.
GW-RW0848-05	3 Jan 06	26 Feb 06	• Any day between 0100-0500 hrs.
GW-RN8006-06	19 Feb 06	18 Aug 06	• Between 0700-2300 hrs on a general holiday; • Any day between 1900hrs-2300 hrs not being a general holiday.
GW-RW0075-06	24 Feb 06	23 Aug 06	• General holidays (including Sundays) 0700-2300 hrs; • Any day not being a general holiday (including Sundays) 1900-2300 hrs.
GW-RN8009-06	1 Mar 06	31 Aug 06	• Between 0700-2300 hrs on a general holiday; • Any day between 1900-2300 hrs not being a general holiday.
GW-RW0108-06	12 Mar 06	11 Sep 06	• General holidays (including Sundays) 0700-2300 hrs; • Any day not being a general holiday (including Sundays) 1900-2300 hrs.
GW-RW8017-06	21 Mar 06	20 Sep 06	• General holidays (including Sundays) 0700-2300 hrs; • Any day not being a general holiday (including Sundays) 1900-2300 hrs.
GW-RW0222-06	18 Apr 06	17 Jun 06	• Any day not being a holiday between 0100-0500 hrs
GW-RW0292-06	19 May 06	25 Jul 06	• Any day not being a general holiday between 0100-0500 hr.
GW-RN8040-06	29 May 06	28 Nov 06	• General holidays (including Sundays) 0700-2300 hrs; • Any day not being a general holiday (including Sundays) 1900-2300 hrs.
GW-RW0304-06	4 Jun 06	30 Nov 06	• Between 0700-2300 hrs on a general holiday; • Any day between 1900-2300 hrs not being a general holiday.

Permit No.	Valid Period		Section
	From	To	
GW-RW0329-06	13 Jun 06	12 Dec 06	• General holidays (including Sundays) 0700-2300 hrs; • Any day not being a general holiday (including Sundays) 1900-2300 hrs.
GW-RW0460-06	24 Aug 06	23 Feb 07	• General holidays (including Sundays) 0700-2300 hrs; • Any day not being a general holiday (including Sundays) 1900-2300 hrs.
GW-RN8065-06	19 Aug 06	18 Feb 07	• General holidays (including Sundays) 0700-2300 hrs; • Any day, not being a general holiday (including Sundays) 1900-2300 hrs
GW-RW0473-06	30 Aug 06	29 Nov 06	• Any day not being a general holiday between 0100-0500 hrs.
GW-RW8068-06	1 Sep 06	28 Feb 07	• General holidays (including Sundays) 0700-2300 hrs; • Any day not being a general holiday (including Sundays) 1900-2300 hrs.
GW-RW0505-06	12 Sep 06	11 Mar 07	• General holidays (including Sundays) 0700-2300 hrs; • Any day not being a general holiday (including Sundays) 1900-2300 hrs.
GW-RW0692-06	5 Dec 06	8 Jan 07	• Any day not being a general holiday between 0100-0500 hrs.
GW-RW0756-06	11 Jan 07	28 Feb 07	• Any day not being a general holiday between 0100-0500 hrs.
GW-RW0170-07	18 Apr 07	31 May 07	• General holidays (including Sundays), 0000-0700 hrs and 1900-2400 hrs on any day not being a general holiday.
Notification of Construction Work under APCO			
TW20030866-001	-	-	-
TW20041025-001	-	-	-
001016124	23 Nov 06	30 Jun 07	-
Effluent Discharge License			
6T1002/1	8 Nov 03	30 Nov 08	Discharge of commercial trade effluent.
1T316/1	25 Nov 03	30 Nov 08	Discharge of industrial / trade effluent
Chemical Waste Registration			
WPN5296-442-G2 040-84	11 Sep 03	N/A	Spent mineral oil and its contaminants
Construction Waste Disposal Account			
5000439	20 Jan 06	31 Dec 07	-

APPENDIX J
COMPLAINT FLOW DIAGRAM AND COMPLAINT LOG



ENSR | AECOM	Contract HY/2002/24 Deep Bay Link - Northern Section **Environmental Complaint Handling Procedure**	SCALE	N.T.S.	DATE	2007
		CHECK	PTPM	DRAWN	YSL
		JOB NO.	60016782	APPENDIX No. J	Rev. -

Appendix J – Environmental Complaints Log

Log Ref.	Location	Received Date	Complainant	Nature of Complaint	Information of Complaint	Project Related	Remarks
001	Ling To Tsz	11 Nov 03	Local resident via EPD	Air	Mud trail was left on nearby public road. It was likely caused by non-project related traffic	No	
002	Tsing Chuen Wai	11 Dec 03	Local resident via EPD	Noise	Night-time construction noise nuisance was complained. Although the Contractor obtained valid CNP, no activity was carried out on the day of complaint	No	
003	Tsing Chuen Wai	6 Jan 04	Local resident via EPD	Air	Mud trail was left on Ng Lau Road. Wheel wash bay appeared muddy and vehicle was not completely free of dust prior to leaving the site	Yes	Measures below were undertaken: 1. All dusty materials were removed. 2. Deposit in wheel washing facilities was removed.
004	Tsing Chuen Wai	6 Jan 04	Local resident	Air	Construction dust nuisance was complained. However, dust problem was mainly due to poor regional air quality	No	
005	Tsing Chuen Wai	7 Jan 04	Local resident via HyD	Noise	Construction noise due to rock breaking was complained near Yonking Garden. Rock breaking was carried out during non-restricted hours and no limit level exceedance was recorded.	Yes	Since there was no violation, no particular mitigation measure was applicable.
006	Tsing Chuen Wai	13 Jan 04	Local resident via HyD	Noise & Water	Noise nuisance and possible muddy water discharge due to stockpile of soil at Yonking Garden. Rock breaking was carried out during non-restricted hours and no limit level exceedance was recorded, while the stockpile of soil was not part of Project's works.	Yes (for Noise only)	Since there was no violation, no particular mitigation measure was applicable.
007	Ngau Hom Shek	4 Feb 04	Local resident via Media	Water	Wastewater was discharged to nearby streams at Ngau Hom Shek	Yes	Measures below were undertaken: 1. Bundings were erected. 2. Wastewater was recycled.
008	Tsing Chuen Wai	24 Mar 04	DSD	Water	Slurry material was discharged	Yes	Measures below was undertaken: 1. Silt deposit was cleared from the channel.
009	Yick Yuen	30 Mar 04	Local resident via EPD	Air	Construction dust nuisance was observed on Yick Yuen Road. However, the majority of Project's traffic did not use the site exit at Yick Yuen Road. The problem was likely due to non-Project related traffic	No	
010	Ngau Hom Shek	14 May 04	Yuen Long District Office	Water	Wastewater was discharged to nearby streams at Ngau Hom Shek. The problem was due to heavy rainfall and no sufficient measures could be provided on site for the silty runoff	Yes	Measures below were undertaken: 1. Exposed slope were covered, final slope surfaces were shotcreted. 2. Capacity of detention pond was increased.

Log Ref.	Location	Received Date	Complainant	Nature of Complaint	Information of Complaint	Project Related	Remarks
011	Tsing Chuen Wai	8 Jun 04	Local resident	Waste/ Storage	Spoil was disposed of adjacent to Yonking Garden. However, the location of the spoil was outside the site boundary and the disposal was not carried out under this Project's works.	No	
012	Lok On Pai	17 Jun 04	Local resident via EPD	EP Condition 3.11(c)	Some construction materials, which belonged to the Contractor, were improperly stored at Lok On Pai without permission	Yes	Measures below was undertaken: 1. The storage was removed on next day.
013	Yick Yuen & Tsing Chuen Wai	29 Jul 04	Local resident via EPD	Waste/ Storage	Unauthorized land filling was complained. However, the fill materials were sourced from other sites and the activity was not conducted by the Contractor	No	
014	Po Ka Leng at Hung Shiu Kiu	12 Aug 04	Local resident via EPD	Air & Water	Construction dust and muddy water were complained	Yes	Measures below were undertaken: 1. Dust mitigation measures were conducted. 2. Wastewater was treated before discharge.
015	Tin Sam Tsuen	8 Sep 04	Local resident	Water	Alleged crops damage was induced by washing of muddy runoff. However, this runoff was confirmed from the nearby land filling site under rainy weather	No	
016	Lok On Pai	30 Oct 04	Local resident via EPD	EP Condition 3.11(a)	Segment loading and unloading was undertaken outside operation hours. However, according to the site diary, there was no such activities during the complaint	No	
017	Tsing Chuen Wai	22 Dec 04	EPD	Noise	Construction noise nuisance was observed after midnight. However, the Contractor obtained valid CNP and conducted construction activity according to the CNP specification and no night-time noise exceedance was recorded.	Yes	Since there was no violation, no particular mitigation measure was applicable.
018	Tsing Chuen Wai	30 Dec 04	EPD	Noise & Air	Noise nuisance and malodor nuisance was induced from burning unknown materials after midnight. However, no construction activity was undertaken after midnight.	No	
019	Tsing Chuen Wai	25 Jan 05	Local resident via HyD	Air	Mud trail was observed on Ng Lau Road. However, mud trail was observed originating from another entrance (not associated with this Project) on Ng Lau Road.	No	
020	Yick Yuen	22 Feb 05	Local resident via EPD	Air	Construction dust nuisance was complained. However, the majority of Project's traffic did not use the site exit at Yick Yuen Road. The problem was likely due to non-Project related traffic	No	

Log Ref.	Location	Received Date	Complainant	Nature of Complaint	Information of Complaint	Project Related	Remarks
021	Lok On Pai	31 Mar 05	Local resident via EPD	EP Condition 3.11(a)	Segment loading was operated outside allowable period and dust nuisance was also observed by the complainant. Noise nuisance might have been originating from two tractors for segment transportation which arrived on-site near 0830, with their engines kept on, while no fugitive dust was observed mitigation measures were properly implemented	Yes	Measures below was undertaken: 1. All plant and equipment were switched off before the allowable working hours
022	Yick Yuen	9 Apr 05	Local resident via EPD	Air	Construction dust nuisance was complained. A joint-site visit was carried out with EPD. Mitigation measures were properly conducted and no fugitive dust was observed	No	
023	Tsing Chuen Wai	20 Apr 05	Local resident via EPD	Noise	Noise nuisance caused by heavy vehicle movement near the site entrance at Ng Lau Road.during restricted hours. However, the Contractor did not have project related heavy vehicle movement at Ng Lau Road.	No	
024	Yick Yuen	14 Sep 05	Local resident via EPD	Water	Muddy surface runoff was generated. However, this runoff might be caused by seepage of underground water due to high water table level on the day of complaint	No	
025	San Sang San Tsuen	15 May 06	Local resident via EPD	Air	Construction dust emission was observed. However, no evidence proved the incidence was related to Project activities	Yes	Measures below was undertaken 1. Frequency of water spraying was increased.
026	Ng Lau Road near Caltex petrol station	14 Sep. 06	Local resident via EPD	Air	Muddy road surface was complained. However, it is believed that the mud trails were created by local villager	No	
027	Yick Yuen	08 Nov. 06	Local resident via EPD	Air	Construction dust nuisance was complained. However, no evidence proved the incidence was related to Project activities	No	
028	Yick Yuen	30 Nov. 06	Local resident via EPD	Air	Construction dust nuisance was complained. No construction activity or construction plant movement was observed at the complaint location. Fugitive dust might be generated under dry and windy condition or when there was non-project related vehicle movement in the vicinity.	No	Measures below was undertaken 1. Frequency of water spraying was increased.

APPENDIX K
YELLOW FORMS LOG

Appendix K – Yellow Forms Log

Log Ref.	Received Date	Nature of Complaint	Information of Yellow Form	Project Related	Remarks
001	8 Jun 2004	Water	Muddy surface runoff was observed on site.	Yes	Mitigation Measures below were undertaken: 1. The Contractor immediately halted the muddy surface runoff.
002	8 Jun 2004	Air	Construction dust was not sufficiently suppressed.	Yes	Mitigation Measures below were undertaken: 1. The Contractor subsequently enhanced watering program of dry haul road.
003	8 Sep 2004	Water	Effluent discharged out of site may not meet the requirements stipulated in the requirements stipulated in the Effluent Discharge License.	Yes	Mitigation Measures below were undertaken: 1. The Contractor subsequently well managed the package wastewater system; the wastewater treatment system had been installed on site during EPD's visit.
004	7 Feb 2005	Noise	Noise nuisance generated from segment transportation during night time.	Yes	Mitigation Measures below were undertaken: 1. The Contractor strictly followed conditions stipulated in GW-RW0095-05.
005	11 Jul 2005	Water	Muddy water was discharged from Site	Yes	Mitigation Measures below were undertaken: 1. The Contractor subsequent enhanced bunding to prevent muddy surface overflow from entering the stream.