Stanger Asia

ENVIRONMENTAL MONITORING AND AUDIT REPORT

FOR

CONTRACT No. CV/2002/13

FILL BANK AT TUEN MUN AREA 38

DECEMBER 2004

(Revision No. 0)

Report No.: ET12387

Certified by: _____ Date: 18/01/05

Mr. Jeff Tsang
Environmental Team Leader
for Stanger Asia Limited

Verified by: _____ Date: 18/1/05

Mr. Joseph T. L. Poon
Independent Environmental Checker
for MateriaLab Consultants Ltd.

HONG KONG. Tel: 852- 2682 1203 Fax: 852- 2682 0046 E-mail address: stanger@stanger.com.hk

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EXECUTIVE SUMMARY.

This is the 18th monthly Environmental Monitoring and Audit (EM&A) report for Contract No. CV/2002/13 – Fill Bank at Tuen Mun Area 38. The site has been in operation as a public filling area as part of the reclamation. The site is 24 hours operated except during the Chinese New Year holidays to provide a stable outlet for public fill to serve the construction industry. This report covers the monitoring works conducted during the month of December 2004.

Construction Activities for the Reported Period.

- Public fill operation.
- Operation of tipping hall.
- Installation of CCTV system.
- Construction of drainage system.

Air Quality Monitoring.

Two stations (A1 and A2) have been identified as the locations for the monitoring of 24-hour and 1-hour Total Suspended Particulates (TSP). In this reporting period, the monitoring of 24-hour TSP was carried out on six occasions at A1 and A2. Monitoring of 1-hour TSP was carried out on eighteen occasions at A1 and A2. There was no exceedance to the set action or limit levels for both parameters at both stations.

Water Quality Monitoring.

Water quality in terms of turbidity, dissolved oxygen, suspended solids, temperature, and salinity, was carried out on fourteen occasions during flood tide and ebb tide at FM1, FM2, FC1 and FC2 in this reporting period. There was no exceedance to the set action or limit level for all parameters at all stations.

Landscape Audit.

There was no specific observation regarding landscape in this reporting period.

Waste Management.

146,065m^3 public fill was collected to the Fill Bank from land. 12.11t C&D waste and general refuse were disposed of at WENT Landfill. 1t of chemical waste stored on site was collected by licensed contractor in this reporting period.

Complaints and Notifications of Summonses and Successful Prosecutions.

No complaints or notification of summonses was received in this reporting period.

Site Inspections.

Five weekly site inspections were conducted on 2nd, 11th, 16th, 20th and 30th December 2004. Major observations are summarised in the following table.

Observations	Actions by Contractor	Outcome
Fill materials were stockpiled at the seafront. (02.12.2004)	Removed the stockpiles at the seafront.	The stockpiles were removed. (11.12.2004)
Stockpiles at the tipping area were subjected to erosion. (02.12.2004)	Cleaned up the stockpiles.	The stockpiles at the tipping area were cleaned up regularly.
Dust emission at the tipping hall when materials were being unloaded. (11.12.2004)	Wet the materials at the reception office prior to unloading.	Dust emission at the tipping hall was minimised. (30.12.2004)
Waste chemical drums were found on bare ground. (16.12.2004)	Collected and stored the waste drums in chemical waste storage area.	The waste chemical drums were collected and stored in the chemical waste storage area. (20.12.2004)
Drainage channels were filled with deposit. (20.12.2004)	Cleaned up the deposit.	To be observed in next reporting period.

An Independent Environmental Checker (IEC) audit was conducted on 20th December 2004 with the Environmental Team. Major observations are summarized in the following table.

Observations	Actions by Contractor	Outcome
Heavy dust emission on haul road to the sorting facility on the RTT side.	Increased the frequency of water spraying.	To be observed in next reporting period.
Splashing generated during the transfer of wet soil to the barge at the tipping hall caused splashing into the sea.	To ensure the barge is fitted with nets / tarpaulin sheeting and the tarpaulin sheets at the tipping hall are always dropped down closer to the barge during the transfer.	Tarpaulin sheet was lowered from the tipping hall to prevent splashing into the sea. (30.12.2004)
The western side of the Fill Bank was only partially hydroseeded.	The Contractor will arrange hydroseeding after slope trimming works completed.	To be observed in the next reporting period.

Future Key Issues.

The tentative works activities, predicted impacts and areas of environmental concern for the following month are summarised in the following table.

Works Activities	Predicted Impacts	Proposed Mitigation Measures
Public filling operation.	- Dust - Water	- Dampening of fill materials and exposed area. - Avoid stockpiling fill materials near seafront. - Avoid spillage of fill materials into the marine water.
Operation of tipping hall for unloading public fill into barges.	- Dust - Water	- The tipping halls shall be top and 3-sides enclosed. - Avoid spillage of fill materials into the marine water.
Construction of drainage system.	- Dust - Noise - Water	- Apply water spray during excavation and earth moving. - Comply with the conditions of construction noise permit. - Treat all wastewater to acceptable prior to discharge.
Construction of new tipping hall at the barge handling area.	- Dust - Water	- Apply water spray during dusty operation. - Any materials drop into the sea should be prevented and any wastewater generated should be treated to acceptable prior to discharge.

1. INTRODUCTION.

1.1 Background.

Stanger Asia Ltd. has been commissioned by the Penta-Ocean Construction Co. Ltd. to provide an Environmental Team (ET) to monitor air and water quality and audit landscape works for Contract No.CV/2002/13. The team is to take a pro-active role in all issues, which may be of environmental concern during the establishment, operation and decommissioning phases of the Fill Bank at Tuen Mun Area 38.

The Independent Environmental Checker (IEC) appointed for this project is Materialab Consultants Ltd.

In this report, the air and water quality monitoring works and landscape audit conducted for the December 2004 will be detailed and reviewed. All monitoring works were carried out in accordance to "*Agreement No, PW 01/2002 Project Profile for Fill Bank at Tuen Mun Area 38, Environmental Monitoring and Audit Manual"*.

1.2 Report Structure.

The purpose of this report is to detail and review the air and water quality monitoring works and landscape audit undertaken during December 2004. The impact forecast for the next reporting month and the schedules of monitoring works for the following month is also given.

The report follows the format given below:

Section 1	Introduction and background information to the content of this report.
Section 2	This section gives the information of the project.
Section 3	This section summarises all the environmental permits and licenses.
Section 4	Summary of the EM&A requirements is presented.
Section 5	This section details the implemented mitigation measures.
Section 6	Details monitoring results.
Section 7	Audit the monitoring results.
Section 8	The status for solid and liquid waste management for the site is overviewed.
Section 9	Complaints, notifications of summons and successful prosecutions are summarized.
Section 10	This section gives the predicted impacts of the construction activities.
Section 11	This section gives a conclusion in relation to all monitoring activities.

2. PROJECT INFORMATION.

2.1 Site Description.

The works mainly comprise the construction of temporary storm water system, setting up of C&D material loading/unloading facilities, setting up/ refurnishing site facilities, stockpiling of 4.9 million m^3 of public fill, and decommissioning of the temporary fill bank.

The site layout plan is shown in Figure 2.1.

2.2 Project Organization.

Mr. L.M. Chan is the Engineer's Representative for the Civil Engineering and Development Department, Government of the HKSAR. (Tel: 2762 5602, Fax: 2714 0113).

The Independent Environmental Checker (IEC) for this project is headed by Mr. Joseph Poon - Manager of Materialab Consultants Ltd. (Tel: 2450 8238, Fax: 2450 6138).

Mr. Chan Kam Sum, Sunny is the Site Agent for Penta-Ocean Construction Co., Ltd. (Tel: 2491 1584, Fax: 2496 0433).

The Environmental Team (ET) for the project is Stanger Asia Ltd. The team is headed by Mr Jeff Tsang – Environmental Scientist. (Tel: 2682 1203, Fax: 2682 0046).

The Organization Chart with the key personnel contacts names and telephone numbers is given in Appendix I.

2.3 Construction Programme.

The overall construction programme is given in Appendix IX. Details of the construction activities are listed below.

- Site clearance;
- Construction of storm water drainage system;
- Stockpiling of 4.9 million m^3 of public fill;
- Construction of landscape works; and
- Removal of stockpiled public fill.

3. ENVIRONMENTAL PERMITS AND LICENSES.

The summary of the status of all environmental permits, licenses and notification for this project as at December 2004 is summarized in the following table.

Table 3.1 Summary of the Environmental Permits and Licenses

Description	Licence/Permit No.	Date of Issue	Date of Expiry	Status
Environmental Permit	EP-153/2003	13-Feb-03	--	Superseded
Registration of Chemical Waste Producer	WPN5296-421-P2800-03	05-Aug-03	--	Issued
Amended Environmental Permit	EP-153/2003/A	30-Oct-03	--	Issued
Construction Noise Permit	GW-RW0628-04	15-Nov-04	14-May-05	Issued

4. SUMMARY OF EM&A REQUIREMENTS.

4.1 Air Quality.

Monitoring Location.

The project has two designated locations (A1 & A2) for the monitoring of air quality. A1 is a fixed location in the vicinity of the site office to monitor the TSP levels at River Trade Terminal and A2 is a movable location to the western boundary of the site that is designed to move as works progress. The air monitoring locations are shown in Figure 4.1.

Table 4.1 Coordinates of Air Quality Monitoring Stations

Station	HK Metric Grid – Easting	HK Metric Grid - Northing
A1	811368	825593
A2	810812*	825096*

** - Coordinates of present location.*

Methodology

Measurement of 24-hour and 1-hour TSP levels were carried out in accordance to the high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50). When positioning the high volume samplers, the following requirements have been observed:

- a horizontal platform with appropriate support to secure the high volume sampler against gusty wind, should be provided;
- horizontal distance between the high volume samplers and an obstacle, such as buildings, must be at least twice the height of the obstacle protruding above the high volume samplers;
- a minimum separation of 2 m should be provided from walls, parapets, and penthouses for rooftop high volume samplers;

- a minimum separation of 2 m should be provided from any supporting structure measured horizontally;
- there should not be any furnace or incinerator flues nearby;
- there should be unrestricted airflow around the high volume samplers;
- a minimum separation of 20 m should be provided from the dripline;
- any wire fence and gate employed to protect the high volume samplers should not cause any obstruction during monitoring.

All relevant data including temperature, pressure, weather conditions, elapsed-timer meter reading for the start and finish of the sampling period, identification and weight of the filter paper, and other special phenomena were recorded.

Monitoring Equipment and Calibration Details.

Andersen GMW Model GS2310 high volume samplers were used to carry out the monitoring of 24-hour and 1-hour TSP. The high volume sampler is in compliance with the specifications as listed in the Environmental Schedule, given below:

- 0.6 – 1.7 m^3/min (20-60 SCFM) adjustable flow range;
- equipped with a timing / control device with 5 minutes accuracy over 24 hours operations;
- installed with elapsed-time meter with 2 minutes accuracy over 24 hours operations;
- capable of providing a minimum exposed area of 406 cm^2 (63 in^2);
- flow control accuracy: 2.5% deviation over 24-hr sampling period;
- equipped with shelter to protect the filter and sampler;
- incorporated with an electronic mass flow rate controller or other equivalent devices;
- equipped with a flow recorder for continuous monitoring;
- provided with peaked roof inlet, incorporated with manometer;
- able to hold and seal the filter paper to the sampler housing at horizontal position;
- easy to change filter; and
- capable of operating continuously for 24-hr period.

The high volume sampler is calibrated at bi-monthly intervals. The calibration kit (Andersen Model G2535) comprising pressure plates and a transfer standard is traceable to the internationally recognized standard. Calibration records for the high volume sampler is given in Appendix II of this report.

Laboratory Measurement.

Laboratory measurements were carried out in Stanger Asia Ltd. own HOKLAS accredited laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments.

Clean filter papers of size 8”x10” with no pinholes were labelled before sampling. They were conditioned in a dessicator with less than 50% relative humidity for over 24 hours and pre-weighed before use for sampling.

After sampling, the filter papers loaded with dust were kept in a clean and tightly sealed plastic bag. The filter papers were then returned to the laboratory for reconditioning in the dessicator with less than 50% relative humidity followed by accurate weighing on an electronic balance regularly calibrated against a traceable standard and readable to 0.1 mg.

Stanger Asia Ltd. operates comprehensive quality assurance and quality control programmes. For QA/AC procedures, all filters were equilibrated and weighed repeatedly until the difference of two consecutive results was less than 0.5 mg.

Monitoring Parameters Frequency.

Table 4.2 Air Quality Monitoring Frequency

Monitoring Locations	Parameter	Frequency
A1 & A2	24-hr TSP	Once in every six days
	1-hr TSP	Three times in every six days

Action and Limit Levels.

The Action levels for air quality monitoring were established from the impact monitoring data of Contract No. CV/2000/01 prior to the commencement of the fill bank utilising the criteria laid out in *section 4.7* of the EM&A Manual for the project. The Limit levels for air quality monitoring has been set in line with statutory guidelines for air quality in Hong Kong. Action and Limit levels for both 24-hour and 1-hour TSP are given in the following table.

Table 4.3 Action and Limit Levels for the Project

Parameter Monitored	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
1-hour TSP	344	500
24-hour TSP	192	260

4.2 Water Quality.

Monitoring Locations.

The EM&A Manual produced for this project has proposed two monitoring stations (FM1 & FM2) and two control stations (FC1 & FC2) for the carrying out of water quality monitoring. Control Station FC1 will act as upstream control station for the mid-ebb tide with control station FC2 acting as upstream control stations for the mid-flood tide.

The designated monitoring stations are shown in Figure 4.2.

Methodology.

Measurements are taken at three water depths, namely 1m below water surface, mid-water and 1m above seabed at both mid-flood and mid-ebb tides, except where the water depth less than 6m, when the mid-depth station may be omitted. Should the water depth have been less than 3m, only the mid-depth was monitored.

Two measurements of turbidity, dissolved oxygen (mg/L), dissolved oxygen (% saturation) and temperature at each depth of each station is taken. The probes are removed from the water after the first measurement and then redeployed for the second measurement. If the difference in value between the first and second reading of each set is more than 25% of the value of the first reading, the readings are discarded and further readings taken. Replicate samples of suspended solids measurements are taken at each depth and at each water quality monitoring and control station. The samples are kept in a chilled condition during delivery to the laboratory ad before commencement of analysis. For the purpose of evaluating the water quality, all values for suspended solids and turbidity shall be depth-averaged.

During monitoring works the following shall also be recorded:

- monitoring location;
- depth of water;
- time;
- weather conditions including ambient temperature;
- water temperature;

Monitoring Equipment.

The following equipment was employed for routine water quality monitoring.

- Dissolved Oxygen meter: YSI model 58 with stirrer
- Turbidity meter: Hach 2100P
- Echo sounder: Hummingbird 100SX
- Water sampler: Kahlisco 135WB203
- GPS receiver: Trimble NT2002D
- Thermometer: YSI model 58

Monitoring Equipment Calibration Details.

All on-site monitoring equipment was calibrated three-monthly at Stanger Asia's HOKLAS accredited laboratory. An on-site calibration check was carried out prior to the taking of measurements in accordance with standard water quality monitoring procedures.

Equipment calibration details were given in Appendix II.

Laboratory Analysis.

The laboratory measurements of suspended solids were carried out at
Stanger Asia Limited, a HOKLAS accredited laboratory in accordance with Method No. 2540D 17th Edition of APHA.

Stanger Asia operates a comprehensive quality assurance and quality control programmes for QA/AC procedures in accordance with the requirements of HOKLAS accreditation, all filters were equilibrated and weighted repeatedly until the difference of two consecutive results is less than 0.5 mg.

Monitoring Parameters and Frequency.

Table 4.4 Water Quality Monitoring Frequency

Monitoring Locations	Monitoring Parameters	Frequency	Requirements
Designated Control Stations: FC1 & FC2. Designated Monitoring Stations: FM1 & FM2.	Temperature, Salinity, Dissolved Oxygen, Turbidity, Suspended Solids.	Three days per week.	At three depths during mid-ebb and mid-flood tides.

Action and Limit Levels.

The Action and Limit levels for water quality monitoring were established from the impact monitoring data of Contract No. CV/2000/01 prior to the commencement of the fill bank utilising the criteria laid out in *section 6.8* of the EM&A Manual for the project.

Table 4.5 Action and Limit Level for Water Quality

Parameter	Action level	Limit level
Dissolved Oxygen in mg/L. Surface & Middle Bottom.	 <4.78mg/L <4.16mg/L	 <4mg/L <2mg/L
Suspended Solids (SS) in mg/L (depth-averaged)	>120% of upstream control station's SS at the same time of the same day.	>130% of upstream control station's SS at the same tide of the same day .
Turbidity (Tby) in NTU	>120% of upstream control station's Tby at the same tide of the same day.	>130% of upstream control station's Tby at the same tide of the same day.

All the figures given in the table are used for reference only and the EPD may amend the figures whenever necessary.

4.3 Event and Action Plans.

The Event and Action Plans for air and water are attached in Appendix III of this report.

5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES.

The contractor implemented various environmental mitigation measures as recommended in the Project Profile and Environmental Permit. The implementation status is attached in Appendix IV and summarised as follows:

- Wheel washing facilities were provided at the exit point of the site and the wheel washing bay was cleared regularly.
- Slopes were compacted as far as practicable.

- Site accesses were covered with concrete.
- Waste collection points were maintained and cleaned on a regular basis.
- Hoarding was erected along Lung Mun Road and near River Trade Terminal.
- Oil drums were placed in drip trays.
- Water bowsers and road sweepers were in operation.
- Buffer trees were planted.
- Speed limit warning signs were posted.
- Completed slopes were hydroseeded.

6. MONITORING RESULTS.

6.1 Completed Monitoring Works.

Table 6.1 gives the completed monitoring works for the reported period.

Table 6.1 Completed Monitoring Works for December 2004

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			December 1 1 – hr TSP 24 – hr TSP WQM (Ebb: 15:08) (Flood: 10:46)	**2** Site Inspection	**3**	**4** WQM (Ebb: 07:00) (Flood: 17:33)
5	**6**	**7** 1 – hr TSP 24 – hr TSP WQM (Ebb: 08:22) (Flood: 15:21)	**8**	**9** WQM (Ebb: 10:32) (Flood: 16:22)	**10**	**11** WQM (Ebb: 12:18) (Flood: 06:53) Site Inspection
12	**13** 1 – hr TSP 24 – hr TSP WQM (Ebb: 13:55) (Flood: 08:46)	**14**	**15** WQM (Ebb: 15:32) (Flood: 10:31)	**16** Site Inspection	**17** WQM (Ebb: 07:00) (Flood: 12:22)	**18**
19	**20** 1 – hr TSP 24 – hr TSP WQM (Ebb: 07:40) (Flood: 14:48) Site Inspection	**21**	**22** WQM (Ebb: 09:48) (Flood: 15:51)	**23**	**24** 1 – hr TSP 24 – hr TSP WQM (Ebb: 11:35) (Flood: 16:43)	**25**
26	**27** WQM (Ebb: 13:15) (Flood: 08:35)	**28**	**29** WQM (Ebb: 14:20) (Flood: 09:41)	**30** 1 – hr TSP 24 – hr TSP Site Inspection Landscape Audit	**31** WQM (Ebb: 15:38) (Flood: 10:48)	

Notes: *1. 24 –hr TSP (monitored once every 6 days) at monitoring locations A1 and A2.*
2. 1 hour TSP (monitored three times every six days when highest level of dust generation expected) at monitoring locations A1 and A2.
3. WQM - water quality monitoring three times per week, on mid-flood and mid-ebb tides. Days of monitoring to be separated by at least 36 hours. Monitoring locations FC1, FM1, FM2 & FC2.
4. Site inspections to be carried out once per week.
5. Auditing of landscape works to be carried out once per month.

6.2 Air Quality Monitoring.

Impact monitoring of 24-Hour TSP was conducted on six occasions at A1 and A2, with the monitoring of 1-Hour TSP being conducted on eighteen occasions at A1 and A2 in this reported period. Monitoring on 18.12.2004 was cancelled due to traffic accident of the monitoring team and the monitoring session was subsequently made up on 20.12.2004.

The monitoring records for 24-hour and 1-hour TSP are given in the following table. Details of monitoring results are given in Appendix V**.** The results are presented graphically in Figures 6.1 and 6.2.

Table 6.2 Results of 24-hour TSP Monitoring

Date	A1, µg/m^3	Exceedance (Y/N)	A2, µg/m^3	Exceedance (Y/N)
01/12/2004	107	N	139	N
07/12/2004	117	N	139	N
13/12/2004	113	N	125	N
20/12/2004	136	N	67	N
24/12/2004	115	N	102	N
30/12/2004	102	N	71	N
Action Level	192 µg/m3			
Limit Level	260 µg/m^3			

Table 6.3 Results of 1-hour TSP Monitoring

Date	A1, µg/m^3	Exceedance (Y/N)	A2, µg/m^3	Exceedance (Y/N)
01/12/2004	217	N	265	N
01/12/2004	197	N	219	N
01/12/2004	234	N	165	N
07/12/2004	247	N	251	N
07/12/2004	307	N	302	N
07/12/2004	194	N	291	N
13/12/2004	245	N	247	N
13/12/2004	186	N	261	N
13/12/2004	249	N	241	N
20/12/2004	270	N	304	N
20/12/2004	271	N	273	N
20/12/2004	218	N	281	N
24/12/2004	252	N	230	N
24/12/2004	286	N	258	N
24/12/2004	280	N	276	N
30/12/2004	198	N	293	N
30/12/2004	296	N	254	N
30/12/2004	200	N	255	N
Action Level	344 µg/m^3			
Limit Level	500 µg/m^3			

Wind speed and direction data from the wind station is given in Appendix XI.

6.3 Water Quality Monitoring.

Water quality monitoring was carried out on fourteen occasions during flood tide and ebb tide at FM1, FM2, FC1 and FC2.

Results for water quality monitoring are summarised in the following tables. Details of monitoring results are presented in Appendix VI. Graphical presentations of the results are shown in Figure 6.3 – Figure 6.10.

Table 6.4 Summary of Water Quality Monitoring Data

Sample Location	Surface & Middle Averaged Dissolved Oxygen (Range), mg/L	Bottom Averaged Dissolved Oxygen (Range), mg/L	Depth Averaged Turbidity (Range), NTU	Depth Averaged Suspended Solids (Range), mg/L
FM1	6.92 (6.16-7.94)	6.75 (6.03-7.41)	7.44 (2.04-15.82)	13.7 (5.5-22.7)
FM2	6.86 (6.25-7.91)	6.54 (5.09-7.44)	7.47 (2.76-16.07)	14.0 (6.0-24.2)
FC1	6.91 (5.96-8.25)	6.54 (5.22-7.69)	7.55 (1.70-16.15)	13.5 (5.5-22.5)
FC2	6.71 (5.91-7.88)	6.23 (5.18-7.41)	8.37 (2.66-17.57)	15.0 (5.7-27.2)

7. AUDIT REPORT.

7.1 Air Quality Monitoring.

No exceedance to set action or limit levels for either 24 or 1-Hour TSP monitoring was recorded at air monitoring station A1 and A2 in this reported period.

7.2 Water Quality Monitoring.

There was no exceedance to the Action and Limit Level for water quality parameters in this reported period.

7.3 Site Inspections.

Five weekly site inspections were conducted on 2nd, 11th, 16th, 20th and 30th December 2004. Observations by ET, action by the Contractor and outcome are summarised in the following table.

Table 7.1 Summary of Findings, Actions and Outcomes of Site Inspection by ET

Observations	Actions by Contractor	Outcome
Fill materials were stockpiled at the seafront. (02.12.2004)	Removed the stockpiles at the seafront.	The stockpiles were removed. (11.12.2004)
Stockpiles at the tipping area were subjected to erosion. (02.12.2004)	Cleaned up the stockpiles.	The stockpiles at the tipping area were cleaned up regularly.
Dust emission at the tipping hall when materials were being unloaded. (11.12.2004)	Wet the materials at the reception office prior to unloading.	Dust emission at the tipping hall was minimised. (30.12.2004)
Waste chemical drums were found on bare ground. (16.12.2004)	Collected and stored the waste drums in chemical waste storage area.	The waste chemical drums were collected and stored in the chemical waste storage area. (20.12.2004)
Drainage channels were filled with deposit. (20.12.2004)	Cleaned up the deposit.	To be observed in next reporting period.

The Independent Environmental Checker (IEC) conducted at audit on 20th December 2004. The major observations were summarized in the following table.

Table 7.2 Summary of Findings, Actions and Outcomes of Site Inspection by IEC

Observations	Actions by Contractor	Outcome
Heavy dust emission on haul road to the sorting facility on the RTT side.	Increased the frequency of water spraying.	To be observed in next reporting period.
Splashing generated during the transfer of wet soil to the barge at the tipping hall caused splashing into the sea.	To ensure the barge is fitted with nets / tarpaulin sheeting and the tarpaulin sheets at the tipping hall are always dropped down closer to the barge during the transfer.	Tarpaulin sheet was lowered from the tipping hall to prevent splashing into the sea. (30.12.2004)
The western side of the Fill Bank was only partially hydroseeded.	The Contractor will arrange hydroseeding after slope trimming works completed.	To be observed in the next reporting period.

7.4 Landscape and Visual.

A landscape audit was conducted on 30th December 2004. The slopes on the north-western side of the fill bank were not hydroseeded. The Contractor was recommended to complete the slope works and carry out hydroseeding as soon as possible.

8. WASTE MANAGEMENT.

146,065m^3 public fill was collected to the Fill Bank. 12.11t C&D waste and general refuse were disposed of at WENT Landfill. 1t of chemical waste generated was collected by licensed contractor in this reporting period.

9. COMPLAINTS, NOTIFICATIONS OF SUMMONSES AND SUCCESSFUL PROSECUTIONS.

No complaint was received this month. Complaint Log is attached in Appendix VII. Cumulative statistics on complaints, notifications of summonses and successful prosecutions are attached in Appendix VIII.

10. FUTURE KEY ISSUES.

The following are the scheduled construction activities for the next reported period. Scheduled monitoring activities for the following month are given in Appendix IX.

Table 10.1 Works Programme for January 2005

Works Activities	Predicted Impacts	Proposed Mitigation Measures
Public filling operation.	- Dust - Water	- Dampening of fill materials and exposed area. - Avoid stockpiling fill materials near seafront. - Avoid spillage of fill materials into the marine water.
Operation of tipping hall for unloading public fill into barges.	- Dust - Water	- The tipping halls shall be top and 3-sides enclosed. - Avoid spillage of fill materials into the marine water.
Construction of drainage system.	- Dust - Noise - Water	- Apply water spray during excavation and earth moving. - Comply with the conditions of construction noise permit. - Treat all wastewater to acceptable prior to discharge.
Construction of new tipping hall at the barge handling area.	- Dust - Water	- Apply water spray during dusty operation. - Any materials drop into the sea should be prevented and any wastewater generated should be treated to acceptable prior to discharge.

11. CONCLUSION.

All results for the air quality monitoring conducted this month were acceptable with no exceedance to set action or limit levels for either 24 or 1-hour TSP.

In relation to the monitoring of water quality, there was no record of exceedance to the set Action and Limit Level during this reporting period.

There was no specific observation regarding landscape in this reporting period.

Figures

Stanger Asia

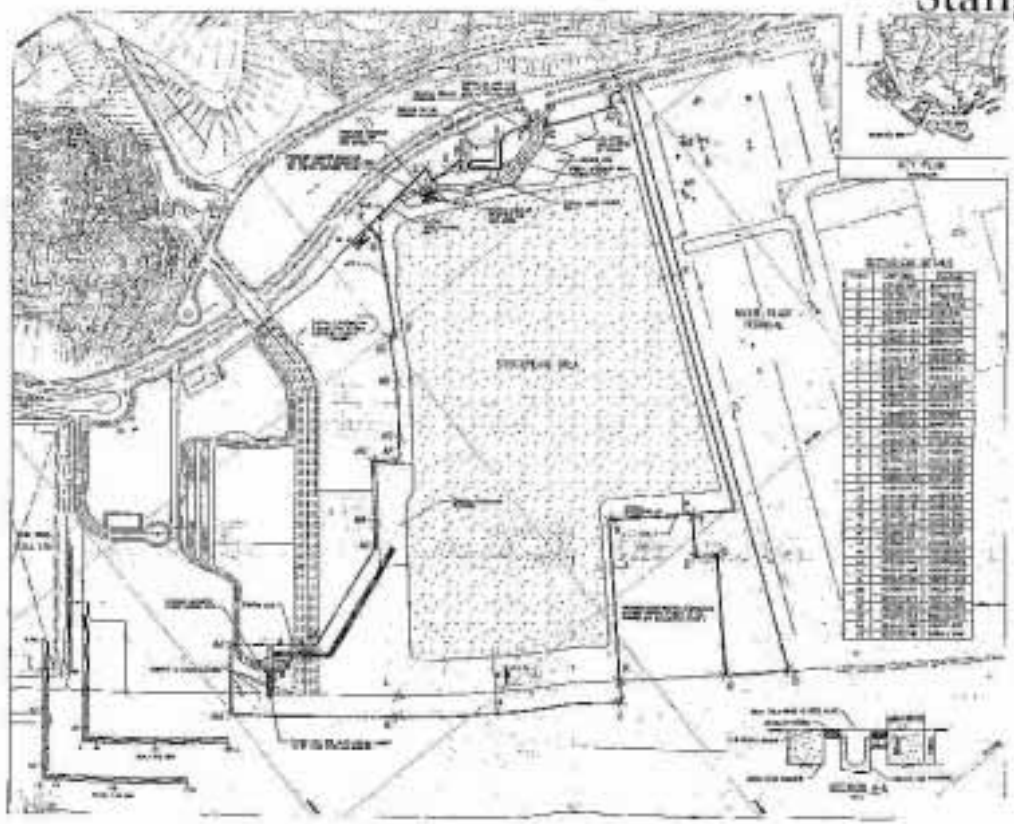


Figure 2.1 - The Site Layout Plan

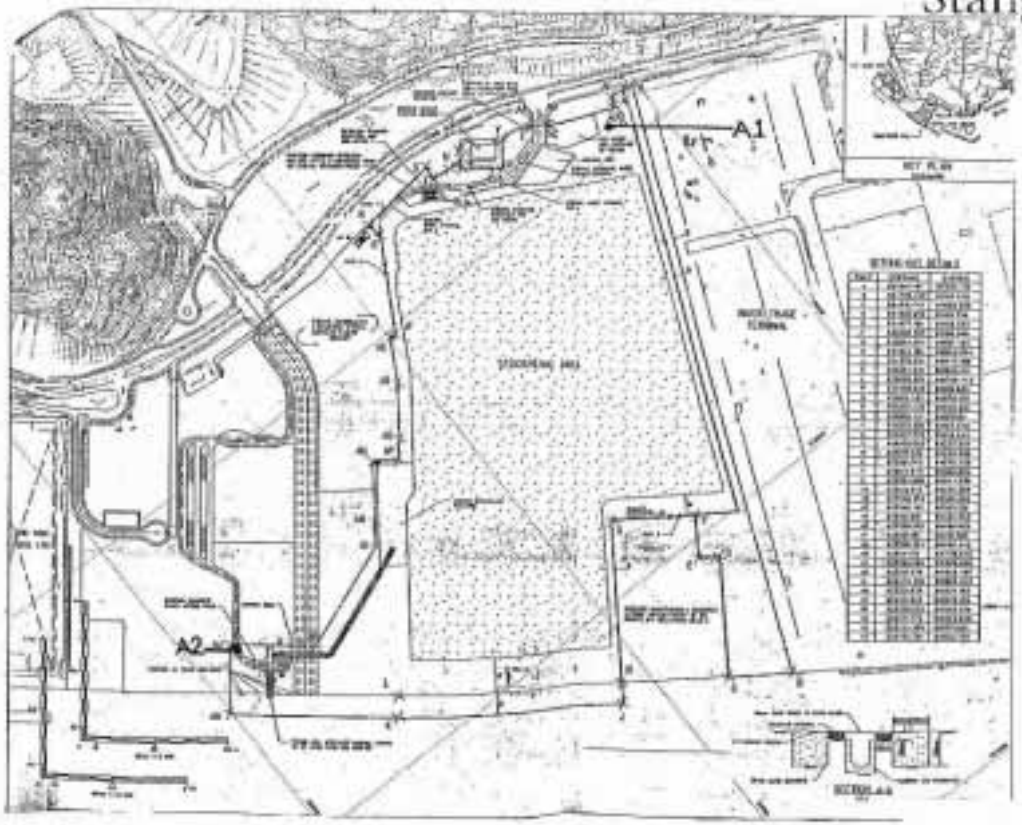


Figure 4.1 – Air Quality Monitoring Stations

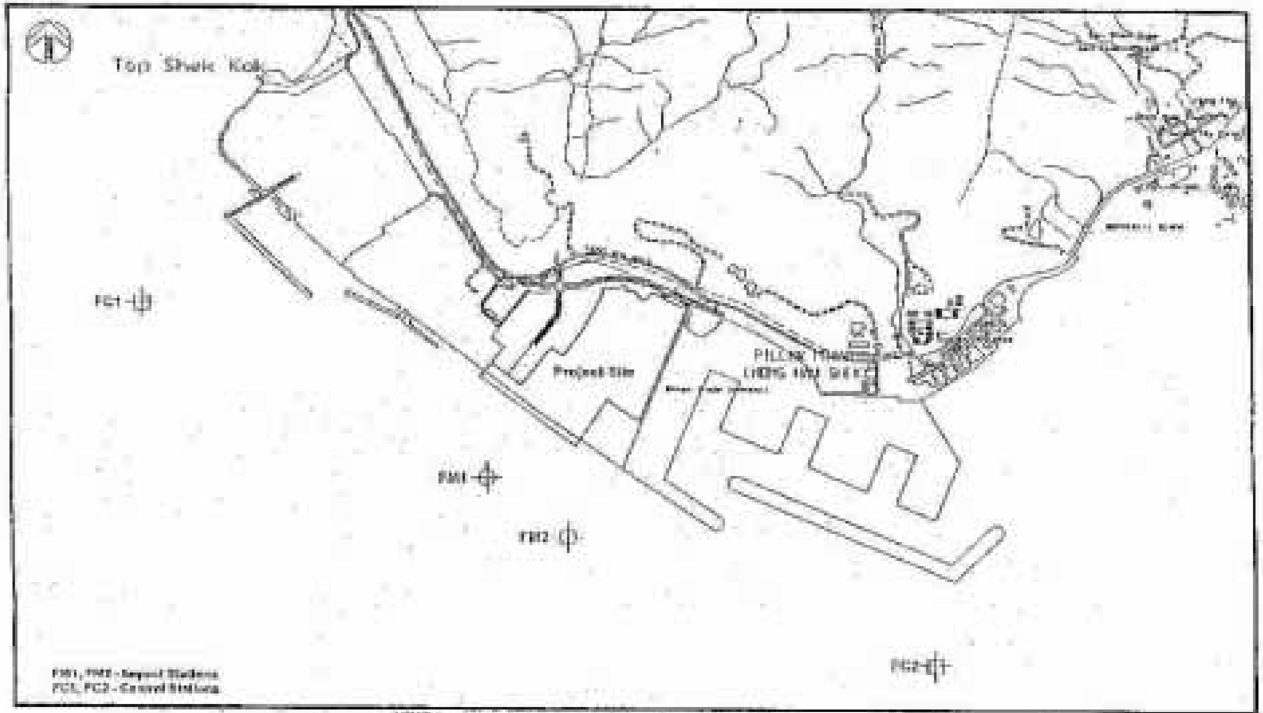


Figure 4.2 – Water Quality Monitoring Stations

Figure 6.1 - Graphical Plot for 24-hr TSP

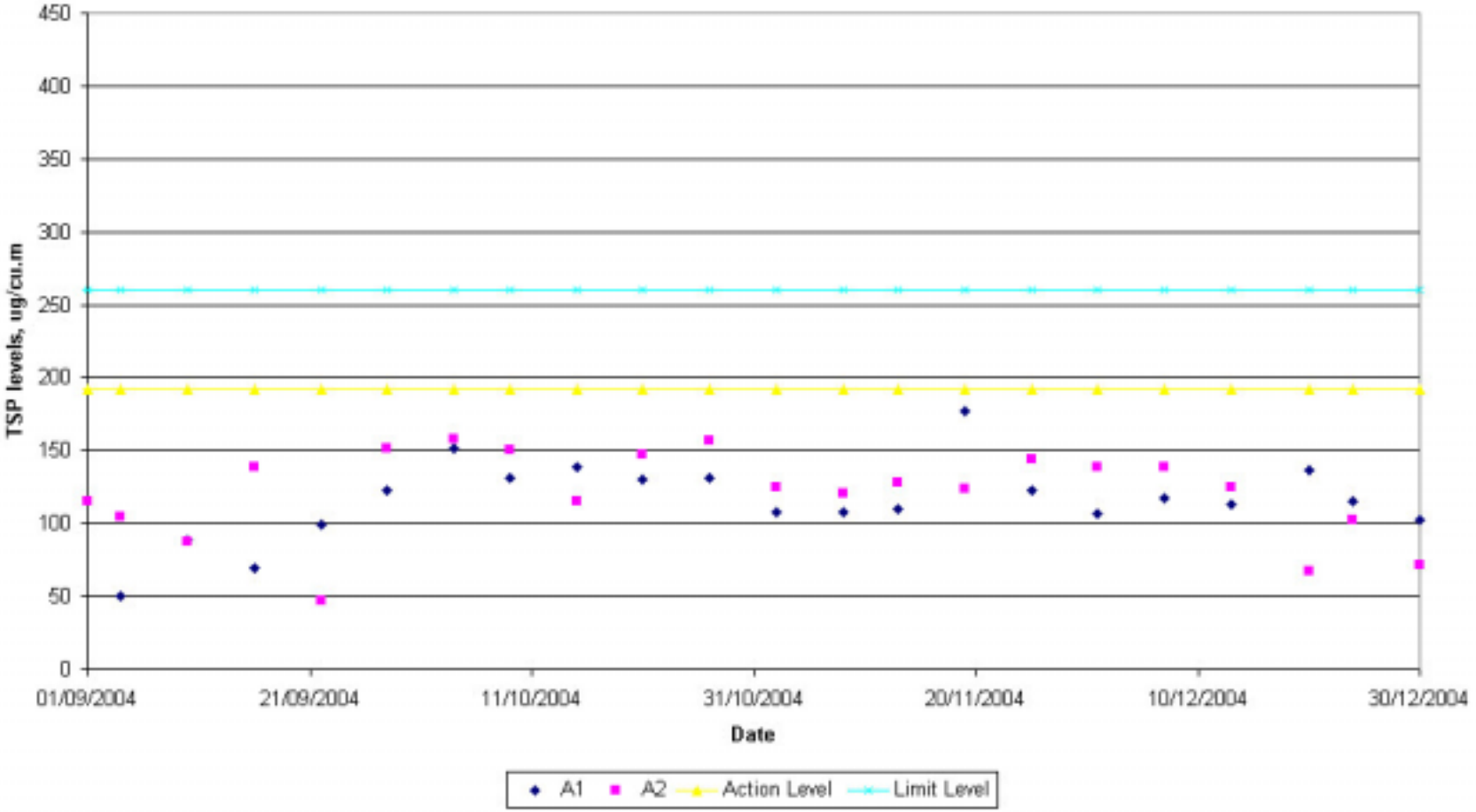


Figure 6.2 - Graphical Plot for 1-hr TSP

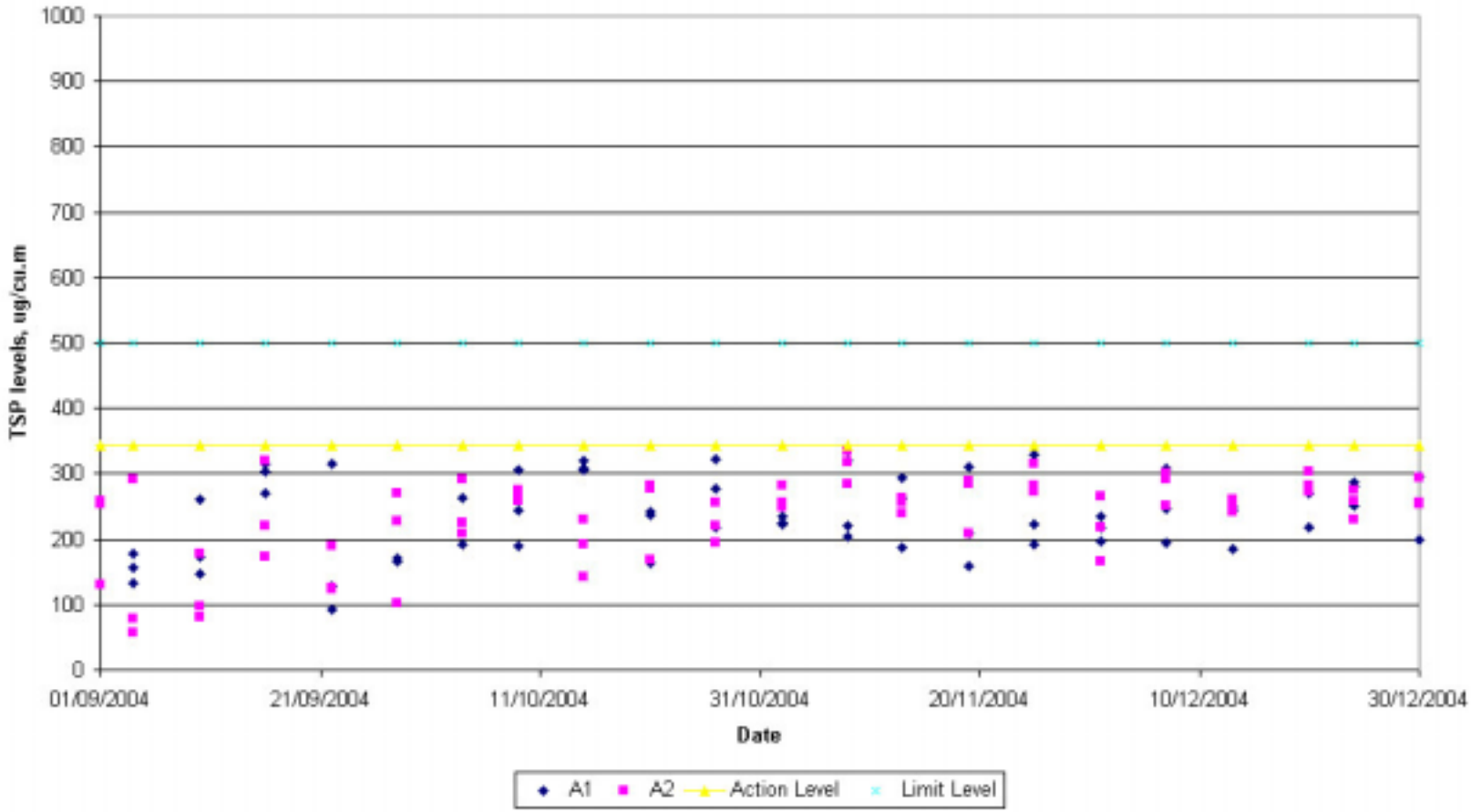


Figure 6.3 - Surface and Middle Averaged Dissolved Oxygen - Mid-Flood

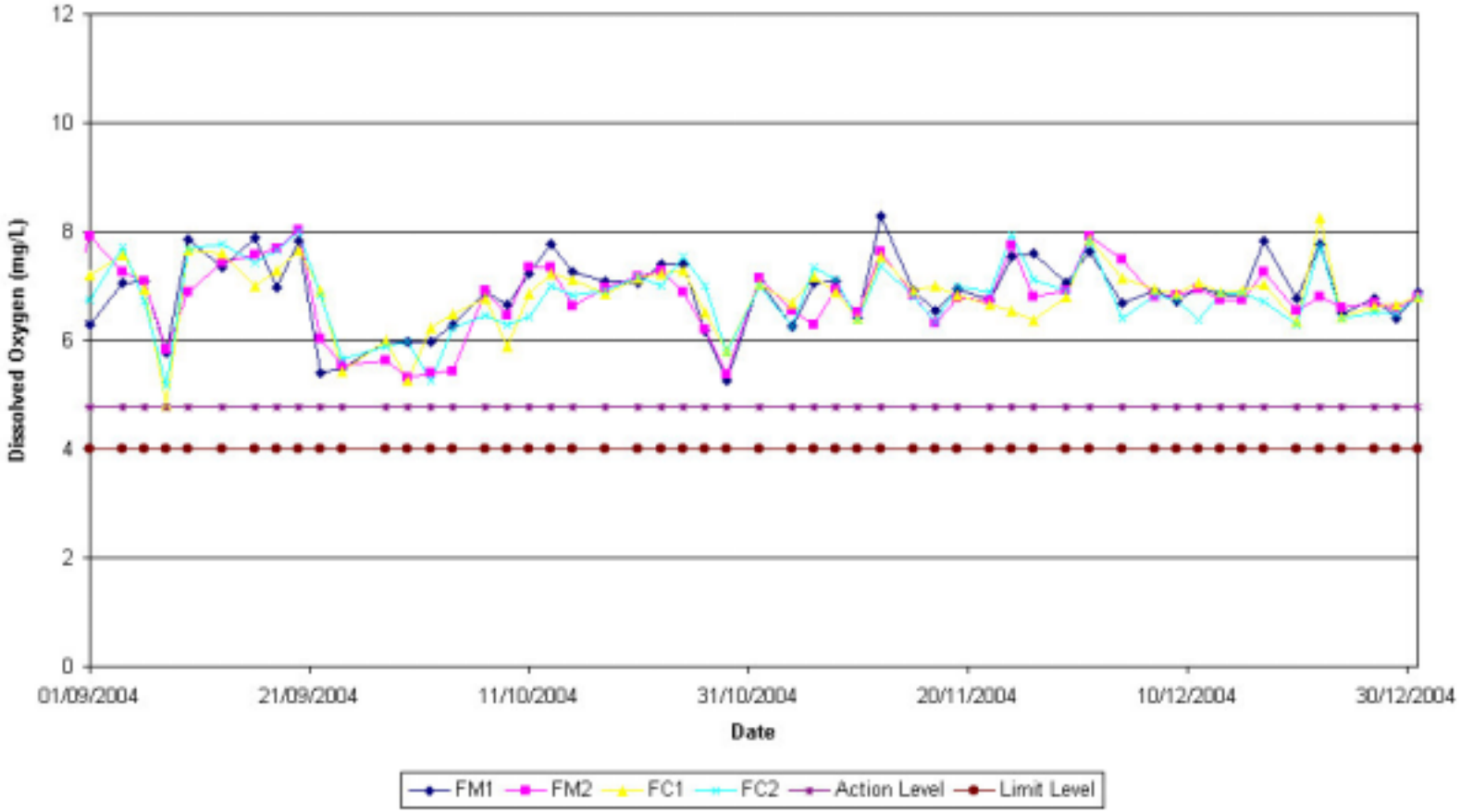


Figure 6.4 - Surface and Middle Averaged Dissolved Oxygen - Mid-Ebb

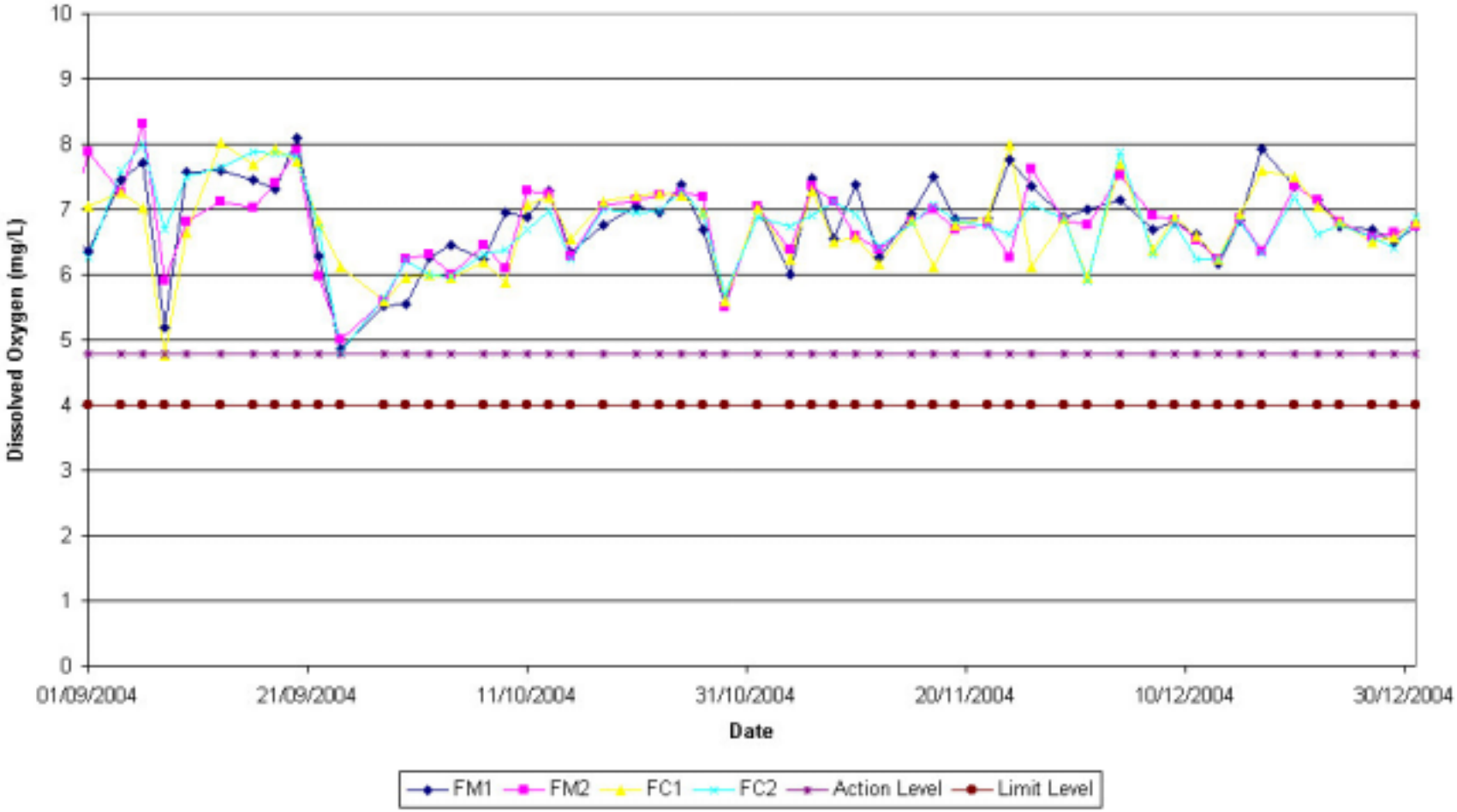


Figure 6.5 - Bottom Averaged Dissolved Oxygen - Mid-Flood

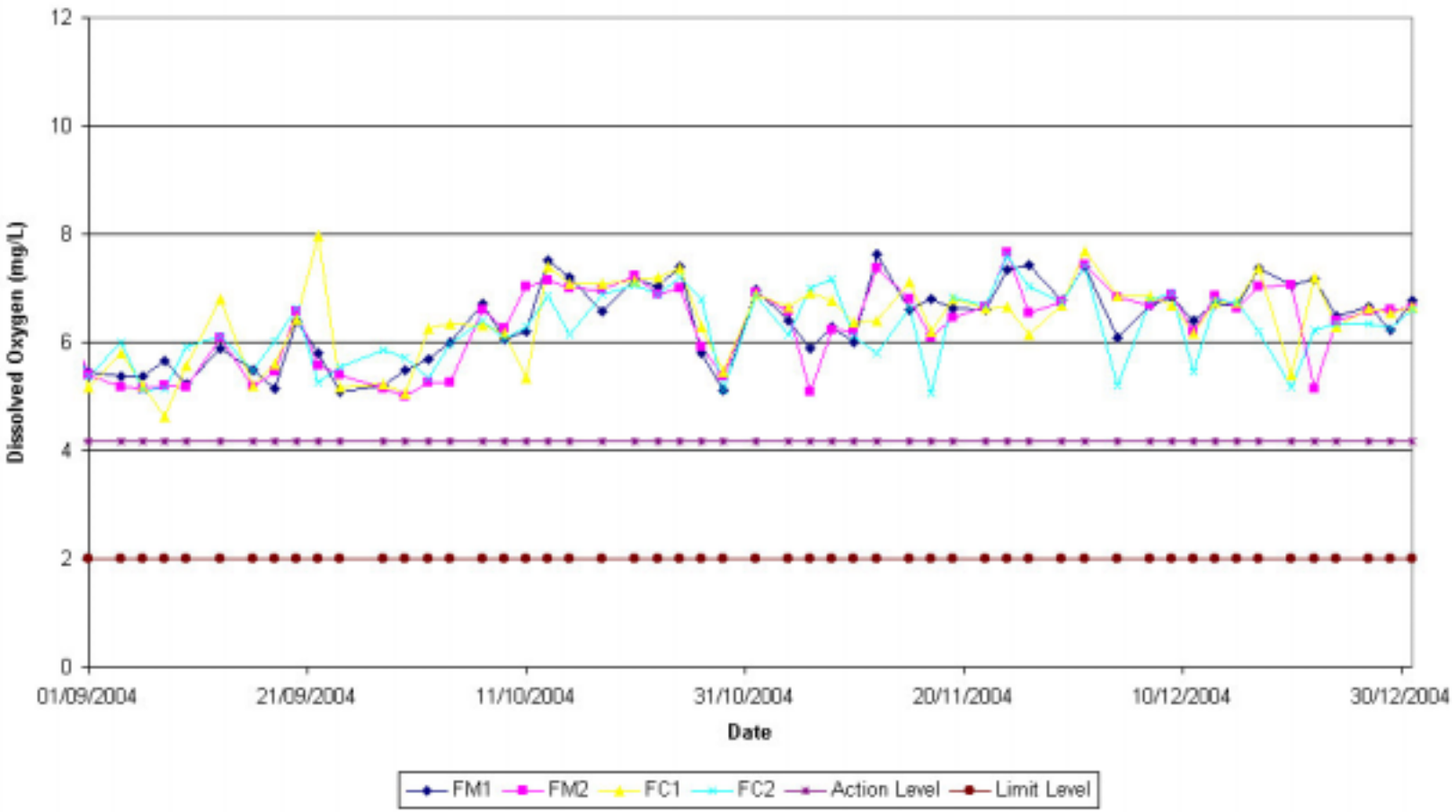


Figure 6.6 - Bottom Averaged Dissolved Oxygen - Mid-Ebb

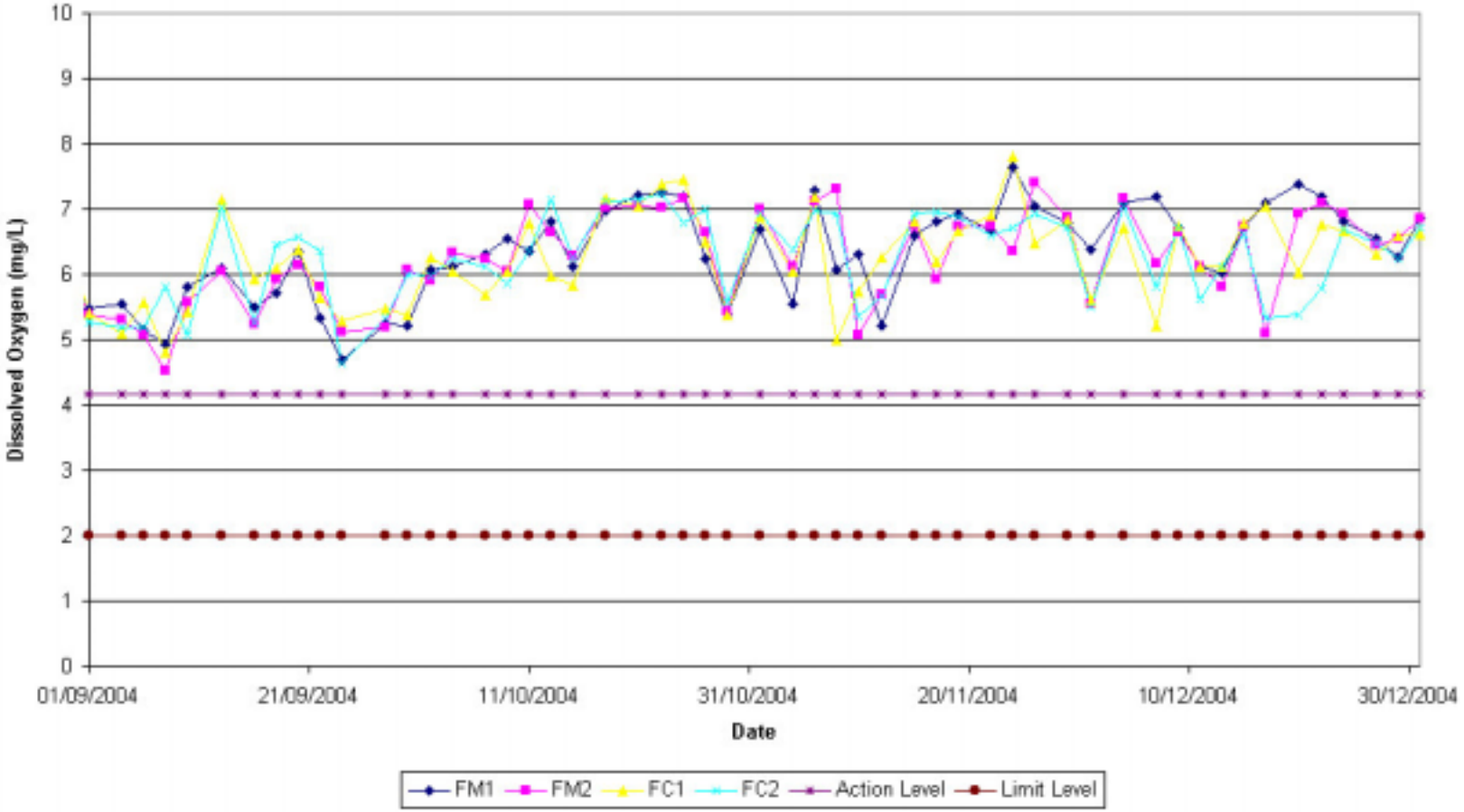


Figure 6.7 - Depth Averaged Turbidity - Mid-Flood

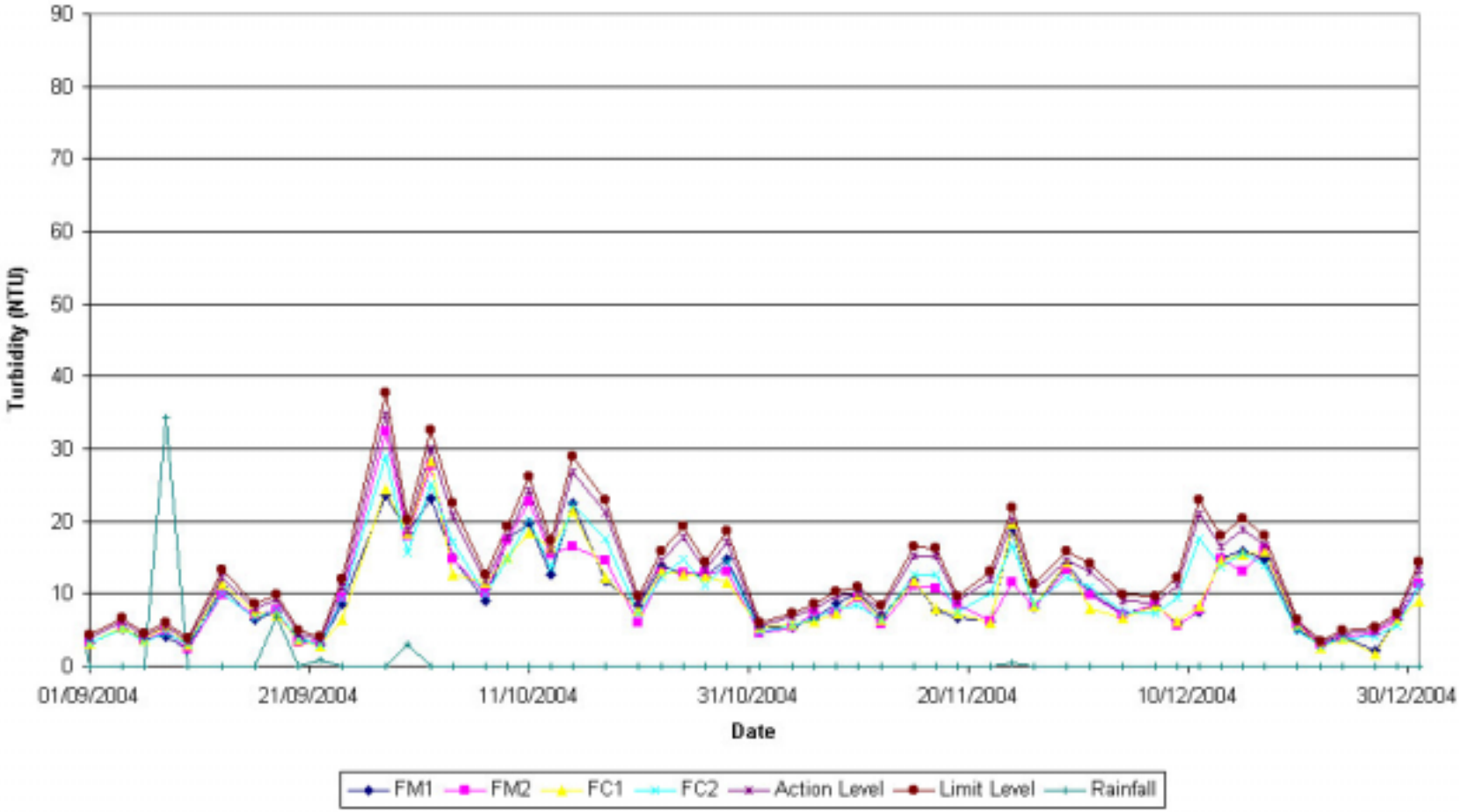


Figure 6.8 - Depth Averaged Turbidity - Mid-Ebb

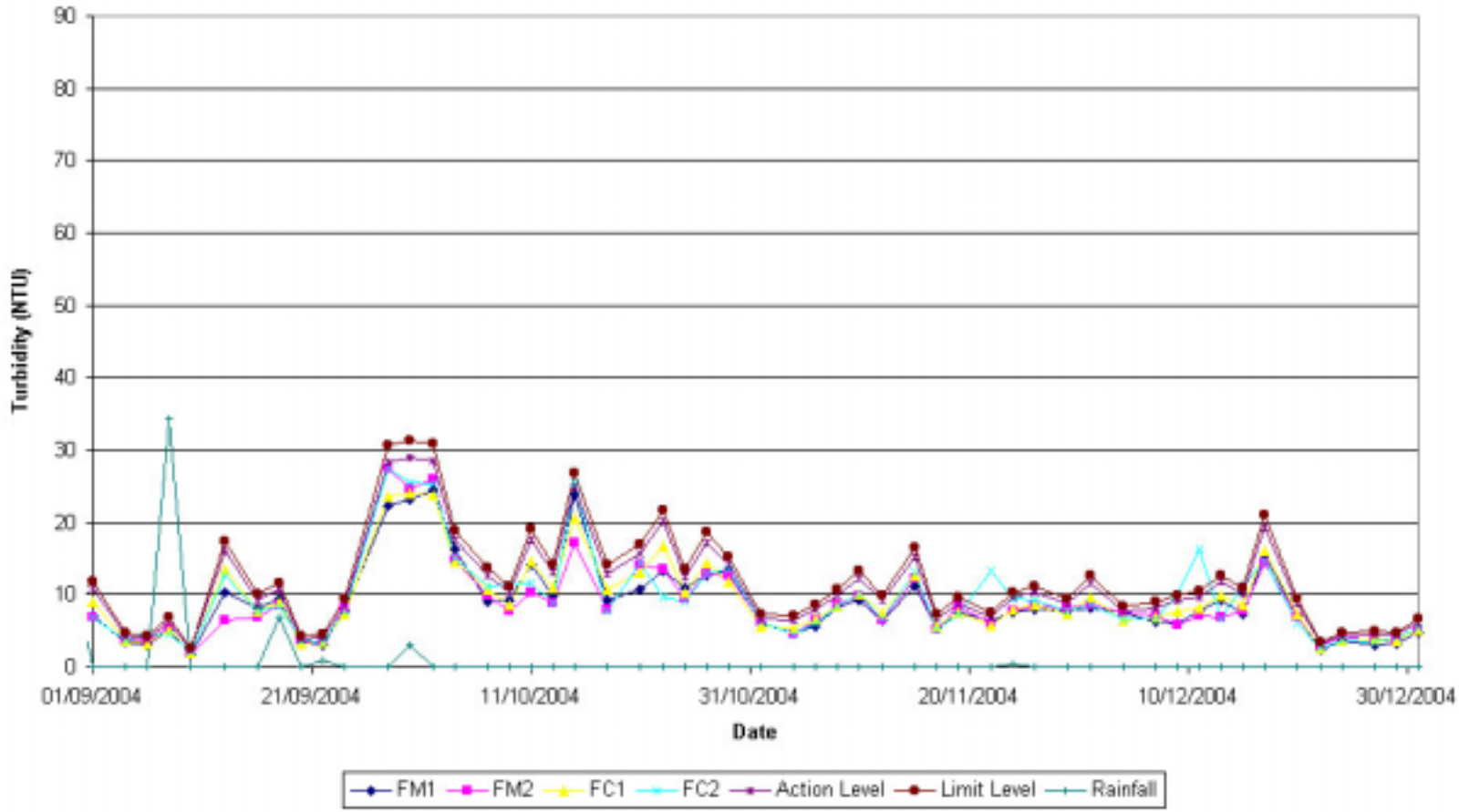


Figure 6.9 - Depth Averaged Suspended Solids - Mid-Flood

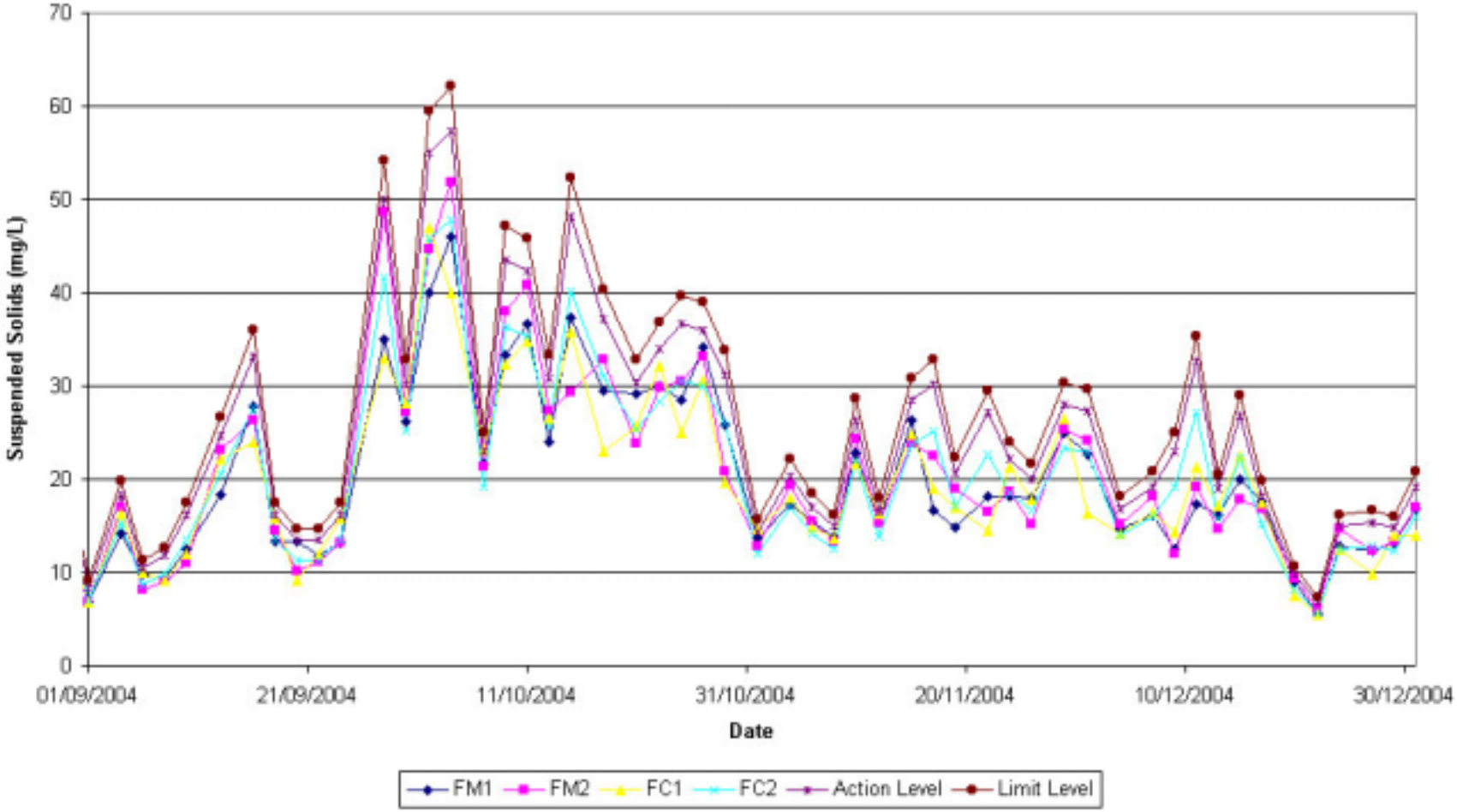
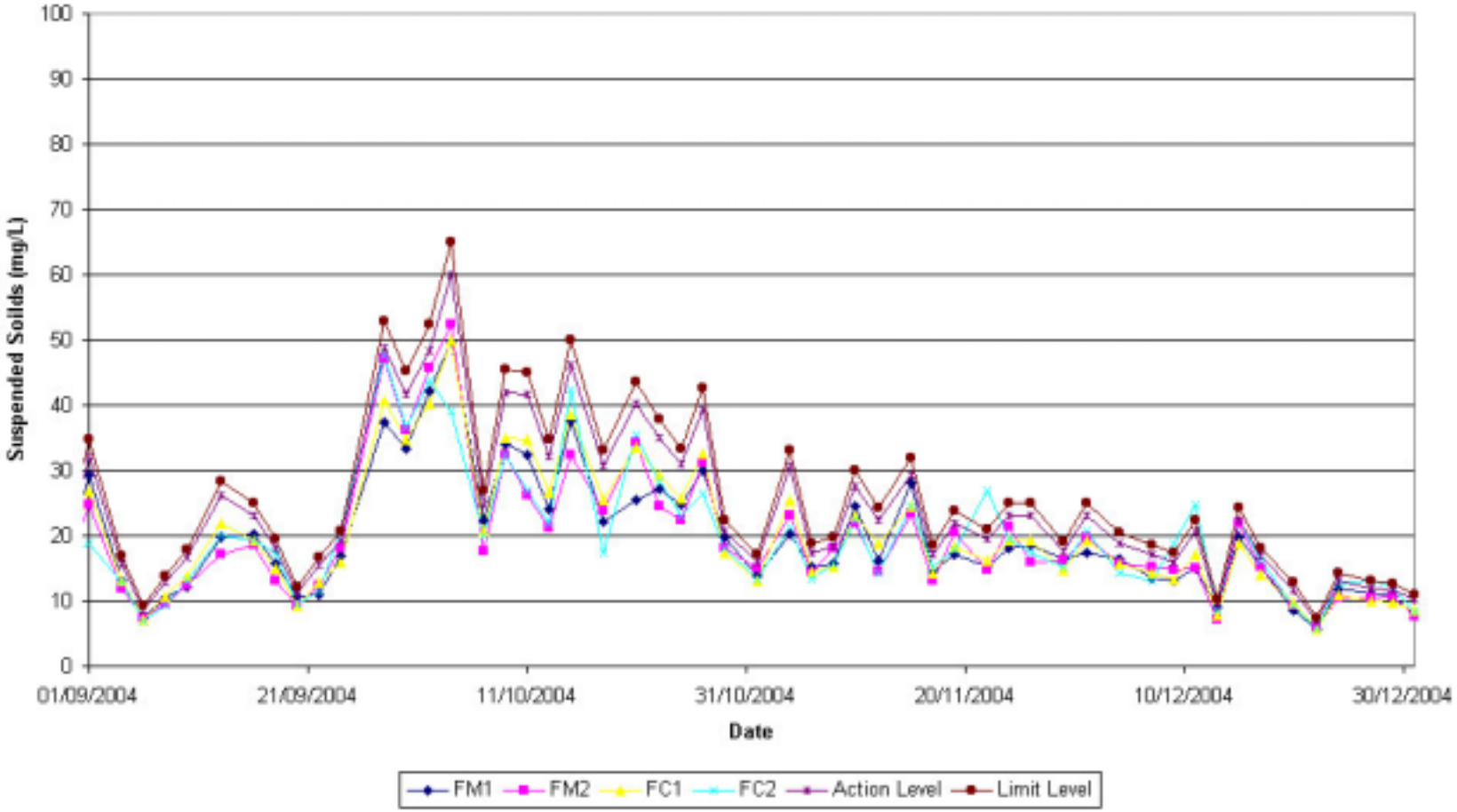


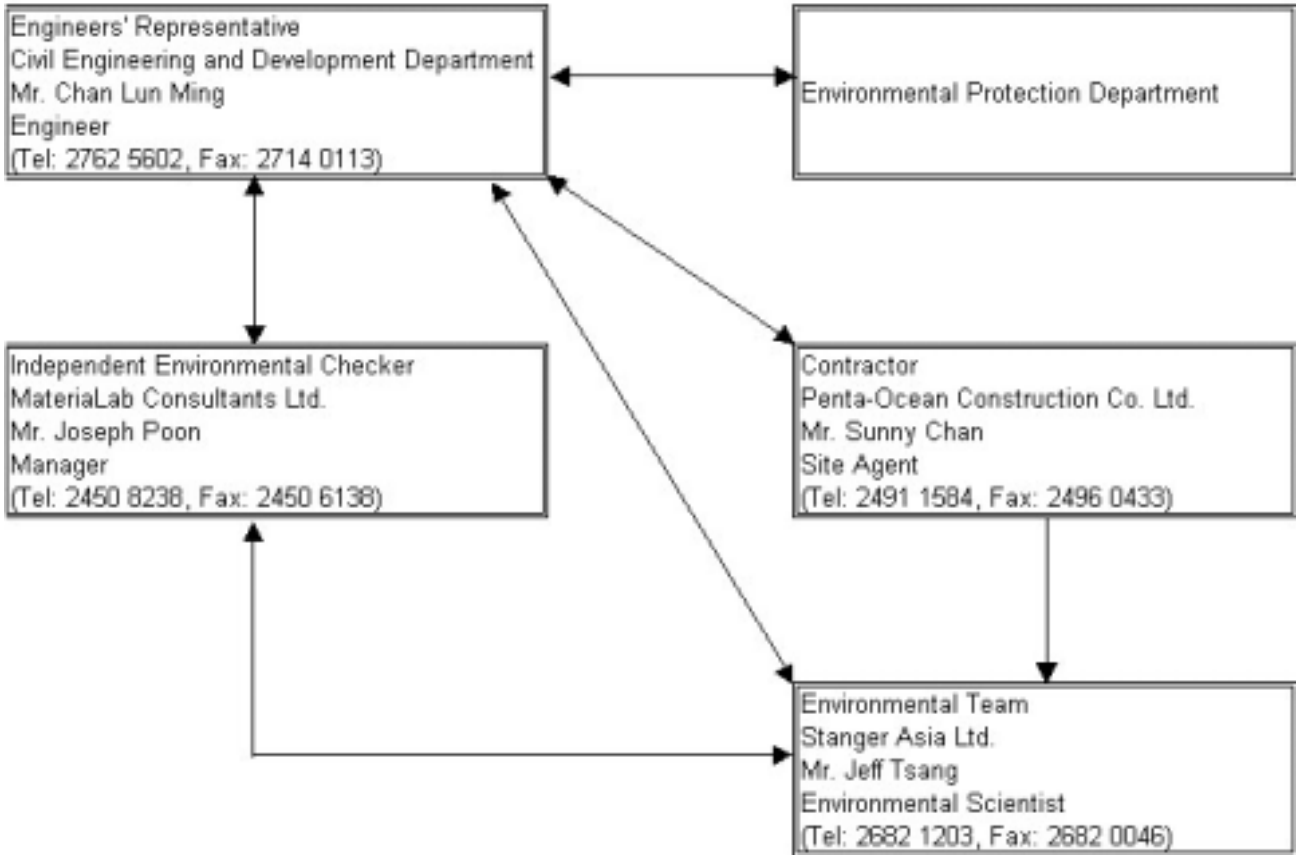
Figure 6.10 - Depth Averaged Suspended Solids - Mid-Ebb



Appendix I

Organization Chart

Project Organization (Environmental)
Fill Bank at Tuen Mun Area 38
Contract No. CV/2002/13



Appendix II

Calibration Certificates of the Monitoring Equipment

Stanger Asia

SOMP ENV092 : CALIBRATION RECORD OF HIGH VOLUME AIR SAMPLER (TSP)

Date: 16/11/2004

Temp: 25 °C

At. Press: 752 mm Hg

Calibrated by: Dennis Tsui

Next Calibration Due Date: 16/12/2004

Equipment No.: EM 3252

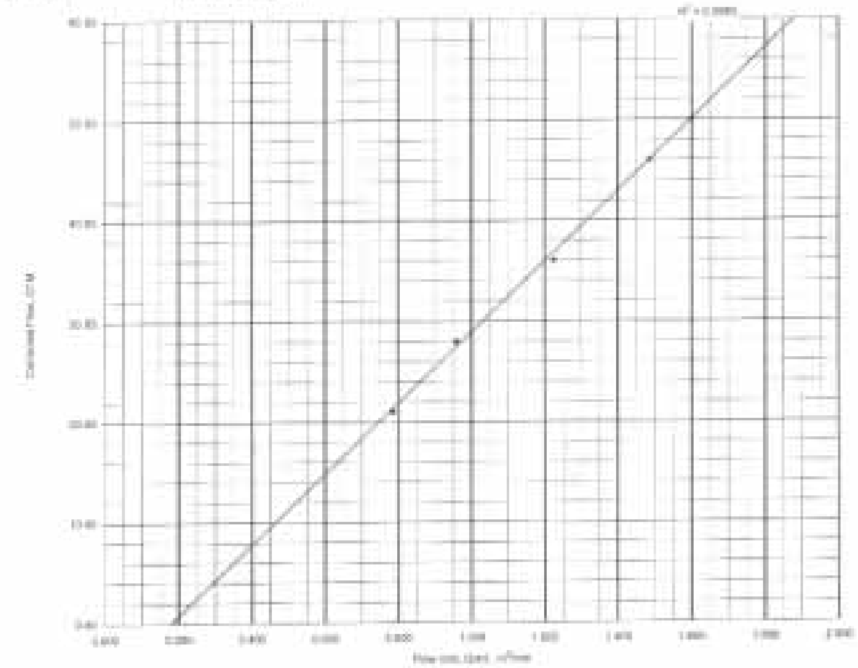
Serial No.:

Calibration No.:

Plate	Flow Rate (m^3/min)	True (in.H2O)	Corrected Flow (CFM)
18	1.620	10.1	49.89
13	1.490	8.7	45.83
10	1.225	5.8	35.89
7	0.956	3.6	27.30
5	0.785	2.4	20.89

Remarks: The correlation coefficient is larger than 0.99 indicates the calibration is linear.
Slope= 30.158424
Intercept= -0.266196

Location: Tuen Mun Area 38 - A1



Tester: Dennis Tsui

Checked By: Arthur Cheng

Stanger Asia

SOMP ENV052 : CALIBRATION RECORD OF HIGH VOLUME AIR SAMPLER (TSP)

Date: 16/12/2004

Temp.: 20 °C

At. Press: 704 mm Hg

Calibrated by: Dennis Tsui

Next Calibration Due Date: 16/02/2005

Equipment No.: EM8052

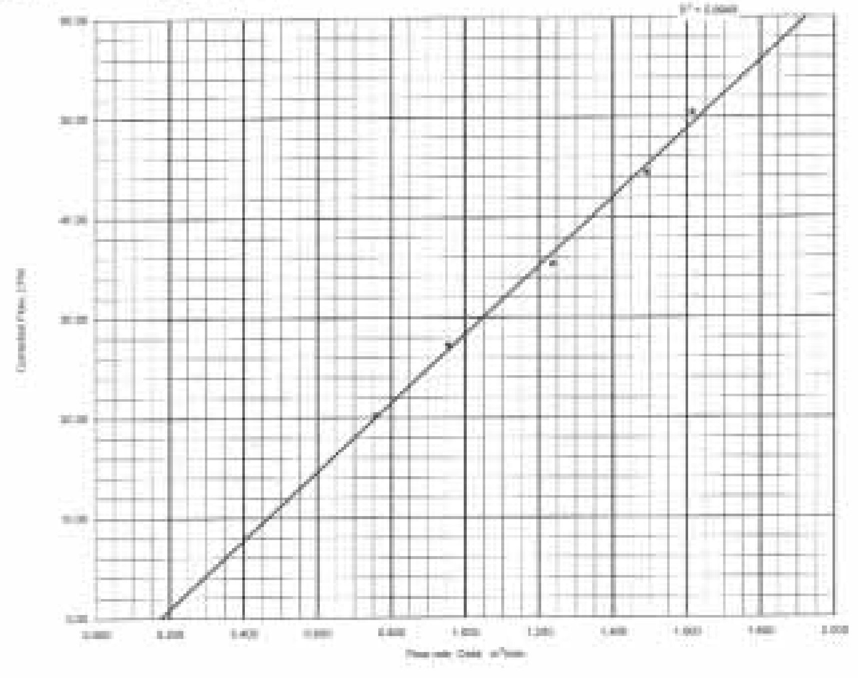
Serial No.:

Calibration No.:

Plate	Flow Rate (m^3/min)	True (H_2O)	Corrected Flow (CFM)
18	1.816	10.1	50.47
13	1.490	6.8	44.42
10	1.237	5.8	35.33
7	0.985	3.5	27.26
5	0.790	2.3	20.13

Remarks: The correlation coefficient is larger than 0.99 indicates the calibration is linear.
Slope= 34.288867
Intercept= -0.015829

Location: Tuen Mun Area 38 - A1



Tester: Dennis Tsui

Checked By: Arthur Cheng

Stanger Asia

SOMP ENV002 : CALIBRATION RECORD OF HIGH VOLUME AIR SAMPLER (TSP)

Date: 18/10/2004

Temp.: 25 °C

At. Press: 762 mm Hg

Calibrated by: Dennis Tsui

Next Calibration Due Date: 18/12/2004

Equipment No.: EM5303

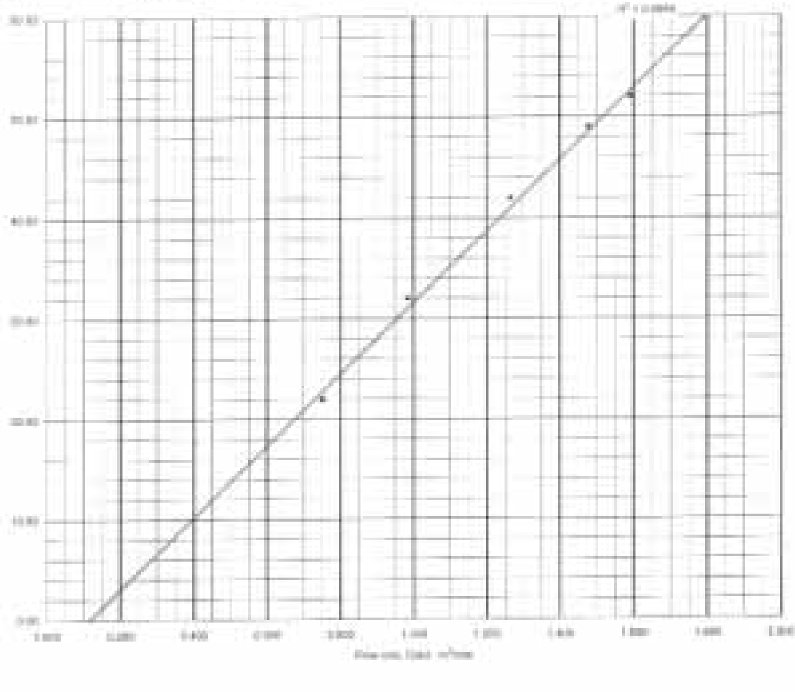
Serial No.: 1120000305

Calibration No.:

Plate	Flow Rate (m³/min)	Tlaa (H₂O)	Corrected Flow (CFM)
18	1.592	10.0	51.98
13	1.477	8.6	45.96
10	1.288	6.3	41.98
7	0.980	3.9	31.89
5	0.752	2.2	21.88

Remarks: The correlation coefficient is larger than 0.99 indicates the calibration is linear.
Slope= 35.072877
Intercept= -3.308422

Location: Tuen Mun Area 38 - A2



Tester: Dennis Tsui

Checked By: Arthur Cheng

Stanger Asia

SOMP ENV052 : CALIBRATION RECORD OF HIGH VOLUME AIR SAMPLER (TSP)

Date: 16/12/2004

Temp.: 20 °C

At. Press: 764 mm Hg

Calibrated by: Dennis Tsui

Next Calibration Due Date: 16/03/2005

Equipment No.: EM2053

Serial No.: 1100000000

Calibration No.:

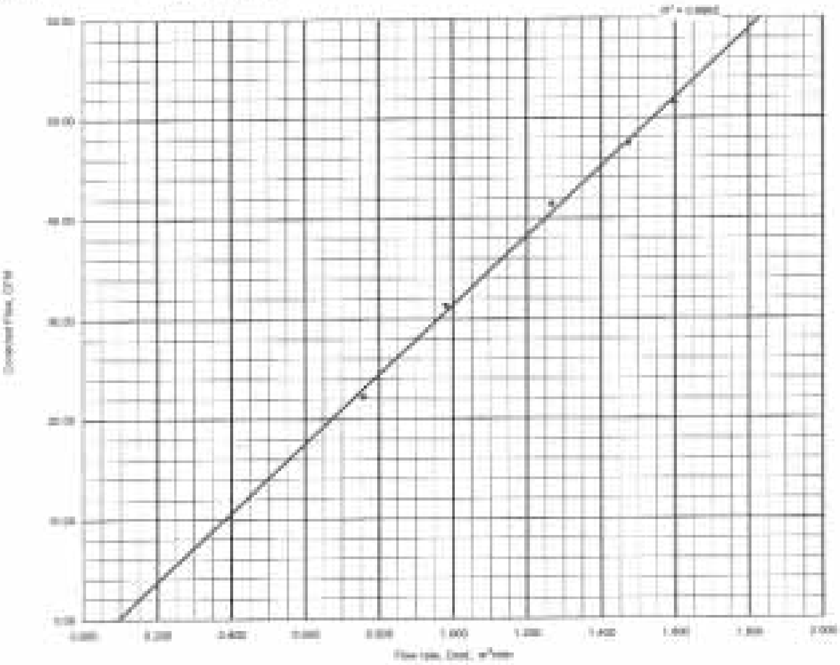
Plate	Flow Rate (m^3/min)	True in H_2O	Corrected Flow (CFM)
18	1.500	9.9	51.45
13	1.474	8.4	47.44
10	1.258	6.2	41.39
7	0.992	3.7	31.23
5	0.758	2.2	22.21

Remarks: The correlation coefficient is larger than 0.99 indicates the calibration is linear.

Slope= 34.509435

Intercept= -0.219808

Location: Tuen Mun Area 38 - A2



Tester: Dennis Tsui

Checked By: Arthur Cheng

Stanger Asia

SOMP ENV062: CALIBRATION RECORD OF TURBIDIMETER

Date of Calibration: 24/09/2004

Due Date of Next Calibration: 24/12/2004

Equipment No.: EM 2365

Manufacturer: HACH

Model: 2100P

Serial No.: 970500014289

Turbidimeter Calibration standard (HACH): No.1: 20 NTU
No.2: 100 NTU
No.3: 800 NTU

Stock Calibration standard No.: 803

Three-point calibration accepted: (Y) / N

Stock Calibration checking standards No. QCS 935

Turbidity value - Checking standards (NTU)		
Actual value	Measured value	Accepted*: Y/N
0	0	Y
5	5.2	Y
10	11.0	Y
50	53.2	Y
100	102	Y
400	396	Y

*Allowing Deviation: +/- 10%

Tested by: Dennis Tsui

Checked by: Jeff Tsang

Stanger Asia

SOMP ENV062: CALIBRATION RECORD OF TURBIDIMETER

Date of Calibration: 24/12/2004

Due Date of Next Calibration: 24/03/2005

Equipment No.: EM 2365

Manufacturer: HACH

Model: 2100P

Serial No.: 970500014289

Turbidimeter Calibration standard (HACH): No.1: 20 NTU

No.2: 100 NTU

No.3: 800 NTU

Stock Calibration standard No.: 896

Three-point calibration accepted: Y / N

Stock Calibration checking standards No. QCS 965

Turbidity value - Checking standards (NTU)		
Actual value	Measured value	Accepted*: Y/N
0	0	Y
5	5.31	Y
10	10.8	Y
50	52.3	Y
100	103	Y
400	406	Y

*Allowing Deviation: +/- 10%

Tested by: Dennis Tsui

Checked by: Jeff Tsang

Stanger Asia

SOMP ENV066 : CALIBRATION RECORD OF YSI MODEL 30 HANDHELD SALINITY, CONDUCTIVITY & TEMPERATURE SYSTEM

Equipment No. EM 3694

Serial No. 00F0285AA

Date of Calibration: 17/09/2004

Due Date of Next Calibration: 17/12/2004

Stock Calibration Standard Potassium Chloride No. 625

Stock Calibration Check Potassium Chloride No. 648

Volumetric glassware employed: V16, V17, V104, V111, V116, V117

Calibration Check of the Salinity, Conductivity and Temperature System	
Calibration Check Solutions, ppt	Meter reading, ppt
0.0	0.0
10.0	10.1
20.0	20.2
30.0	32.0
40.0	42.9
Allowing deviation : ± 10%	

Tested by : Arthur Cheng

Checked By : Jeff Tsang

Stanger Asia

SOMP ENV066 : CALIBRATION RECORD OF YSI MODEL 30 HANDHELD SALINITY, CONDUCTIVITY & TEMPERATURE SYSTEM

Calibration No. 04/435

Equipment No. EM 3694

Serial No. 00F0285AA

Date of Calibration: 17/12/2004

Due Date of Next Calibration: 17/03/2005

APPROVED FOR USE BY
Dennis Tsui
POSITION
Env. Scientist

Stock Calibration Standard Potassium Chloride No. 316

Stock Calibration Check Potassium Chloride No. 648

Volumetric glassware employed: V20, V17, V100, V105, V109, V119

Calibration Check of the Salinity, Conductivity and Temperature System	
Calibration Check Solutions, ppt	Meter reading, ppt
0.0	0.0
10.0	10.3
20.0	21.0
30.0	31.6
40.0	43.5
Allowing deviation : ± 10%	

Tested by : Dennis Tsui

Checked By : Jeff Tsang

Stanger Asia

SOMP ENV064 : CALIBRATION RECORD OF DISSOLVED OXYGEN METER

Dissolved Oxygen Meter Equipment No.: EM 961

Dissolved Oxygen Serial No.: 93M12874

Dissolved Oxygen Probe Serial No.: 96K0145

Date of Calibration.: 24-09-2004

Due Date of Next Calibration.: 24-12-2004

Molarity of sodium thiosulphate solution: 0.0253M

Potassium Bi-iodate No.: 480

Standardisation of Sodium Thiosulphate Solution			
Standard Solution	Initial burette reading B, mL	Final burette reading C, mL	Vol. of $Na_2S_2O_3$ used A, mL = (C - B)
Standard 1	0.00	20.20	20.20
Standard 2	0.00	20.20	20.20
Standard 3	0.00	20.20	20.20
		Average Value	20.20

Calibration of the Dissolved Oxygen Meter					
Standard Solutions	Initial burette reading B, mL	Final burette reading C, mL	Vol. of $Na_2S_2O_3$ used A, mL = (C - B)	D.O. by titration, mg/L	Meter reading, mg/L
A	0.00	2.05	2.05	2.07	2.04
B	0.00	5.45	5.45	5.50	5.40
C	0.00	6.80	6.80	6.87	6.75
D	0.00	7.95	7.95	8.03	7.95
Allowing deviation : ± 10%					

Tested by : ____________ Dennis Tsui

Checked By : ____________ Jeff Tsang

Stanger Asia

SOMP ENV064 : CALIBRATION RECORD OF DISSOLVED OXYGEN METER

Dissolved Oxygen Meter Equipment No.: EM 961

Dissolved Oxygen Serial No.: 93M12874

Dissolved Oxygen Probe Serial No.: 96K0145

Date of Calibration.: 24-12-2004

Due Date of Next Calibration.: 24-03-2005

Molarity of sodium thiosulphate solution: 0.0250M

Potassium Bi-iodate No.: 480

Standardisation of Sodium Thiosulphate Solution			
Standard Solution	Initial burette reading B, mL	Final burette reading C, mL	Vol. of $Na_2S_2O_3$ used A, mL = (C – B)
Standard 1	0.00	20.00	20.00
Standard 2	0.00	20.00	20.00
Standard 3	0.00	20.10	20.10
		Average Value	20.03

Calibration of the Dissolved Oxygen Meter					
Standard Solutions	Initial burette reading B, mL	Final burette reading C, mL	Vol. of $Na_2S_2O_3$ used A, mL = (C – B)	D.O. by titration, mg/L	Meter reading, mg/L
A	0.00	1.95	1.95	1.95	1.99
B	0.00	5.60	5.60	5.61	5.65
C	0.00	7.05	7.05	7.06	7.12
D	0.00	8.22	8.22	8.23	8.35
Allowing deviation : ± 10%					

Tested by : _____ Dennis Tsui

Checked By : _____ Jeff Tsang

Stanger Asia

SOMP ENV071: CALIBRATION RECORD OF DISSOLVED OXYGEN, SALINITY, CONDUCTIVITY, TEMPERATURE SYSTEM

Equipment No.: EM 6167

Model No.: YSI 85

Equipment Serial No.: 04L1806

Date of Calibration.: 15-12-2004

Due Date of Next Calibration.: 15-03-2005

Molarity of sodium thiosulphate solution: 0.0250M

Potassium Bi-iodate No.: 480

Stock Calibration Standard Potassium Chloride No. 316

Stock Calibration Check Potassium Chloride No. 648

Reference Thermometer No. RF2358

Calibration Check for Dissolved Oxygen

Standardisation of Sodium Thiosulphate Solution			
Standard Solution	Initial burette reading B, mL	Final burette reading C, mL	Vol. of $Na_2S_2O_3$ used A, mL = (C – B)
Standard 1	0.00	20.00	20.00
Standard 2	0.00	20.00	20.00
Standard 3	0.00	20.10	20.10
		Average Value	20.03

Calibration of the Dissolved Oxygen					
Standard Solutions	Initial burette reading B, mL	Final burette reading C, mL	Vol. of $Na_2S_2O_3$ used A, mL = (C – B)	D.O. by titration, mg/L	Meter reading, mg/L
A	0.00	2.44	2.44	2.44	2.38
B	0.00	5.45	5.45	5.46	5.40
C	0.00	7.10	7.10	7.11	7.01
D	0.00	8.31	8.31	8.32	8.21
Allowing deviation : ± 10%					

Calibration Check for Salinity

Calibration Check of the Salinity	
Calibration Check Solutions, ppt	Meter reading, ppt
0.0	0.0
10.0	10.4
20.0	20.9
30.0	31.8
40.0	42.5
Allowing deviation : ± 10%	

Stanger Asia

Calibration Check for Temperature

Calibration Check of the Temperature	
Reference Thermometer reading, °C	Meter reading, °C
0.00	0.0
15.10	15.1
24.90	25.0
30.10	30.1
Allowing deviation : ± 0.5 °C	

Tested by : _____ Dennis Tsui

Checked By : _____ Jeff Tsang

Appendix III

Event and Actions Plans

Event and Action Plan for Air Quality

EVENT	ACTION			
	ET Leader	**IC (E)**	**ER**	**CONTRACTOR**
Action Level				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures. 2. Inform ER, IEC and Contractor. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET. 2. Check Contractor's working methods.	1. Notify Contractor.	1. Rectify unacceptable practice. 2. Amend working methods if appropriate.
Exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures. 2. Inform IEC and Contractor. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency to daily. 5. Discuss with IEC and Contractor on remedial actions. 6. If exceedance continues, arrange meeting with IEC and ER. 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET. 2. Check Contractor's working method. 3. Discuss with ET and Contractor on possible remedial measures. 4. Advise the ER on the effectiveness of the proposed remedial measures. 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Ensure remedial actions are properly implemented.	1. Submit proposals for remedial actions to ER within 3 working days of notification. 2. Implement the agreed proposals. 3. Amend proposals if appropriate.

Event and Action Plan for Air Quality (cont'd)

EVENT	ACTION			
	ET Leader	**IC (E)**	**ER**	**CONTRCATOR**
Limit Level				
Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures. 2. Inform ER, Contractor and EPD. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency to daily. 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET. 2. Check Contractor's working method. 4. Discuss with ET and Contractor on possible remedial measures. 5. Advise the ER on the effectiveness of the proposed remedial measures. 6. Supervisor implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Ensure remedial actions properly implemented.	1. Take immediate action to avoid further exceedances. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Amend proposal if appropriate.
Exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures. 2. Inform IEC, ER and Contractor and EPD. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation measure(s) to be implemented. 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken. 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET and Contractor on the potential remedial actions. 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented. 4. Ensure remedial measures properly implemented. 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Water Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level				
Action level being exceeded by one sampling day.	1. Repeat in-situ measurements to confirm findings; 2. Identify source(s) of impacts; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. Repeat measurements on next day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise ER accordingly; 3. Assess the effectiveness of implemented mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER; 6. Implement the agreed mitigation measures.
Action level being exceeded by more than one consecutive sampling day.	1. Repeat in-situ measurements to confirm findings; 2. Identify source(s) of impact; 3. Inform contractor and IEC; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Prepare to increase the monitoring frequency to daily; 8. Repeat measurements on next day of exceedance.	1. Discuss with ET and Contractor on the proposed mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor advise ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with the ET and IEC and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures.

Event and Action Plan for Water Quality (Cont'd)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit level				
Limit level being exceeded by one sampling day.	1. Repeat in-situ measurements to confirm findings; 2. Identify source(s) of impact; 3. Inform contractor and IEC; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Prepare to increase the monitoring frequency to daily until no exceedance of Limit level.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly; 3. Assess the effectiveness of implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with the ET and IEC and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures.
Limit level being exceeded by more than one sampling day.	1. Repeat in-situ measurements to confirm findings; 2. Identify source(s) of impact; 3. Inform contractor and IEC; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by the Contractor and advise ER accordingly; 3. Assess the effectiveness of implemented mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures. 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of works identified as the cause of exceedance until no exceedance of Limit level.	1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with the ET and IEC and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures; 7. As directed by the Engineer, slow down or stop all or part of theworks identified as the cause of exceedance or construction activities.

Appendix IV

Implementation Status of Mitigation Measures

IMPLEMENTATION STATUS OF MITIGATION MEASURES

Area	Mitigation Measures	Implementation Period	Implementation Status
1. General	Maximum stockpiling height to be limited to a maximum of +35mPD.	Throughout the operation period	Implemented
2. Air Quality	Working areas where excavation or earthmoving operations are taking place shall be sprayed with water or a dusty suppression chemical.	Throughout the operation period	Implemented
	Any stockpiling of excavated material shall be covered by impervious sheeting or sprayed with water or a dust suppression chemical.	Throughout the operation period	Occasionally implemented
	All roads within the site to be covered with concrete, bituminous materials, hardcore or metal plates.	Throughout the operation period	Implemented
	Erect a hoarding of at least 2.4m high along the northern and eastern boundaries of the site except at the site entrance/exit. Before occupation of the Recovery Park Phase I and II, site hoarding of at least 2.4m high should also be erected along the western boundary of the fill bank.	Throughout the operation period	Implemented
	Install/refurnish vehicle wheel washing facilities including high pressure water jets provided at designated vehicle exit points.	Throughout the operation period	Implemented
	At the barging point, the drop height between the barge and dump trucks shall be minimized.	Throughout the operation period	Implemented
	Tipping halls provided for transfer of public fill from trucks to barges shall be top and 3-sides enclosed.	Throughout the operation period	Implemented
	Water lorries and/or road sweepers shall be provided and used in dust suppression.	Throughout the operation period	Implemented
	The designated main haul roads shall be watered at approximately every 2 hours to ensure that the roads are kept sufficiently dampened.	Throughout the operation period	Implemented

Area	Mitigation Measures	Implementation Period	Implementation Status
2. Air Quality	Truck speed to be controlled to within 10 km/hr.	Throughout the operation period	Implemented
	All dusty fill material shall be sprayed with water or a dust suppression chemical prior to loading, unloading or transfer.	Throughout the operation period	Occasionally Implemented
	Frequent watering (at least three times per day) of the worksites with active dusty operations is recommended. The frequency shall be increased when the weather is dry.	Throughout the operation period	Implemented
	Loading of public fill delivered to the site shall be sprayed with water at the material landing point to minimize dust emission except when the materials are sufficiently dampened when landing.	Throughout the operation period	Occasionally Implemented
	Vehicle washing facilities including high pressure water jet at the existing exits shall be maintained and operated by designated staff to ensure that these dust control measures are being used.	Throughout the operation period	Implemented
	Before leaving the fill bank site, every vehicle shall be washed to remove any dusty materials from its body and wheels.	Throughout the operation period	Implemented
	Trucks carrying dusty loads entered to the site shall be sprayed with water once the impervious sheeting covering the load is removed.	Throughout the operation period	Occasionally Implemented
	A minimum buffer distance of 20m shall always be maintained between the edge of public fill stockpiling area and the nearest air sensitive receivers at the River Trade Terminal.	Throughout the operation period	Implemented
	An area of 100m x 100m in the north-eastern corner of the stockpiling area shall be managed by the Contractor as a “truckload control zone”. Number of trucks traveling to the control zone shall be limited to a maximum of 64 vehicles per hour, and a daily maximum of 633 vehicles per day.	Throughout the operation period	Implemented

Area	Mitigation Measures	Implementation Period	Implementation Status
2. Air Quality	A minimum buffer zone of 20m shall be maintained between the edge of the public fill stockpiling area and the nearest air sensitive land use at Recovery Park Phase I and Phase II along the western boundary of the site.	Throughout the operation period	Implemented
	Temporary slope surfaces shall be covered with tarpaulin sheets or other impermeable sheets, or sprayed with water or a dust suppression chemical, or protected by other methods approved by CED.	Throughout the operation period	Partially implemented
	Final slope surfaces shall be treated by compaction, followed by hydroseeding, vegetation planting or other suitable surface stabiliser approved by CED to prevent the washing away of stockpiled material.	Throughout the operation period	Partially Implemented
	Any belt conveyor systems used for transfer of dusty materials shall be enclosed on top and 2 sides.	Throughout the operation period	N/A
	Every transfer point between two conveyors shall be totally enclosed.	Throughout the operation period	N/A
	An effective belt scraper or equivalent device shall be installed at the head pulley of every belt conveyor to dislodge fine particles that may adhere to the belt surface.	Throughout the operation period	N/A
	The belt conveyor shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	Throughout the operation period	N/A
	Every stockpiling belt conveyor shall be provided with a mechanism to adjust its level such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	Throughout the operation period	N/A
	Dusty materials loaded from a belt conveyor outlet to stockpiles, storage bins, trucks, barges and other open areas shall be sprayed with water or a dust suppression chemical.	Throughout the operation period	N/A

Area	Mitigation Measures	Implementation Period	Implementation Status
2. Air Quality	Frequent mist spraying should be applied on dusty areas. The frequency of spraying required will depend upon local meteorological conditions such as rainfall, temperature, wind speed and humidity. The amount of mist spraying should be just enough to dampen the material without over-watering.	Throughout the operation period	Implemented
3. Noise	No project activities associated with land-based intake of public fill shall be carried out between 20:00 and 08:00 hrs daily.	Throughout the operation period	Implemented
	All construction works should be carried out during the non-restricted hours (i.e. 7:00 a.m. to 7:00 p.m. on weekdays other then General Holidays).	Throughout the operation period	N/A
	Before the commencement of any works that may generate a significant noise impact, the Contractor should submit to the Engineer for approval the method of working, equipment and sound-reducing measures (e.g. use of silenced type equipment).	Throughout the operation period	N/A
	The fill bank should not be in operation from 8:00 p.m. to 8:00 a.m. the next day.	Throughout the operation period	N/A
4. Water Quality	Trapezoidal surface channels should be constructed to intercept polluted surface runoff. These channels shall be equipped with sand/de-silting traps such that the effluent discharged from site during the establishment, operation and decommissioning phases will meet the required discharge limits.	Throughout the operation period	Implemented
	Tipping halls at the waterfront provided for transfer of public fill from trucks to barges shall be enclosed design with the top 3-sides enclosed to prevent spillage of material into the marine water.	Throughout the operation period	Implemented
	Before the completion of the surface drainage channels at the commencement of the project, earth bunds and sand bag barriers shall be use at required locations to effectively divert storm water to available drainage channels constructed under the reclamation works.	Throughout the operation period	Implemented

Area	Mitigation Measures	Implementation Period	Implementation Status
4. Water Quality	Temporary drainage facilities provided shall allow polluted stormwater to be diverted to existing intercepting channels before stockpiling of public fill should begin.	Throughout the operation period	Implemented
	Intercepting channels shall be equipped with sand/silt removal facilities to allow the stormwater to be treated before discharge at the designated outfalls.	Throughout the operation period	Implemented
	Effluent discharged shall meet the relevant discharge limits.	Throughout the operation period	N/A
	A minimum buffer distance of 50m will be provided between the edge of the stockpiling area of the fill bank and seafront.	Throughout the operation period	Implemented
	Open channels and/or other effective drainage system shall be constructed at the perimeter of the site for intercepting and directing runoff to sand/silt removal facilities prior to discharge.	Throughout the operation period	Implemented
	The unpaved area on the seaward side of the channels shall be covered with gravel and formed with slope so that polluted stormwater will be intercepted by the channels.	Throughout the operation period	Implemented
	Any excavated material generated near the seafront (e.g. from the construction of the barging point) not required to be backfilled immediately should be transported away from the seafront to avoid potential water quality impact especially during the rainy season.	Throughout the operation period	Implemented
	Public fill transported to the stockpiling area for storage should not contain unsuitable material such as peat, vegetation, timber, organic, soluble or perishable material, dangerous or toxic material, floatable materials (such as bottle, plastic bags, foam box), and materials susceptible to combustion.	Throughout the operation period	Implemented

Area	Mitigation Measures	Implementation Period	Implementation Status
4. Water Quality	Temporary slope surfaces shall be covered as far as practicable and as soon as possible with tarpaulin or other impermeable sheets, or protected by other methods approved by CED when rainstorms are likely, especially when a rainstorm is imminent or forecast.	Throughout the operation period	Partially Implemented
	Final slope surfaces shall be treated by compaction, followed by hydroseeding, vegetation planting or other suitable stabilizer approved by CED to prevent the washing away of stockpiled material.	Throughout the operation period	Partially Implemented
	Adequately designed and constructed catchpits, sand and silt removal facilities and intercepting channels should be maintained, and the deposited silt and grit should be removed weekly and on a as need basis especially during the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	Throughout the operation period	Implemented
	A wheel washing bay should be provided at the site exit and washwater should have sand and silt settled out or removed before the water is being reused or discharged into storm drains.	Throughout the operation period	Implemented
	All vehicles and plant bodies should be cleaned before they leave the fill bank site to ensure that no earth, mud or debris is deposited by them on roads.	Throughout the operation period	Implemented
	The section of construction road between the wheel washing bay and the public road should be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public roads drains.	Throughout the operation period	Implemented

Area	Mitigation Measures	Implementation Period	Implementation Status
4. Water Quality	Sewage from toilets and similar facilities should be discharged into a foul sewer, or chemical toilets should be provided. Should chemical toilets be employed these must be provided by a licensed contractor, who will be responsible for appropriate disposal and maintenance of these facilities.	Throughout the operation period	Implemented
	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into foul sewers via grease traps.	Throughout the operation period	N/A
	Drainage systems provided at car parking areas shall be provided with oil interceptors in addition to sand/silt removal facilities.	Throughout the operation period	N/A
	All barges used in the transportation of fill material during the operation/decommissioning stages should be properly licensed under the Shipping and Port Control Ordinance, and of appropriate size such that adequate clearance is maintained between the vessels and the sea bed at all states of the tide.	Throughout the operation period	Implemented
	All vessels used for transportation of fill material should have tight fitting seals to their bottom openings.	Throughout the operation period	Implemented
	When backhoe fixed on an appropriately designed flat-top pontoon is in use, the reach of the backhoe shall be controlled to within the flat-top pontoon of sufficient length to avoid accidental dropping of public fill into the sea.	Throughout the operation period	N/A
	When hopper barges with mobile crane is in use, guardrails or equivalent shall be fixed alongside the berthing faces to guide the movement of the crane to avoid accidental dropping of fill material.	Throughout the operation period	N/A
	When derrick barges with built-in crane are in use, the reach of the jig shall be controlled to within the length of the barge to avoid accidental dropping of public fill into the sea.	Throughout the operation period	Implemented

Area	Mitigation Measures	Implementation Period	Implementation Status
4. Water Quality	The design of the specific transfer methods shall be as such that the pathway of material delivery from barge to the waterfront will not be directly on top of the marine water.	Throughout the operation period	Implemented
	Barges should not be filled to a level which may cause overflow of material during loading or transportation.	Throughout the operation period	Implemented
	Barge effluents (e.g. muddy water) should be properly collected and treated prior to disposal.	Throughout the operation period	Implemented
	Work activities should not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging point.	Throughout the operation period	Implemented
	A waste collection vessel shall be deployed to remove floating refuse on the sea near the fill bank for proper disposal.	Throughout the operation period	Occasionally Implemented
5. Landfill Gas	Main site offices of the fill bank shall be constructed within the site area lying outside the 250m consultation zone of the restored Siu Lang Shui Landfill.	Throughout the operation period	Implemented
	The container office(s) to be set up at the site entrance/exit which is situated within the construction zone of the landfill shall be constructed on a raised hollow platform, or equivalent.	Throughout the operation period	Implemented
	No underground structures such as drainage and sewage systems, underground pipelines and chambers shall be constructed at the site area lying within the consultation zone.	Throughout the operation period	Implemented
	In the unlikely event that any sign of leachate-contaminated groundwater be encountered during the establishment, operation or decommissioning phases of the fill bank, the landfill operator should be informed so that this can be collected for proper treatment and disposal.	Throughout the operation period	Implemented

Area	Mitigation Measures	Implementation Period	Implementation Status
6. Landscape and Visual	Hydroseeding or coloured geo-textile matting (dark green/brown) shall be provided on the slopes of the fill bank along the eastern, northern and western sides of the fill bank as the slopes of each layer of platform are formed.	Throughout the operation period	Partially Implemented
	A buffer tree planting strip should be provided along the northern perimeter of the site where space permits. A row of approximately 3m high native evergreen tree species with a tall habit when fully grown (e.g. Casuarina equisetifolia) shall be planted at the early establishment/ operational phase of the project.	Throughout the operation period	Implemented
	The design, colour and finish of structures at the fill bank should be such that they are visually recessive. Reflectivity should be reduced through selection of material or surface treatment.	Throughout the operation period	Implemented
	The surface colour selected should be of an earthy tone with strong natural qualities (e.g. green/grey/brown). The use of bold colour schemes should be avoided.	Throughout the operation period	Implemented
	The existing 2.4m high site hoarding located along Lung Mun Road should be maintained to help screening of the fill bank.	Throughout the operation period	Implemented

Appendix V

Air Quality Monitoring Results

Report on 24-hour Total Suspended Particulate Monitoring - A1

Sample Number	Location Code	Date and Time of Sampling	Start Counter Reading	Stop Counter Reading	Temperature, °C Initial/Final	Pressure, mmHg Initial/Final	Weather Conditions	Wind Direction	Weight of Filter, g Initial/Final	Flow rate $Q_{std.}$, std. m^3/min	Total air volume of sample, std. m^3	Mass Concentration of TSP,	$\mu g/std.\ m^3$
13314	A1	01/12/2004	2426.97	2451.30	22	765	Sunny	E	2.8414	1.32	1927	107	
		16:10			22	765			3.0467				
13329	A1	07/12/2004	2454.30	2479.37	19	768	Sunny	N	2.8667	1.32	1986	117	
		14:15			18	767			3.0990				
13345	A1	13/12/2004	2482.37	2507.84	19	766	Sunny	E	2.8557	1.32	2017	113	
		15:11			19	764			3.0836				
13024	A1	20/12/2004	2510.67	2536.19	20	762	Sunny	E	2.8277	1.34	2036	136	
		14:30			20	763			3.1039				
13370	A1	24/12/2004	2539.19	2563.99	20	764	Sunny	E	2.8539	1.34	1994	115	
		16:25			19	764			3.0835				
13395	A1	30/12/2004	2566.99	2591.67	14	767	Cloudy	N	2.8462	1.37	2029	102	
		15:25			9	770			3.0522				

Report on 24-hour Total Suspended Particulate Monitoring - A2

Sample Number	Location Code	Date and Time of Sampling	Start Counter Reading	Stop Counter Reading	Temperature, °C Initial/Final	Pressure, mmHg Initial/Final	Weather Conditions	Wind Direction	Weight of Filter, g Initial/Final	Flow rate $Q_{std.}$, std. m^3/min	Total air volume of sample, std. m^3	Mass Concentration of TSP,	$\mu g/std.\ m^3$
13310	A2	01/12/2004	10606.35	10630.35	22	765	Sunny	E	2.8630	1.32	1901	139	
		16:15			22	765			3.1275				
13330	A2	07/12/2004	10633.35	10657.35	19	768	Sunny	N	2.8392	1.35	1944	139	
		14:25			18	767			3.1086				
13346	A2	13/12/2004	10660.35	10684.35	19	766	Sunny	E	2.8457	1.24	1786	125	
		15:21			19	764			3.0693				
13020	A2	20/12/2004	10687.99	10711.99	20	762	Sunny	E	2.8241	1.37	1973	67	
		14:40			20	763			2.9557				
13367	A2	24/12/2004	10714.99	10738.99	20	764	Sunny	E	2.8550	1.37	1973	102	
		16:05			19	764			3.0557				
13393	A2	30/12/2004	10741.99	10766.00	14	767	Cloudy	N	2.8511	1.4	2017	71	
		15:15			9	770			2.9948				

Report on 1-hour Total Suspended Particulate Monitoring - A1

Sample Number	Location Code	Date and Time of Sampling	Start Counter Reading	Stop Counter Reading	Temperature, °C	Pressure, mmHg	Weather Conditions	Wind Direction	Weight of Filter, g Initial/Final	Flow rate $Q_{std.}$ std. m^3/min	Total air volume of sample, std. m^3	Mass Concentration of TSP,	μg/std. m^3
13303	A1	01/12/2004 09:40	2423.97	2424.97	22	765	Sunny	E	2.8557 2.8729	1.32	79	217	
13312	A1	01/12/2004 13:00	2424.97	2425.97	22	765	Sunny	E	2.8570 2.8726	1.32	79	197	
13313	A1	01/12/2004 14:05	2425.97	2426.97	22	765	Sunny	E	2.8497 2.8682	1.32	79	234	
13322	A1	07/12/2004 09:35	2451.30	2452.30	19	768	Sunny	N	2.8422 2.8618	1.32	79	247	
13227	A1	07/12/2004 10:35	2452.30	2453.30	19	768	Sunny	N	2.8495 2.8738	1.32	79	307	
13230	A1	07/12/2004 13:05	2453.30	2454.30	19	768	Sunny	N	2.8346 2.8500	1.32	79	194	
13336	A1	13/12/2004 10:15	2479.37	2480.37	19	766	Sunny	E	2.8389 2.8583	1.32	79	245	
13339	A1	13/12/2004 13:05	2480.37	2481.37	19	766	Sunny	E	2.8509 2.8656	1.32	79	186	
13342	A1	13/12/2004 14:10	2481.37	2482.37	19	766	Sunny	E	2.8551 2.8748	1.32	79	249	
13021	A1	20/12/2004 09:05	2507.87	2508.87	20	762	Sunny	E	2.8305 2.8522	1.34	80	270	
13022	A1	20/12/2004 10:10	2508.87	2509.87	20	762	Sunny	E	2.8179 2.8402	1.37	82	271	
13023	A1	20/12/2004 13:10	2509.87	2510.87	20	762	Sunny	E	2.8245 2.8420	1.34	80	218	
13360	A1	24/12/2004 10:25	2536.19	2537.19	20	764	Sunny	E	2.8443 2.8646	1.34	80	252	
13363	A1	24/12/2004 13:05	2537.19	2538.19	20	764	Sunny	E	2.8493 2.8723	1.34	80	286	
13365	A1	24/12/2004 14:10	2538.19	2539.19	20	764	Sunny	E	2.8410 2.8635	1.34	80	280	
13385	A1	30/12/2004 10:20	2563.99	2564.99	14	767	Cloudy	N	2.8242 2.8405	1.37	82	198	
13387	A1	30/12/2004 11:25	2564.99	2565.99	14	767	Cloudy	N	2.8467 2.8710	1.37	82	296	
13392	A1	30/12/2004 14:15	2565.99	2566.99	14	767	Cloudy	N	2.8509 2.8673	1.37	82	200	

Report on 1-hour Total Suspended Particulate Monitoring - A2

Sample Number	Location Code	Date and Time of Sampling	Start Counter Reading	Stop Counter Reading	Temperature, °C	Pressure, mmHg	Weather Conditions	Wind Direction	Weight of Filter, g Initial/Final	Flow rate $Q_{std.}$ std. m^3/min	Total air volume of sample, std. m^3	Mass Concentration of TSP,	μg/std. m^3
13304	A2	01/12/2004 09:45	10603.35	10604.35	22	765	Sunny	E	2.8495 2.8710	1.35	81	265	
13306	A2	01/12/2004 13:05	10604.35	10605.35	22	765	Sunny	E	2.8520 2.8697	1.35	81	219	
13308	A2	01/12/2004 14:10	10605.35	10606.35	22	765	Sunny	E	2.8506 2.8640	1.35	81	165	
13323	A2	07/12/2004 09:45	10630.35	10631.35	19	768	Sunny	N	2.8282 2.8485	1.35	81	251	
13326	A2	07/12/2004 10:45	10631.35	10632.35	19	768	Sunny	N	2.8386 2.8631	1.35	81	302	
13328	A2	07/12/2004 13:10	10632.35	10633.35	19	768	Sunny	N	2.8734 2.8970	1.35	81	291	
13337	A2	13/12/2004 10:30	10657.35	10658.35	19	766	Sunny	E	2.8554 2.8738	1.24	74	247	
13340	A2	13/12/2004 13:10	10658.35	10659.35	19	766	Sunny	E	2.8542 2.8736	1.24	74	261	
13343	A2	13/12/2004 14:20	10659.35	10660.35	19	766	Sunny	E	2.8523 2.8702	1.24	74	241	
13016	A2	20/12/2004 09:15	10684.99	10685.99	20	762	Sunny	E	2.8205 2.8455	1.37	82	304	
13017	A2	20/12/2004 10:20	10685.99	10686.99	20	762	Sunny	E	2.8233 2.8457	1.37	82	273	
13018	A2	20/12/2004 13:15	10686.99	10687.99	20	762	Sunny	E	2.8300 2.8526	1.34	80	281	
13361	A2	24/12/2004 10:40	10711.99	10712.99	20	764	Sunny	E	2.8467 2.8656	1.37	82	230	
13364	A2	24/12/2004 13:15	10712.99	10713.99	20	764	Sunny	E	2.8361 2.8573	1.37	82	258	
13367	A2	24/12/2004 14:25	10713.99	10714.99	20	764	Sunny	E	2.8549 2.8776	1.37	82	276	
13386	A2	30/12/2004 10:30	10738.99	10739.99	14	767	Cloudy	N	2.8290 2.8541	1.43	86	293	
13388	A2	30/12/2004 11:35	10739.99	10740.99	14	767	Cloudy	N	2.8451 2.8664	1.4	84	254	
13390	A2	30/12/2004 13:45	10740.99	10741.99	14	767	Cloudy	N	2.8488 2.8702	1.4	84	255	

Appendix VI

Water Quality Monitoring Results

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 01/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 30 | Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	11:15	Small wave	18.0	1.0	24.6	24.6	8.01	8.06	7.62	94.2	92.1	90.1	31.6	31.6	8.97	8.73	10.13	19	22	22.7	
FM1 M				9.0	24.5	24.5	7.19	7.20		86.7	87.2		31.6	31.6	10.30	11.80		23	25		
FM1 B				17.0	24.2	24.2	7.46	7.36	7.41	90.5	90.3	90.4	31.6	31.6	10.20	10.60		23	24		
	11:25	Small wave	18.0	1.0	24.7	24.7	8.23	8.23	7.91	99.4	99.6	96.6	31.4	31.4	8.96	9.42	9.89	22	24	24.2	
FM2 M				9.0	24.6	24.6	7.60	7.56		91.4	91.9		31.5	31.5	12.10	11.00		30	25		
FM2 B				17.0	24.1	24.1	7.43	7.44	7.44	90.7	89.7	90.2	31.5	31.5	8.94	8.92		22	22		
	11:40	Small wave	23.0	1.0	24.6	24.6	8.11	7.95	7.85	95.4	94.7	92.8	31.0	31.0	6.53	6.74	7.97	14	16	16.3	
FC1 M				11.5	24.6	24.6	7.56	7.77		90.5	90.7		31.7	31.7	8.03	8.38		19	22		
FC1 B				22.0	24.2	24.6	7.81	7.56	7.69	91.4	91.6	91.5	31.7	31.7	8.69	9.47		14	13		
FC2 S	11:00	Small wave	18.0	1.0	24.5	24.5	8.17	8.16	7.83	96.4	97.5	93.9	30.5	30.5	9.17	9.36	10.92	22	19	22.8	
FC2 M				9.0	24.2	24.2	7.69	7.41		90.1	91.6		31.5	31.5	12.40	12.00		24	25		
FC2 B				17.0	24.1	24.1	7.42	7.39	7.41	89.8	87.5	88.7	31.6	31.6	11.30	11.30		24	23		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used: Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok | Sampled By:

Turbidity Meter: EM 2365 | Calibration Check: 4.58, 46.1, 451 NTU | Checked By:

Salinity Meter: EM 3694 | Calibration Check: 58.8 mS | Date:

Thermometer: ET 961

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 01/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 31 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	15:25	Small wave	17.0	1.0	25.6	25.7	7.01	7.11	6.99	85.6	86.9	86.1	30.9	30.9	9.11	8.08	8.05	17	18	17.5	
FM1 M				8.5	24.8	24.9	6.96	6.87		84.3	83.6		31.4	31.4	7.27	7.97		17	16		
FM1 B				16.0	24.7	24.7	6.41	6.36	6.39	80.3	79.1	79.7	31.5	31.5	7.75	8.10		18	19		
FM2 S	15:40	Small wave	17.0	1.0	25.4	25.4	6.94	6.85	6.76	83.1	84.5	82.4	31.1	31.1	7.55	7.50	8.62	22	19	19.7	
FM2 M				8.5	25.0	25.0	6.54	6.72		80.2	81.6		31.5	31.5	8.65	9.13		18	17		
FM2 B				16.0	24.7	24.7	5.51	5.56	5.54	74.5	75.6	75.1	31.6	31.6	9.38	9.52		21	21		
FC1 S	15:10	Small wave	22.0	1.0	25.1	25.1	6.09	6.14	5.96	75.7	76.0	74.7	31.4	31.4	8.57	9.41	9.73	17	17	19.3	
FC1 M				11.0	25.4	25.4	5.72	5.89		74.3	72.6		31.5	31.5	9.60	10.20		20	19		
FC1 B				21.0	25.3	25.3	5.69	5.51	5.60	72.1	72.4	72.3	31.6	31.6	10.00	10.60		20	23		
FC2 S	15:55	Small wave	17.0	1.0	25.2	25.2	6.24	6.36	5.91	76.9	78.3	75.8	30.8	30.8	7.53	7.53	8.49	22	20	20.7	
FC2 M				8.5	25.1	25.0	5.62	5.43		74.3	73.7		31.7	31.7	8.78	8.24		21	22		
FC2 B				16.0	25.4	25.4	5.37	5.61	5.49	72.8	74.6	73.7	31.8	31.8	9.78	9.08		21	18		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:
- Dissolved Oxygen Meter: EM 961 — Calibration Check: 0mg/L: ok 100%: ok
- Turbidity Meter: EM 2365 — Calibration Check: 4.59, 45.1, 460 NTU
- Salinity Meter: EM 3694 — Calibration Check: 58.8 mS
- Thermometer: ET 961

Sampled By:
Checked By:
Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 04/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 29 | Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	17:25	Big wave	18.0	1.0	26.1	26.0	7.21	7.16	6.69	88.7	86.4	82.7	30.7	30.7	5.53	5.60	7.25	14	15	14.7	
FM1 M				9.0	26.0	26.0	6.20	6.17		77.6	77.9		31.2	31.2	8.17	8.21		15	16		
FM1 B				17.0	25.7	25.7	6.11	6.08	6.10	76.4	75.8	76.1	31.4	31.4	7.98	7.99		13	15		
FM2 S	17:15	Big wave	18.0	1.0	25.8	25.8	7.56	7.54	7.49	90.1	90.6	89.7	31.0	31.0	5.83	5.70	7.09	16	18	15.2	
FM2 M				9.0	25.6	25.6	7.41	7.43		89.6	88.5		31.4	31.4	6.66	6.76		17	16		
FM2 B				17.0	25.7	25.7	6.86	6.81	6.84	83.4	84.1	83.8	31.4	31.4	8.97	8.61		13	11		
FC1 S	17:40	Big wave	23.0	1.0	25.7	25.7	7.10	7.09	7.15	87.5	86.9	87.7	31.1	31.1	5.64	5.72	6.99	12	13	14.2	
FC1 M				11.5	25.6	25.6	7.20	7.21		88.6	87.6		31.2	31.2	5.98	5.87		15	16		
FC1 B				22.0	25.4	25.4	6.87	6.87	6.87	83.6	84.7	84.2	31.4	31.4	8.11	8.21		14	15		
FC2 S	17:05	Big wave	18.0	1.0	25.7	25.7	7.10	7.06	6.40	87.4	87.1	81.6	31.1	31.1	6.97	6.81	7.53	12	13	14.0	
FC2 M				9.0	25.6	25.6	5.77	5.68		75.7	76.1		31.4	31.4	7.07	7.16		16	15		
FC2 B				17.0	25.4	25.4	5.21	5.16	5.19	72.6	73.7	73.2	31.4	31.4	8.57	8.60		16	13		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used:

Dissolved Oxygen Meter:	EM	961	Calibration Check: 0mg/L: ok 100%: ok
Turbidity Meter:	EM	2365	Calibration Check: 4.52, 46.1, 457 NTU
Salinity Meter:	EM	3694	Calibration Check: 58.8 mS
Thermometer:	ET	961	

Sampled By:

Checked By:

Date:

Project:	Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38									Client:	Penta-Ocean Construction Co., Ltd.		Job No.:	4494.1							
Date of Sampling:	04/12/2004			Weather Condition:		Sunny				Ambient Temperature,°C:	27			Tide State:	Mid-Ebb						

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	07:15	Big wave	17.0	1.0	25.7	25.7	7.21	7.30	7.15	88.6	87.6	87.0	30.9	30.9	5.97	5.74	7.54	17	17	16.5	
FM1 M				8.5	25.4	25.4	7.06	7.04		85.7	86.1		31.2	31.2	6.97	7.11		20	18		
FM1 B				16.0	25.0	25.0	7.11	7.09	7.10	86.6	86.1	86.4	31.4	31.4	9.82	9.60		14	13		
FM2 S	07:25	Big wave	17.0	1.0	25.6	25.6	7.64	7.62	7.53	90.1	91.4	90.0	30.8	30.7	6.91	6.86	7.42	15	13	15.7	
FM2 M				8.5	25.7	25.7	7.41	7.43		89.7	88.6		31.0	31.0	7.62	7.11		16	16		
FM2 B				16.0	25.2	25.2	7.16	7.17	7.17	87.6	86.4	87.0	31.2	31.2	8.06	7.97		17	17		
FC1 S	07:05	Big wave	22.0	1.0	25.4	25.4	8.26	8.17	7.69	99.6	96.7	92.8	31.2	31.2	6.14	6.21	6.50	15	17	15.7	
FC1 M				11.0	25.2	25.2	7.16	7.17		87.8	86.9		31.4	31.4	6.36	6.47		16	17		
FC1 B				21.0	25.1	25.1	6.72	6.71	6.72	82.6	81.4	82.0	31.6	31.7	6.97	6.86		15	14		
FC2 S	07:40	Big wave	17.0	1.0	25.4	25.4	8.11	8.09	7.88	96.4	95.6	93.9	31.1	31.1	5.76	5.74	6.57	18	17	14.3	
FC2 M				8.5	25.0	25.0	7.70	7.61		91.4	92.3		31.6	31.6	6.72	6.91		13	12		
FC2 B				16.0	24.9	24.9	7.01	7.06	7.04	85.7	86.1	85.9	31.7	31.7	7.14	7.16		14	12		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used:	Dissolved Oxygen Meter:	EM	961	Calibration Check:	Omg/L:	ok	100%:	ok		Sampled By:	
	Turbidity Meter:	EM	2365	Calibration Check:	4.59,	45.2,	455	NTU		Checked By:	
	Salinity Meter:	EM	3684	Calibration Check:	58.6	mS				Date:	
	Thermometer:	ET	961								

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 — Client: Penta-Ocean Construction Co., Ltd. — Job No.: 4894.1

Date of Sampling: 07/12/2004 — Weather Condition: Sunny — Ambient Temperature,°C: 23 — Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	15:40	Small wave	17.0	1.0	23.4	23.4	6.99	6.98	6.92	99.2	99.0	96.8	31.9	31.8	6.46	6.92	8.29	14	13	16.2	
FM1 M				8.5	23.0	23.1	6.84	6.86		94.3	94.6		32.0	32.1	8.53	9.21		18	17		
FM1 B				16.0	22.9	23.0	6.65	6.71	6.68	86.7	87.9	87.3	31.8	32.0	9.42	9.19		17	18		
FM2 S	15:30	Small wave	17.0	1.0	23.3	23.3	6.78	6.85	6.79	90.8	92.3	91.0	32.2	32.3	8.79	9.19	8.50	18	17	18.2	
FM2 M				8.5	23.1	23.1	6.72	6.80		90.0	90.8		31.9	32.0	8.49	8.25		21	18		
FM2 B				16.0	22.9	22.9	6.68	6.72	6.70	87.9	88.7	88.3	31.7	31.8	7.91	8.39		18	17		
FC1 S	15:55	Small wave	22.0	1.0	23.3	23.4	6.94	6.93	6.94	98.2	98.4	98.4	32.0	32.3	8.14	8.65	8.28	16	17	16.5	
FC1 M				11.0	23.2	23.3	6.90	6.99		97.6	99.5		32.3	32.1	7.38	8.17		17	17		
FC1 B				21.0	23.2	23.1	6.86	6.87	6.87	96.4	96.1	95.8	31.9	31.7	8.66	8.70		17	15		
FC2 S	15:20	Small wave	17.0	1.0	23.2	23.3	6.72	6.84	6.84	90.1	92.4	92.1	32.3	31.9	6.53	7.10	7.36	17	17	16.0	
FC2 M				8.5	22.9	23.0	6.89	6.92		92.5	93.2		32.1	32.3	7.25	7.89		15	17		
FC2 B				16.0	22.7	22.8	6.74	6.78	6.76	90.4	91.0	90.7	32.3	32.5	7.88	7.48		16	14		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used: Dissolved Oxygen Meter: EM 961 — Calibration Check: 0mg/L: ok 100%: ok — Sampled By:

Turbidity Meter: EM 2365 — Calibration Check: 4.45, 45.3, 453 NTU — Checked By:

Salinity Meter: EM 3694 — Calibration Check: 58.8 mS — Date:

Thermometer: ET 961

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling : 07/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 21 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C a	Temperature, °C b	Dissolved Oxygen, mg/L a	Dissolved Oxygen, mg/L b	Dissolved Oxygen, mg/L Average	Dissolved Oxygen, % a	Dissolved Oxygen, % b	Dissolved Oxygen, % Average	Salinity, ppt a	Salinity, ppt b	Turbidity, NTU a	Turbidity, NTU b	Turbidity, NTU Average	Suspended Solids, mg/L		Suspended Solids, mg/L Depth Average	Remarks
FM1 S	08:35	Small wave	17.0	1.0	22.4	22.5	6.97	6.87	6.70	84.6	83.2	82.3	32.1	32.1	4.81	5.64	6.26	12	12	13.5	
FM1 M				8.5	22.6	22.6	6.54	6.41		80.4	80.9		32.4	32.4	7.35	6.48		16	15		
FM1 B				16.0	22.6	22.6	7.20	7.16	7.18	88.7	86.9	87.8	32.5	32.5	6.84	6.44		13	13		
FM2 S	08:25	Small wave	17.0	1.0	22.6	22.6	7.17	7.20	6.91	87.7	86.5	84.1	31.9	31.9	7.40	7.03	7.15	16	15	15.3	
FM2 M				8.5	22.4	22.4	6.54	6.71		80.9	81.4		32.3	32.3	9.40	8.80		18	18		
FM2 B				16.0	22.6	22.6	6.20	6.11	6.16	77.5	77.8	77.7	32.3	32.3	6.29	4.99		12	13		
FC1 S	08:50	Small wave	22.0	1.0	22.7	22.7	6.50	6.43	6.39	80.1	81.4	79.8	31.9	31.9	7.34	7.52	6.86	12	14	14.2	
FC1 M				11.0	22.4	22.4	6.34	6.29		79.4	78.2		32.1	32.1	7.44	6.82		16	15		
FC1 B				21.0	22.7	22.7	5.17	5.26	5.22	72.1	71.7	71.9	32.1	32.1	5.94	6.07		15	14		
FC2 S	08:15	Small wave	17.0	1.0	22.4	22.4	6.42	6.36	6.30	78.4	79.3	77.3	31.9	31.9	6.76	6.87	6.60	12	12	13.2	
FC2 M				8.5	22.5	22.5	6.14	6.26		76.0	75.4		32.2	32.2	7.10	8.11		14	15		
FC2 B				16.0	22.2	22.2	5.96	5.66	5.81	75.1	74.3	74.7	32.3	32.3	6.06	6.70		14	12		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used:

Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok | Sampled By:

Turbidity Meter: EM 2365 | Calibration Check: 4.50, 45.5, 451 NTU | Checked By:

Salinity Meter: EM 3694 | Calibration Check: 58.6 mS | Date:

Thermometer: ET 961

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 09/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 25 | Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	16:55	Small wave	17.0	1.0	23.9	23.9	6.71	6.73	6.72	90.1	90.4	90.0	30.8	30.8	5.91	5.52	5.71	13	12	12.5	
FM1 M				8.5	23.6	23.7	6.69	6.73		89.4	89.9		30.6	30.7	5.73	5.77		13	12		
FM1 B				16.0	24.0	23.6	6.82	6.85	6.84	94.3	94.7	94.5	30.9	30.7	5.43	5.92		12	13		
FM2 S	16:45	Small wave	17.0	1.0	23.5	23.8	6.76	6.79	6.83	91.0	91.3	92.7	30.8	30.9	5.46	5.20	5.52	13	11	12.0	
FM2 M				8.5	23.7	23.7	6.86	6.90		94.0	94.5		31.1	30.7	4.85	5.14		12	10		
FM2 B				16.0	23.7	23.8	6.92	6.87	6.90	97.5	96.6	97.1	30.8	31.0	6.46	6.03		12	14		
FC1 S	17:05	Small wave	22.0	1.0	23.8	23.6	6.88	6.90	6.85	94.9	95.1	94.8	30.4	30.6	5.87	6.73	6.13	14	16	14.3	
FC1 M				11.0	23.8	23.8	6.80	6.80		94.6	94.7		30.6	30.8	5.80	6.33		17	15		
FC1 B				21.0	23.8	23.7	6.69	6.70	6.70	90.2	90.8	90.5	30.9	30.7	5.74	6.33		12	12		
FC2 S	16:30	Small wave	17.0	1.0	23.6	23.9	6.76	6.84	6.74	91.8	92.2	91.2	30.7	30.5	8.70	9.42	9.37	20	22	19.2	
FC2 M				8.5	23.7	23.5	6.64	6.72		89.7	90.9		30.9	30.9	8.98	9.68		18	17		
FC2 B				16.0	23.8	23.8	6.92	6.91	6.92	99.0	99.0	99.0	30.8	30.7	9.46	10.00		18	20		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used:

Dissolved Oxygen Meter:	EM	961	Calibration Check: 0mg/L: ok 100%: ok
Turbidity Meter:	EM	2365	Calibration Check: 4.58, 45.7, 455 NTU
Salinity Meter:	EM	3694	Calibration Check: 58.7 mS
Thermometer:	ET	961	

Sampled By:

Checked By:

Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 09/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 25 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	10:40	Small wave	17.0	1.0	22.9	22.8	6.98	6.90	6.81	99.2	98.4	94.7	30.9	30.8	6.74	5.97	6.07	11	11	13.0	
FM1 M				8.5	22.7	22.7	6.74	6.62		91.3	90.0		30.7	30.9	5.61	5.49		13	13		
FM1 B				16.0	22.6	22.6	6.70	6.74	6.72	90.6	91.0	90.8	30.5	30.7	6.25	6.37		14	16		
FM2 S	10:55	Small wave	17.0	1.0	22.8	22.8	6.84	6.87	6.83	94.5	94.6	94.3	30.8	30.9	5.56	5.68	5.84	19	17	14.8	
FM2 M				8.5	22.7	22.8	6.80	6.79		94.0	93.9		30.7	30.6	5.31	5.11		13	12		
FM2 B				16.0	22.8	22.8	6.60	6.68	6.64	89.7	90.8	90.3	30.6	30.4	6.40	6.95		14	14		
FC1 S	10:30	Small wave	22.0	1.0	22.6	22.7	6.90	6.91	6.88	98.4	98.5	96.3	30.9	30.8	7.35	6.63	7.63	14	14	13.3	
FC1 M				11.0	22.8	22.7	6.84	6.86		94.1	94.3		31.0	31.1	7.03	7.27		13	12		
FC1 B				21.0	22.7	22.5	6.73	6.75	6.74	90.8	91.1	91.0	30.7	30.8	8.78	8.70		14	13		
FC2 S	11:05	Small wave	17.0	1.0	22.9	23.0	6.87	6.83	6.79	89.9	89.7	89.2	30.8	30.9	9.28	9.76	10.04	22	19	18.8	
FC2 M				8.5	22.5	22.6	6.76	6.70		88.8	88.4		30.7	30.6	9.51	10.30		17	19		
FC2 B				16.0	22.8	22.9	6.71	6.72	6.72	88.0	88.2	88.1	30.7	30.8	10.90	10.50		18	18		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used:

Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok | Sampled By:

Turbidity Meter: EM 2365 | Calibration Check: 4.53, 46.0, 461 NTU | Checked By:

Salinity Meter: EM 3684 | Calibration Check: 58.7 mS | Date:

Thermometer: ET 961

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4894.1

Date of Sampling: 11/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 25 | Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C a	Temperature, °C b	Dissolved Oxygen, mg/L a	Dissolved Oxygen, mg/L b	Dissolved Oxygen, mg/L Average	Dissolved Oxygen, % a	Dissolved Oxygen, % b	Dissolved Oxygen, % Average	Salinity, ppt a	Salinity, ppt b	Turbidity, NTU a	Turbidity, NTU b	Turbidity, NTU Average	Suspended Solids, mg/L		Suspended Solids, mg/L Depth Average	Remarks
FM1 S	07:25	Big wave	18.0	1.0	23.1	23.1	7.11	7.09	6.98	87.5	87.0	86.1	31.2	31.3	6.05	6.59	7.56	16	15	17.3	
FM1 M				9.0	22.9	22.8	6.95	6.76		84.7	85.1		31.6	31.6	7.64	7.40		19	19		
FM1 B				17.0	22.7	22.7	6.45	6.36	6.41	80.0	81.4	80.7	31.7	31.7	8.67	9.00		17	18		
FM2 S	07:15	Big wave	18.0	1.0	22.9	22.9	7.14	7.30	6.93	87.6	87.9	85.2	31.4	31.4	5.89	5.45	7.66	18	17	19.2	
FM2 M				9.0	22.6	22.6	6.86	6.41		83.4	81.7		31.5	31.5	8.61	7.88		24	22		
FM2 B				17.0	22.7	22.7	6.23	6.17	6.20	75.7	74.6	75.2	31.6	31.6	9.38	8.74		18	16		
FC1 S	07:40	Big wave	23.0	1.0	23.1	23.1	7.10	7.06	7.07	87.5	86.9	86.4	31.5	31.5	6.85	6.94	8.31	17	19	21.3	
FC1 M				11.5	22.8	22.7	7.06	7.04		85.7	85.6		31.8	31.8	7.75	7.97		26	27		
FC1 B				22.0	22.5	22.5	6.11	6.20	6.16	76.4	74.7	75.6	31.8	31.8	10.50	9.84		20	19		
FC2 S	07:00	Big wave	18.0	1.0	23.0	23.0	6.98	6.89	6.36	84.8	85.9	80.3	31.4	31.4	14.10	14.00	17.57	25	25	27.2	
FC2 M				9.0	22.9	22.9	5.77	5.81		75.6	74.7		31.8	31.8	17.30	15.90		27	25		
FC2 B				17.0	22.7	22.7	5.45	5.45	5.45	73.1	73.6	73.4	31.8	31.8	22.80	21.30		31	30		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:
- Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok
- Turbidity Meter: EM 2365 | Calibration Check: 4.55, 44.7, 453 NTU
- Salinity Meter: EM 3694 | Calibration Check: 58.8 mS
- Thermometer: ET 961

Sampled By:
Checked By:
Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 11/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 25 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	12:45	Big wave	17.0	1.0	25.1	24.9	6.97	6.98	6.61	84.8	85.9	79.9	31.1	31.1	7.02	6.32	7.75	13	11	15.0	
FM1 M				8.5	25.2	25.2	6.23	6.25		74.6	74.2		31.4	31.4	7.88	7.45		18	18		
FM1 B				16.0	24.9	24.9	6.10	6.14	6.12	74.1	74.4	74.3	31.5	31.5	8.94	8.90		14	16		
FM2 S	12:55	Big wave	17.0	1.0	24.6	24.7	6.87	6.84	6.52	82.7	81.6	78.5	31.1	31.1	5.96	5.56	7.14	12	12	15.0	
FM2 M				8.5	24.2	24.2	6.17	6.21		75.4	74.1		31.4	31.4	8.04	7.42		18	21		
FM2 B				16.0	24.1	24.1	6.09	6.14	6.12	74.2	73.9	74.1	31.5	31.5	7.76	8.11		14	13		
FC1 S	12:30	Big wave	22.0	1.0	24.7	24.7	6.76	6.86	6.60	83.4	84.7	80.0	31.2	31.2	6.66	5.92	8.04	18	20	17.2	
FC1 M				11.0	24.5	24.5	6.46	6.31		75.6	76.2		31.5	31.5	8.24	8.30		20	17		
FC1 B				21.0	24.2	24.2	6.07	6.14	6.11	73.4	72.6	73.0	31.6	31.6	9.67	9.42		14	14		
FC2 S	13:05	Big wave	17.0	1.0	24.6	24.6	6.56	6.47	6.25	80.2	80.9	77.8	31.2	31.2	13.20	11.50	16.30	21	21	24.8	
FC2 M				8.5	24.6	24.5	5.97	5.98		75.4	74.6		31.5	31.5	15.60	16.90		22	23		
FC2 B				16.0	24.6	24.5	5.61	5.62	5.62	74.3	74.1	74.2	31.7	31.7	19.60	21.00		32	30		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used: Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok | Sampled By:

Turbidity Meter: EM 2365 | Calibration Check: 4.48, 44.5, 450 NTU | Checked By:

Salinity Meter: EM 3694 | Calibration Check: 58.9 mS | Date:

Thermometer: ET 961

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 13/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 23 | Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	09:10	Small wave	17.0	1.0	22.7	22.6	6.83	6.80	6.86	92.3	92.0	95.2	30.6	30.7	14.10	14.40	15.08	19	17	16.2	
FM1 M				8.5	22.4	22.4	6.92	6.89		98.4	98.1		30.7	30.7	13.80	15.10		19	19		
FM1 B				16.0	22.0	22.0	6.71	6.71	6.71	90.1	90.0	90.1	30.5	30.5	17.10	16.00		11	12		
FM2 S	09:00	Small wave	17.0	1.0	22.6	22.5	6.64	6.69	6.73	88.4	88.8	89.6	30.9	31.0	13.80	13.90	14.88	13	15	14.7	
FM2 M				8.5	22.5	22.5	6.79	6.78		90.6	90.5		30.7	30.6	14.70	14.60		15	14		
FM2 B				16.0	22.7	22.4	6.86	6.87	6.87	94.7	94.9	94.8	30.6	30.5	16.10	16.20		15	16		
FC1 S	09:20	Small wave	22.0	1.0	22.5	22.6	6.97	6.90	6.90	99.0	98.2	96.7	30.8	30.8	12.40	12.10	14.57	22	23	17.2	
FC1 M				11.0	22.3	22.4	6.88	6.86		94.8	94.6		30.6	30.7	13.20	14.00		16	16		
FC1 B				21.0	22.1	22.2	6.75	6.74	6.75	92.1	91.9	92.0	30.7	30.7	18.50	17.20		14	12		
FC2 S	08:45	Small wave	17.0	1.0	22.4	22.3	6.84	6.81	6.85	94.5	94.3	95.8	30.9	30.9	12.30	13.30	13.82	21	22	15.8	
FC2 M				8.5	22.2	22.3	6.91	6.82		97.9	96.4		30.5	30.6	14.40	13.80		10	11		
FC2 B				16.0	22.0	22.0	6.80	6.73	6.77	94.2	96.7	95.5	30.7	30.6	14.00	15.10		16	15		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used:	Dissolved Oxygen Meter:	EM 961	Calibration Check:	0mg/L: ok	100%: ok		Sampled By:
	Turbidity Meter:	EM 2365	Calibration Check:	4.55, 45.4, 452 NTU			Checked By:
	Salinity Meter:	EM 3694	Calibration Check:	58.8 mS			Date:
	Thermometer:	ET 961					

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 13/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 26 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	14:25	Small wave	17.0	1.0	24.6	24.6	6.21	6.16	6.16	77.6	78.4	76.9	30.6	30.6	9.93	8.79	9.28	8	8	9.0	
FM1 M				8.5	24.7	24.7	6.16	6.10		76.2	75.4		30.9	30.9	8.98	8.92		9	8		
FM1 B				16.0	24.1	24.1	6.05	6.01	6.03	75.4	74.6	75.0	30.9	30.9	9.48	9.57		10	11		
FM2 S	14:15	Small wave	17.0	1.0	25.6	25.6	6.36	6.34	6.25	79.5	78.4	77.9	30.6	30.7	5.72	6.37	6.82	6	7	7.2	
FM2 M				8.5	24.9	24.9	6.11	6.17		77.4	76.1		30.9	30.9	7.83	7.34		9	8		
FM2 B				16.0	24.4	24.4	5.87	5.76	5.82	77.6	77.1	77.4	30.9	30.9	6.99	6.69		7	7		
FC1 S	14:40	Small wave	22.0	1.0	24.8	24.8	6.17	6.26	6.25	76.6	76.0	77.6	30.7	30.7	9.81	9.77	9.80	6	7	7.8	
FC1 M				11.0	24.7	24.8	6.30	6.27		79.6	79.1		30.9	30.9	9.46	9.50		9	9		
FC1 B				21.0	24.6	24.6	6.16	6.10	6.13	76.5	77.7	77.1	30.9	30.9	10.50	9.75		8	8		
FC2 S	14:00	Small wave	17.0	1.0	24.7	24.7	6.34	6.47	6.23	78.6	77.9	76.2	30.8	30.8	5.89	6.14	6.71	10	9	8.5	
FC2 M				8.5	24.5	24.5	6.01	6.11		74.6	73.6		30.9	30.9	7.27	6.77		7	7		
FC2 B				16.0	24.1	24.1	6.14	6.11	6.13	74.9	75.2	75.1	30.9	30.9	6.84	7.34		9	9		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used: Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L ok 100% ok | Sampled By:

Turbidity Meter: EM 2365 | Calibration Check: 4.60, 45.3, 447 NTU | Checked By:

Salinity Meter: EM 3684 | Calibration Check: 58.7 mS | Date:

Thermometer: ET 961

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 15/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 21 | Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	10:55	Small wave	17.0	1.0	22.0	21.9	6.89	6.88	6.80	94.3	94.1	92.1	30.9	30.8	10.60	11.40	15.82	19	21	20.0	
FM1 M				8.5	21.8	21.9	6.74	6.70		90.1	89.7		30.8	30.8	13.90	15.80		19	17		
FM1 B				16.0	21.6	21.6	6.65	6.68	6.67	88.2	88.8	88.5	30.6	30.5	23.10	20.10		21	23		
FM2 S	10:45	Small wave	18.0	1.0	22.3	22.2	6.78	6.79	6.75	91.7	91.8	90.8	30.7	30.8	9.84	10.00	13.11	15	16	17.8	
FM2 M				9.0	21.9	22.0	6.70	6.71		89.6	89.9		30.8	30.7	12.20	12.90		18	20		
FM2 B				17.0	21.7	21.6	6.64	6.62	6.63	88.4	88.0	88.2	30.5	30.6	16.60	17.10		18	20		
FC1 S	11:10	Small wave	22.0	1.0	22.1	22.0	6.97	6.99	6.92	99.5	99.9	96.8	30.6	30.7	9.56	9.84	15.37	18	19	22.5	
FC1 M				11.0	22.0	22.2	6.86	6.85		94.0	93.6		30.7	30.7	11.90	12.30		23	23		
FC1 B				21.0	21.9	21.8	6.73	6.77	6.75	92.8	93.2	93.0	30.8	30.7	25.40	23.20		27	25		
FC2 S	10:30	Small wave	17.0	1.0	22.0	21.9	6.86	6.93	6.86	93.9	94.5	93.7	30.9	30.9	14.20	15.80	15.67	20	21	22.3	
FC2 M				8.5	22.1	22.0	6.81	6.84		93.0	93.3		30.8	31.0	15.60	16.10		23	25		
FC2 B				16.0	21.8	21.9	6.72	6.76	6.74	90.0	90.4	90.2	30.8	30.7	16.20	16.10		22	23		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:	Dissolved Oxygen Meter:	EM	961	Calibration Check:	0mg/L	ok	100%:	ok	Sampled By:	
	Turbidity Meter:	EM	2365	Calibration Check:	4.55,	45.7,	453	NTU	Checked By:	
	Salinity Meter:	EM	3684	Calibration Check:	58.8	mS			Date:	
	Thermometer:	ET	961							

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 15/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 23 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	15:45	Small wave	18.0	1.0	23.4	22.8	6.88	6.92	6.84	94.1	94.8	92.2	30.9	31.0	8.12	8.30	7.36	23	22	19.8	
FM1 M				9.0	23.1	23.1	6.83	6.74		89.7	90.1		31.0	30.9	8.43	8.51		22	19		
FM1 B				17.0	22.9	23.0	6.75	6.71	6.73	88.6	89.9	89.4	30.7	30.8	5.32	5.48		17	16		
FM2 S	15:55	Small wave	18.0	1.0	22.8	23.1	6.95	6.84	6.85	94.5	93.4	92.8	30.7	30.9	7.84	7.94	7.68	22	22	22.0	
FM2 M				9.0	23.2	23.0	6.88	6.72		93.3	90.0		30.6	30.8	5.83	5.99		19	19		
FM2 B				17.0	23.0	22.9	6.78	6.68	6.73	90.4	88.8	89.6	30.8	30.6	9.04	9.43		24	26		
FC1 S	15:30	Small wave	22.0	1.0	22.6	23.0	6.99	6.99	6.93	99.9	99.9	96.9	30.8	30.9	7.30	7.82	8.48	17	17	18.7	
FC1 M				11.0	23.0	22.8	6.85	6.87		93.6	94.0		30.7	30.8	9.31	9.12		22	21		
FC1 B				21.0	23.2	22.6	6.77	6.79	6.78	93.1	91.7	92.4	30.6	30.8	8.29	9.02		18	17		
FC2 S	16:10	Small wave	18.0	1.0	22.9	23.3	6.84	6.89	6.80	93.7	94.2	93.1	30.8	30.6	10.80	10.00	11.37	20	21	22.3	
FC2 M				9.0	22.9	22.9	6.72	6.74		92.1	92.3		30.8	30.7	11.70	11.00		22	23		
FC2 B				17.0	22.6	22.7	6.60	6.65	6.63	87.4	88.5	88.0	30.5	30.8	12.00	12.70		25	23		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:
- Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok
- Turbidity Meter: EM 2365 | Calibration Check: 4.52, 45.5, 457 NTU
- Salinity Meter: EM 3694 | Calibration Check: 58.6 mS
- Thermometer: ET 961

Sampled By:
Checked By:
Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling : 17/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 23 | Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	12:55	Big wave	18.0	1.0	21.6	21.6	8.11	8.06	7.84	94.3	94.7	92.4	30.9	30.9	14.70	13.80	14.88	16	15	17.7	
FM1 M				9.0	21.7	21.7	7.59	7.61		90.3	90.1		30.9	30.9	15.70	16.10		21	19		
FM1 B				17.0	21.5	21.5	7.34	7.40	7.37	89.4	88.2	88.8	31.2	31.2	14.00	15.00		18	17		
FM2 S	12:45	Big wave	18.0	1.0	21.7	21.7	7.27	7.36	7.27	89.7	88.1	88.7	30.8	30.8	13.00	14.00	16.07	19	10	16.8	
FM2 M				9.0	20.6	20.6	7.16	7.28		88.6	88.4		30.9	30.9	13.00	13.50		13	12		
FM2 B				17.0	20.7	20.7	7.05	7.00	7.03	86.2	86.5	86.4	31.0	31.0	22.00	20.90		23	24		
FC1 S	13:10	Big wave	24.0	1.0	21.7	21.7	6.91	6.83	7.04	84.1	83.2	86.5	30.9	30.9	14.70	15.30	15.85	13	13	17.5	
FC1 M				12.0	21.6	21.6	7.16	7.27		88.9	89.9		31.0	31.0	16.50	16.70		16	18		
FC1 B				23.0	21.5	21.5	7.30	7.42	7.36	89.1	88.7	88.9	31.0	31.0	15.50	16.40		23	22		
FC2 S	12:30	Big wave	18.0	1.0	21.6	21.6	6.98	6.97	6.72	84.3	83.7	82.1	30.9	30.9	11.20	12.00	13.88	12	10	15.2	
FC2 M				9.0	21.4	21.4	6.45	6.47		80.3	80.2		31.0	31.0	12.60	13.40		16	15		
FC2 B				17.0	21.4	21.4	6.10	6.32	6.21	75.7	75.6	75.7	31.0	31.0	16.70	17.40		20	18		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used: Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L ok 100% ok | Sampled By:

Turbidity Meter: EM 2365 | Calibration Check: 4.52, 45.4, 456 NTU | Checked By:

Salinity Meter: EM 3694 | Calibration Check: 58.7 mS | Date:

Thermometer: ET 961

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 17/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 19 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	07:15	Big wave	17.0	1.0	20.5	20.5	8.61	8.51	7.94	106.5	106.7	98.6	30.6	30.6	15.80	16.10	15.47	16	16	15.3	
FM1 M				8.5	20.6	20.6	7.27	7.36		89.7	91.6		30.9	30.9	16.40	16.40		16	15		
FM1 B				16.0	20.6	20.6	7.16	7.02	7.09	88.8	87.1	88.0	31.2	31.2	14.60	13.50		13	14		
FM2 S	07:25	Big wave	17.0	1.0	20.4	20.4	6.98	7.05	6.35	84.8	95.6	82.1	30.7	30.7	12.60	12.20	14.45	12	14	15.3	
FM2 M				8.5	20.5	20.5	5.62	5.76		74.2	73.7		30.8	30.8	12.40	11.80		14	16		
FM2 B				16.0	20.8	20.8	5.11	5.06	5.09	71.7	70.8	71.3	31.0	31.0	19.90	17.90		18	19		
FC1 S	07:00	Big wave	23.0	1.0	20.7	20.7	7.94	7.81	7.60	95.4	96.7	92.3	30.9	30.9	16.30	17.00	16.15	15	15	14.0	
FC1 M				11.5	20.6	20.6	7.26	7.37		88.0	89.1		30.9	30.9	16.10	16.50		14	14		
FC1 B				22.0	20.4	20.4	7.00	7.09	7.05	84.9	85.1	85.0	31.0	31.0	16.10	14.90		12	14		
FC2 S	07:40	Big wave	17.0	1.0	20.6	206.0	6.99	6.96	6.33	84.9	84.7	80.1	30.8	30.8	13.70	12.80	14.58	12	13	16.2	
FC2 M				8.5	20.3	20.3	5.62	5.74		75.2	75.4		30.9	30.9	13.20	13.30		12	14		
FC2 B				16.0	20.3	20.3	5.36	5.31	5.34	72.7	73.6	73.2	30.9	30.9	17.10	17.40		22	24		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used: Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok | Sampled By:

Turbidity Meter: EM 2365 | Calibration Check: 4.57, 45.0, 443 NTU | Checked By:

Salinity Meter: EM 3694 | Calibration Check: 58.7 mS | Date:

Thermometer: ET 961

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 — Client: Penta-Ocean Construction Co., Ltd. — Job No.: 4494.1

Date of Sampling: 20/12/2004 — Weather Condition: Sunny — Ambient Temperature,°C: 21 — Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	15:15	Small wave	18.0	1.0	22.5	22.5	7.26	7.36	6.76	88.6	87.7	82.6	31.6	31.6	2.27	2.20	5.16	6	7	9.0	
FM1 M				9.0	21.6	21.6	6.14	6.26		76.4	77.8		31.7	31.7	4.67	4.65		8	9		
FM1 B				17.0	21.5	21.5	7.00	7.10	7.05	86.8	84.3	85.1	31.9	31.9	8.58	8.57		12	12		
FM2 S	15:05	Small wave	18.0	1.0	22.4	22.4	5.96	6.11	6.55	75.2	74.2	80.3	30.9	30.9	4.87	4.86	5.77	7	7	9.3	
FM2 M				9.0	21.7	21.7	7.02	7.09		86.4	85.4		31.4	31.4	5.87	5.76		8	9		
FM2 B				17.0	21.5	21.5	7.14	6.98	7.06	87.5	87.1	87.3	31.4	31.4	6.72	6.54		13	12		
FC1 S	15:30	Small wave	23.0	1.0	22.6	22.6	6.97	6.98	6.34	82.6	83.6	78.7	31.4	31.4	3.84	3.81	5.71	6	6	7.5	
FC1 M				11.5	21.6	21.6	5.76	5.65		73.6	74.8		31.5	31.5	7.19	7.21		8	7		
FC1 B				22.0	21.8	21.8	5.45	5.36	5.41	72.1	71.6	71.9	31.4	31.4	6.10	6.13		10	8		
FC2 S	14:55	Small wave	18.0	1.0	22.4	22.4	6.98	6.76	6.29	84.2	83.7	79.1	31.4	31.4	3.74	3.74	5.02	7	7	8.2	
FC2 M				9.0	21.7	21.7	5.77	5.65		74.1	74.3		31.5	31.5	5.12	5.16		7	7		
FC2 B				17.0	21.7	21.7	5.16	5.20	5.18	53.7	54.2	54.0	31.6	31.6	6.19	6.18		11	10		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:

Dissolved Oxygen Meter:	EM	961	Calibration Check: 0mg/L: ok 100%: ok
Turbidity Meter:	EM	2365	Calibration Check: 4.48, 45.1, 447 NTU
Salinity Meter:	EM	3694	Calibration Check: 58.8 mS
Thermometer:	ET	961	

Sampled By:
Checked By:
Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 20/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 19 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C a	Temperature, °C b	Dissolved Oxygen, mg/L a	Dissolved Oxygen, mg/L b	Dissolved Oxygen, mg/L Average	Dissolved Oxygen, % a	Dissolved Oxygen, % b	Dissolved Oxygen, % Average	Salinity, ppt a	Salinity, ppt b	Turbidity, NTU a	Turbidity, NTU b	Turbidity, NTU Average	Suspended Solids, mg/L		Suspended Solids, mg/L Depth Average	Remarks
FM1 S	07:55	Small wave	17.0	1.0	21.6	21.7	8.12	8.06	7.35	96.4	95.8	88.6	30.9	30.9	6.51	6.49	7.06	10	10	8.5	
FM1 M				8.5	21.7	21.7	6.58	6.62		80.9	81.4		30.9	30.9	7.74	7.76		6	6		
FM1 B				16.0	21.5	21.5	7.36	7.42	7.39	89.7	88.1	88.9	31.2	31.2	6.91	6.93		9	10		
FM2 S	07:45	Small wave	17.0	1.0	22.0	22.0	8.09	7.95	7.36	94.3	94.7	88.9	30.9	30.9	6.61	6.64	6.90	8	9	9.3	
FM2 M				8.5	21.6	21.6	6.79	6.61		82.6	84.1		31.0	31.0	6.81	6.85		10	8		
FM2 B				16.0	21.5	21.5	7.01	6.87	6.94	85.7	86.2	86.0	31.1	31.1	7.23	7.27		11	10		
FC1 S	08:05	Small wave	22.0	1.0	21.7	21.7	7.95	7.81	7.49	93.7	94.1	89.1	30.7	30.7	7.05	7.09	7.24	9	10	9.8	
FC1 M				11.0	21.4	21.4	7.04	7.16		84.2	84.3		30.9	30.9	7.21	7.21		9	10		
FC1 B				21.0	21.4	21.4	6.01	6.05	6.03	75.4	73.9	74.7	31.0	31.0	7.44	7.46		10	11		
FC2 S	07:30	Small wave	17.0	1.0	21.6	21.6	7.42	7.39	7.20	89.9	90.6	87.2	30.8	30.8	5.86	5.88	6.05	11	11	9.3	
FC2 M				8.5	21.3	21.3	7.00	6.97		84.3	84.1		30.9	30.9	5.87	5.80		8	8		
FC2 B				16.0	21.5	21.5	5.42	5.36	5.39	73.6	73.5	73.6	31.1	31.1	6.45	6.42		8	10		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:				Calibration Check:				
Dissolved Oxygen Meter:	EM	961		0mg/L:	ok	100%:	ok	
Turbidity Meter:	EM	2365		4.57,	45.1,	452	NTU	
Salinity Meter:	EM	3694		58.8	mS			
Thermometer:	ET	961						

Sampled By: _____
Checked By: _____
Date: _____

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4894.1

Date of Sampling: 22/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 20 | Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	16:25	Big wave	18.0	1.0	24.0	24.0	7.26	7.34	7.77	87.6	85.4	93.3	30.7	30.7	3.69	3.51	2.95	5	5	5.5	
FM1 M				9.0	23.9	23.9	8.21	8.26		99.6	100.4		30.9	30.9	2.75	2.77		6	6		
FM1 B				1.0	24.2	24.2	7.30	7.06	7.18	90.4	89.8	90.1	30.9	30.9	2.52	2.43		6	5		
FM2 S	16:15	Big wave	18.0	1.0	24.3	24.3	6.99	7.26	6.80	83.4	84.5	82.4	30.7	30.7	2.96	2.90	3.07	6	7	6.2	
FM2 M				9.0	24.5	24.5	6.54	6.42		80.2	81.6		30.8	30.8	2.37	2.21		6	5		
FM2 B				17.0	24.6	24.6	5.01	5.26	5.14	70.2	71.6	70.9	30.9	30.9	3.84	4.14		6	7		
FC1 S	16:40	Big wave	23.0	1.0	24.1	24.1	8.63	8.41	8.25	101.4	101.7	99.8	30.7	30.7	2.65	2.73	2.50	5	5	5.5	
FC1 M				11.5	24.3	24.3	8.06	7.90		98.6	97.5		30.9	30.9	2.64	2.80		6	6		
FC1 B				22.0	24.4	24.4	7.11	7.26	7.19	86.2	84.3	85.3	30.8	30.8	2.08	2.12		5	6		
FC2 S	16:00	Big wave	18.0	1.0	24.0	24.0	8.01	8.20	7.74	98.2	97.6	93.5	30.8	30.8	2.52	2.67	2.69	6	6	5.7	
FC2 M				9.0	24.4	24.5	7.41	7.33		88.6	89.6		30.8	30.8	2.90	2.83		6	6		
FC2 B				17.0	24.6	24.6	6.34	6.14	6.24	77.7	76.2	77.0	30.8	30.8	2.56	2.64		5	5		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:
- Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok
- Turbidity Meter: EM 2365 | Calibration Check: 4.58, 45.3, 452 NTU
- Salinity Meter: EM 3694 | Calibration Check: 58.9 mS
- Thermometer: ET 961

Sampled By: _____
Checked By: _____
Date: _____

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 22/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 20 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C a	Temperature, °C b	Dissolved Oxygen, mg/L a	Dissolved Oxygen, mg/L b	Dissolved Oxygen, mg/L Average	Dissolved Oxygen, % a	Dissolved Oxygen, % b	Dissolved Oxygen, % Average	Salinity, ppt a	Salinity, ppt b	Turbidity, NTU a	Turbidity, NTU b	Turbidity, NTU Average	Suspended Solids, mg/L		Suspended Solids, mg/L Depth Average	Remarks
FM1 S	10:10	Big wave	17.0	1.0	20.5	20.5	6.98	7.02	7.15	84.7	83.6	86.5	30.6	30.6	2.39	2.42	2.29	6	6	5.7	
FM1 M				8.5	20.6	20.6	7.25	7.36		88.9	88.7		30.7	30.7	2.37	2.34		6	5		
FM1 B				16.0	20.7	20.7	7.26	7.11	7.19	90.2	90.4	90.3	30.7	30.7	1.99	2.21		6	6		
FM2 S	10:20	Big wave	17.0	1.0	20.2	20.2	7.25	7.41	7.15	90.2	90.2	86.5	30.6	30.6	3.02	2.98	2.76	6	6	6.0	
FM2 M				8.5	20.7	20.7	6.98	6.95		83.2	82.4		30.7	30.7	2.60	2.55		5	6		
FM2 B				16.0	20.7	20.7	7.04	7.16	7.10	85.6	84.7	85.2	30.7	30.7	2.68	2.74		7	6		
FC1 S	09:55	Big wave	22.0	1.0	20.4	20.4	7.19	7.21	7.05	84.3	83.4	83.0	30.8	30.8	2.79	2.66	2.59	7	6	5.7	
FC1 M				11.0	20.4	20.4	6.95	6.86		81.7	82.6		30.8	30.8	2.69	2.74		4	5		
FC1 B				21.0	20.7	20.7	6.75	6.76	6.76	81.4	79.6	80.5	30.8	30.8	2.28	2.40		6	6		
FC2 S	10:35	Big wave	17.0	1.0	20.3	20.3	7.21	7.36	6.63	88.4	87.7	82.7	30.6	30.6	3.11	3.06	2.66	6	6	5.8	
FC2 M				8.5	20.7	20.7	5.96	5.97		76.9	77.7		30.6	30.6	2.44	2.51		7	6		
FC2 B				16.0	20.7	20.7	5.82	5.76	5.79	75.6	76.3	76.0	30.7	30.7	2.37	2.44		6	6		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:
- Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok | Sampled By:
- Turbidity Meter: EM 2365 | Calibration Check: 4.52, 45.0, 455 NTU | Checked By:
- Salinity Meter: EM 3684 | Calibration Check: 58.9 mS | Date:
- Thermometer: ET 961

Project:	Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38									Client:	Penta-Ocean Construction Co., Ltd.		Job No.:	4494.1							
Date of Sampling:	24/12/2004			Weather Condition:		Sunny				Ambient Temperature,°C:	20			Tide State:	Mid-Flood						
Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	17:05	Small wave	18.0	1.0	22.3	22.1	6.60	6.60	6.48	86.9	86.7	86.1	32.1	32.1	3.33	3.32	4.06	11	12	12.8	
FM1 M				9.0	22.1	22.0	6.34	6.37		85.2	85.4		32.3	32.3	4.03	4.00		13	14		
FM1 B				17.0	21.8	21.9	6.48	6.49	6.49	82.5	82.7	82.6	32.2	32.2	4.82	4.85		13	14		
FM2 S	16:55	Small wave	18.0	1.0	22.2	22.1	6.65	6.72	6.60	88.0	88.8	86.0	32.2	32.2	3.49	3.47	3.86	16	17	14.7	
FM2 M				9.0	22.0	22.2	6.52	6.52		83.6	83.6		32.2	32.2	3.66	3.69		15	14		
FM2 B				17.0	22.3	22.1	6.38	6.43	6.41	85.7	86.0	85.9	32.1	32.1	4.40	4.43		14	12		
FC1 S	17:20	Small wave	22.0	1.0	22.5	22.3	6.50	6.58	6.43	83.4	84.2	83.6	32.0	32.0	4.24	4.26	3.85	12	14	12.5	
FC1 M				11.0	22.0	22.2	6.32	6.33		83.2	83.4		32.4	32.4	3.41	3.48		13	13		
FC1 B				21.0	22.3	22.2	6.28	6.28	6.28	82.3	82.4	82.4	32.2	32.2	3.83	3.86		11	12		
FC2 S	16:45	Small wave	18.0	1.0	22.1	22.3	6.41	6.45	6.41	86.5	87.0	86.1	32.1	32.1	3.99	3.91	3.78	11	9	12.5	
FC2 M				9.0	22.3	22.1	6.39	6.39		85.4	85.3		32.3	32.3	3.47	3.42		11	13		
FC2 B				17.0	22.0	22.1	6.28	6.38	6.33	84.1	85.2	84.7	32.2	32.2	3.96	3.94		15	16		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used:	Dissolved Oxygen Meter:	EM	961	Calibration Check:	Omg/L:	ok	100%:	ok	Sampled By:	
	Turbidity Meter:	EM	2365	Calibration Check:	4.55,	45.7,	446	NTU	Checked By:	
	Salinity Meter:	EM	3684	Calibration Check:	58.7	mS			Date:	
	Thermometer:	ET	961							

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 24/12/2004 | Weather Condition: Sunny | Ambient Temperature,°C: 21 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	11:45	Small wave	18.0	1.0	22.4	22.4	6.84	6.80	6.73	92.3	92.0	89.9	30.9	30.9	3.59	3.57	3.68	17	15	11.8	
FM1 M				9.0	22.0	22.0	6.60	6.66		87.4	87.9		30.7	30.7	4.05	4.03		11	10		
FM1 B				17.0	21.7	21.8	6.79	6.82	6.81	91.5	92.3	91.9	30.8	30.9	3.40	3.42		9	9		
FM2 S	11:55	Small wave	18.0	1.0	22.3	22.4	6.75	6.81	6.82	91.0	92.2	92.1	31.1	31.1	3.65	3.65	4.22	12	11	10.5	
FM2 M				9.0	22.1	22.2	6.81	6.89		92.1	93.2		30.9	31.0	3.31	3.38		11	11		
FM2 B				17.0	21.8	21.9	6.93	6.94	6.94	96.9	97.2	97.1	31.0	30.9	5.68	5.66		9	9		
FC1 S	11:35	Small wave	23.0	1.0	22.4	22.3	6.88	6.87	6.82	93.5	93.3	92.4	31.2	31.2	3.14	3.17	3.57	10	10	11.0	
FC1 M				11.5	22.3	22.2	6.76	6.78		91.2	91.4		30.9	30.9	3.43	3.41		11	12		
FC1 B				22.0	22.1	22.2	6.69	6.65	6.67	88.9	88.5	88.7	31.1	30.7	4.11	4.14		12	11		
FC2 S	12:10	Small wave	18.0	1.0	22.1	22.2	6.80	6.84	6.77	92.0	92.5	91.3	30.9	30.8	3.69	3.60	3.66	11	10	12.7	
FC2 M				9.0	22.4	22.3	6.72	6.73		90.3	90.4		30.7	30.8	3.49	3.42		14	15		
FC2 B				17.0	22.0	22.0	6.67	6.69	6.68	89.1	89.3	89.2	31.0	31.1	3.88	3.84		13	13		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used:

Dissolved Oxygen Meter:	EM 961	Calibration Check:	0mg/L: ok 100%: ok
Turbidity Meter:	EM 2365	Calibration Check:	4.62, 46.1, 458 NTU
Salinity Meter:	EM 3694	Calibration Check:	58.7 mS
Thermometer:	ET 961		

Sampled By:

Checked By:

Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co. Ltd. | Job No.: 4494.1

Date of Sampling: 27/12/2004 | Weather Condition: Cloudy | Ambient Temperature,°C: 17 | Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	08:55	Small wave	19.0	1.0	20.2	20.2	6.84	6.80	6.77	90.9	91.1	89.5	32.1	32.1	2.34	2.36	2.04	13	13	12.3	
FM1 M				9.5	20.0	20.0	6.72	6.70		88.1	87.8		31.9	31.9	1.90	1.92		11	12		
FM1 B				18.0	19.8	19.9	6.69	6.65	6.67	87.5	87.1	87.3	32.0	32.0	1.84	1.85		12	13		
FM2 S	08:45	Small wave	18.0	1.0	20.1	20.1	6.75	6.70	6.68	88.4	88.0	87.2	32.2	32.2	4.48	4.46	4.77	13	13	12.3	
FM2 M				9.0	19.9	19.9	6.64	6.62		86.3	86.2		32.1	32.1	4.60	4.63		12	12		
FM2 B				17.0	20.0	20.0	6.58	6.54	6.56	85.4	85.3	85.4	32.0	32.0	5.16	5.27		12	12		
FC1 S	09:10	Small wave	23.0	1.0	19.9	19.9	6.70	6.67	6.62	87.8	87.6	86.5	32.2	32.2	1.58	1.42	1.70	12	10	9.8	
FC1 M				11.5	20.2	20.2	6.54	6.58		85.2	85.4		32.2	32.2	1.56	1.59		10	10		
FC1 B				22.0	20.1	20.1	6.60	6.66	6.63	86.6	86.9	86.8	32.2	32.2	2.13	1.94		8	9		
FC2 S	08:35	Small wave	18.0	1.0	20.3	20.3	6.65	6.60	6.51	86.9	86.5	85.7	32.1	32.1	3.39	3.47	4.05	16	15	12.8	
FC2 M				9.0	20.1	20.1	6.42	6.38		84.7	84.7		32.3	32.3	4.94	5.01		11	10		
FC2 B				17.0	19.8	19.9	6.38	6.32	6.35	84.0	83.6	83.8	32.0	32.1	3.72	3.78		12	13		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:
- Dissolved Oxygen Meter: EM 961 | Calibration Check: Omg/L: ok 100%: ok
- Turbidity Meter: EM 2365 | Calibration Check: 4.51, 44.7, 448 NTU
- Salinity Meter: EM 3694 | Calibration Check: 58.6 mS
- Thermometer: ET 961

Sampled By:
Checked By:
Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 27/12/2004 | Weather Condition: Cloudy | Ambient Temperature,°C: 18 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	13:30	Small wave	17.0	1.0	21.1	21.1	6.74	6.71	6.68	88.3	88.0	87.6	32.1	32.1	2.68	2.64	2.94	16	15	11.2	
FM1 M				8.5	20.9	20.9	6.65	6.63		87.1	86.9		31.9	31.9	2.39	2.38		10	9		
FM1 B				16.0	20.7	20.7	6.58	6.52	6.55	86.2	86.7	86.5	32.0	32.1	3.76	3.77		9	8		
FM2 S	13:40	Small wave	17.0	1.0	20.9	20.9	6.68	6.60	6.56	87.3	88.4	87.3	32.2	32.2	3.91	3.96	3.54	11	12	10.5	
FM2 M				8.5	20.8	20.8	6.54	6.43		86.2	87.2		31.9	31.9	3.06	3.01		10	10		
FM2 B				16.0	20.6	20.7	6.42	6.48	6.45	85.9	87.1	86.5	32.1	32.1	3.67	3.60		10	10		
FC1 S	13:15	Small wave	22.0	1.0	21.1	21.1	6.58	6.57	6.50	86.4	86.3	86.2	32.0	32.0	3.75	3.96	3.79	8	9	10.0	
FC1 M				11.0	21.0	21.0	6.41	6.46		85.8	86.1		32.0	32.0	3.65	3.77		9	9		
FC1 B				21.0	20.9	20.9	6.37	6.22	6.30	85.6	85.2	85.4	32.2	32.1	3.89	3.72		12	13		
FC2 S	13:50	Small wave	17.0	1.0	21.0	21.0	6.69	6.60	6.56	87.5	87.2	86.9	32.1	32.1	2.97	2.93	3.33	13	12	13.0	
FC2 M				8.5	20.9	20.9	6.53	6.43		86.0	86.9		32.3	32.3	3.44	3.48		15	14		
FC2 B				16.0	20.8	20.9	6.46	6.49	6.48	85.7	85.6	85.7	32.0	32.0	3.51	3.62		12	12		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:
- Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok
- Turbidity Meter: EM 2365 | Calibration Check: 4.45, 45.1, 449 NTU
- Salinity Meter: EM 3694 | Calibration Check: 58.8 mS
- Thermometer: ET 961

Sampled By:
Checked By:
Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4894.1

Date of Sampling: 29/12/2004 | Weather Condition: Cloudy | Ambient Temperature,°C: 19 | Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	10:00	Small wave	19.0	1.0	21.0	21.0	6.42	6.39	6.39	87.4	87.2	88.2	32.2	32.2	5.86	5.87	6.43	11	12	13.2	
FM1 M				9.5	20.8	20.8	6.37	6.38		89.2	89.0		32.4	32.4	6.39	6.34		14	15		
FM1 B				18.0	20.6	20.6	6.29	6.19	6.24	86.0	86.4	86.2	32.3	32.3	7.08	7.01		13	14		
FM2 S	09:50	Small wave	19.0	1.0	21.2	2.2	6.73	6.64	6.58	87.8	88.0	86.6	32.2	32.2	5.11	5.12	6.28	13	13	13.3	
FM2 M				9.5	20.9	20.9	6.52	6.41		86.0	85.4		32.1	32.1	5.95	5.96		13	14		
FM2 B				18.0	21.0	21.0	6.65	6.57	6.61	88.5	88.3	88.4	32.0	32.0	7.84	7.72		14	13		
FC1 S	10:15	Small wave	24.0	1.0	22.0	22.0	6.63	6.62	6.65	84.6	85.0	84.6	32.1	32.1	5.68	5.60	6.50	12	12	14.0	
FC1 M				12.0	21.6	21.7	6.66	6.67		84.3	84.5		32.2	32.2	6.20	6.28		14	15		
FC1 B				23.0	21.2	21.2	6.56	6.51	6.54	81.8	82.1	82.0	32.2	32.2	7.60	7.63		15	16		
FC2 S	09:40	Small wave	18.0	1.0	21.4	21.4	6.60	6.62	6.49	87.2	87.5	86.1	32.1	32.1	4.89	4.95	5.67	12	12	12.3	
FC2 M				9.0	21.3	21.3	6.35	6.39		84.7	84.9		32.2	32.2	4.72	4.79		13	14		
FC2 B				17.0	21.0	21.0	6.21	6.28	6.25	82.2	82.3	82.3	32.0	32.0	7.25	7.40		11	12		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:
- Dissolved Oxygen Meter: EM 6167 | Calibration Check: 0mg/L: ok 100%: ok
- Turbidity Meter: EM 2365 | Calibration Check: 4.62, 46.3, 466 NTU
- Salinity Meter: EM 6167 | Calibration Check: 58.9 mS
- Thermometer: ET 6167

Sampled By:
Checked By:
Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No.: 4494.1

Date of Sampling: 29/12/2004 | Weather Condition: Cloudy | Ambient Temperature,°C: 14 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C a	Temperature, °C b	Dissolved Oxygen, mg/L a	Dissolved Oxygen, mg/L b	Dissolved Oxygen, mg/L Average	Dissolved Oxygen, % a	Dissolved Oxygen, % b	Dissolved Oxygen, % Average	Salinity, ppt a	Salinity, ppt b	Turbidity, NTU a	Turbidity, NTU b	Turbidity, NTU Average	Suspended Solids, mg/L		Suspended Solids, mg/L Depth Average	Remarks
FM1 S	15:05	Small wave	17.0	1.0	19.5	19.5	6.60	6.62	6.50	86.9	87.1	86.0	32.0	32.0	3.04	3.05	3.24	9	10	10.8	
FM1 M				8.5	19.6	19.6	6.38	6.38		85.2	84.7		32.1	32.1	3.21	3.33		11	10		
FM1 B				16.0	19.6	19.6	6.26	6.27	6.27	82.5	82.1	82.3	32.2	32.2	3.36	3.47		12	13		
FM2 S	15:15	Small wave	17.0	1.0	19.4	19.4	6.61	6.62	6.64	88.0	87.4	88.7	32.0	32.0	4.67	4.78	3.56	15	16	10.8	
FM2 M				8.5	19.5	19.5	6.66	6.67		90.3	89.2		32.0	32.0	2.12	2.19		7	8		
FM2 B				16.0	19.7	19.7	6.56	6.51	6.54	85.9	86.0	86.0	32.2	32.2	3.80	3.81		10	9		
FC1 S	14:50	Small wave	22.0	1.0	20.2	20.2	6.71	6.64	6.57	87.8	86.4	86.8	32.2	32.2	4.21	4.22	3.68	12	11	9.7	
FC1 M				11.0	20.1	20.1	6.52	6.41		86.0	87.1		32.2	32.2	3.18	3.36		8	9		
FC1 B				21.0	20.0	20.0	6.60	6.57	6.59	88.4	87.9	88.2	32.2	32.2	3.49	3.64		9	9		
FC2 S	15:25	Small wave	17.0	1.0	19.5	19.5	6.41	6.40	6.40	84.7	84.5	84.5	32.3	32.3	3.20	3.28	4.07	9	10	12.2	
FC2 M				8.5	19.6	19.6	6.39	6.39		84.5	84.2		32.3	32.3	4.30	4.34		15	15		
FC2 B				16.0	19.7	19.7	6.28	6.19	6.24	81.5	81.7	81.6	32.4	32.4	4.67	4.60		13	11		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:

Dissolved Oxygen Meter:	EM 6167	Calibration Check:	Omg/L: ok 100%: ok
Turbidity Meter:	EM 2365	Calibration Check:	4.60, 46.2, 463 NTU
Salinity Meter:	EM 6167	Calibration Check:	58.9 mS
Thermometer:	ET 6167		

Sampled By:
Checked By:
Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 — Client: Penta-Ocean Construction Co., Ltd. — Job No.: 4494.1

Date of Sampling: 31/12/2004 — Weather Condition: Cloudy — Ambient Temperature,°C: 10 — Tide State: Mid-Flood

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	11:05	Small wave	18.0	1.0	17.1	17.1	6.99	6.94	6.90	99.1	98.2	95.4	32.2	32.2	11.40	11.20	11.30	18	18	16.8	
FM1 M				9.0	16.7	16.7	6.84	6.82		92.3	92.0		32.1	32.1	10.40	10.80		14	14		
FM1 B				17.0	16.5	16.6	6.78	6.75	6.77	90.1	89.9	90.0	32.0	32.0	12.00	12.00		20	17		
FM2 S	10:55	Small wave	17.0	1.0	17.0	17.0	6.89	6.85	6.81	93.5	93.1	91.7	32.1	32.1	11.70	11.90	11.37	18	17	17.0	
FM2 M				8.5	16.8	16.8	6.74	6.74		90.0	90.0		32.1	32.1	11.60	11.00		17	17		
FM2 B				16.0	16.7	16.7	6.65	6.60	6.63	88.4	88.0	88.2	32.2	32.1	11.20	10.80		16	17		
FC1 S	11:20	Small wave	23.0	1.0	16.8	16.8	6.80	6.91	6.81	91.5	93.8	91.9	32.3	32.3	9.44	9.86	9.05	12	13	14.0	
FC1 M				11.5	17.0	17.0	6.79	6.72		91.3	90.9		31.9	32.0	8.54	8.12		13	15		
FC1 B				22.0	16.6	16.7	6.70	6.64	6.67	89.4	89.0	89.2	32.0	32.1	9.22	9.14		15	16		
FC2 S	10:45	Small wave	17.0	1.0	17.0	17.1	6.84	6.87	6.79	91.8	91.5	90.8	32.1	32.1	10.90	10.70	11.08	14	15	16.0	
FC2 M				8.5	16.6	16.6	6.71	6.74		89.7	90.0		32.2	32.2	11.10	10.70		15	16		
FC2 B				16.0	16.9	16.9	6.62	6.58	6.60	88.0	87.6	87.8	32.0	32.0	12.10	11.90		17	19		

Bold data with single underline indicates an exceedance to Action Level
Italic data with double underline indicates an exceedance to Limit Level

Equipment used:
- Dissolved Oxygen Meter: EM 961 — Calibration Check: 0mg/L: ok 100%: ok
- Turbidity Meter: EM 2365 — Calibration Check: 4.55, 45.2, 460 NTU
- Salinity Meter: EM 3694 — Calibration Check: 58.8 mS
- Thermometer: ET 961

Sampled By:
Checked By:
Date:

Project: Contract No. CV/2002/13 Fill Bank At Tuen Mun Area 38 | Client: Penta-Ocean Construction Co., Ltd. | Job No: 4494.1

Date of Sampling: 31/12/2004 | Weather Condition: Cloudy | Ambient Temperature,°C: 11 | Tide State: Mid-Ebb

Station	Time	Sea Condition	Overall Depth, m	Sampling Depth,m	Temperature, °C		Dissolved Oxygen, mg/L			Dissolved Oxygen, %			Salinity, ppt		Turbidity, NTU			Suspended Solids, mg/L			Remarks
					a	b	a	b	Average	a	b	Average	a	b	a	b	Average			Depth Average	
FM1 S	15:55	Small wave	17.0	1.0	17.5	17.5	6.87	6.61	6.75	91.5	87.9	89.8	32.1	32.0	4.74	4.65	4.63	9	8	7.8	
FM1 M				8.5	17.1	17.1	6.74	6.76		90.0	89.7		32.2	32.2	4.35	4.21		8	7		
FM1 B				16.0	16.8	16.9	6.86	6.84	6.85	87.7	91.8	89.8	32.0	32.1	4.93	4.91		9	6		
FM2 S	16:05	Small wave	18.0	1.0	17.4	17.4	6.65	6.76	6.74	89.1	89.5	90.2	32.1	32.0	5.07	5.18	5.12	8	8	7.7	
FM2 M				9.0	17.0	17.0	6.76	6.80		90.9	91.3		32.0	31.9	4.79	4.85		8	7		
FM2 B				17.0	16.9	16.9	6.92	6.80	6.86	93.8	91.5	92.7	32.3	32.3	5.36	5.47		8	7		
FC1 S	15:40	Small wave	22.0	1.0	17.3	17.3	6.86	6.92	6.82	93.2	93.3	91.7	32.1	32.2	4.81	4.90	5.06	7	7	8.5	
FC1 M				11.0	17.2	17.2	6.70	6.78		90.0	90.4		32.2	32.1	4.66	4.58		9	9		
FC1 B				21.0	17.4	17.4	6.65	6.60	6.63	88.0	87.5	87.8	32.1	32.1	5.79	5.64		10	9		
FC2 S	16:15	Small wave	17.0	1.0	17.3	17.3	6.90	6.91	6.87	98.0	98.2	95.0	32.0	32.0	5.31	5.12	5.41	8	10	8.3	
FC2 M				8.5	17.0	17.0	6.81	6.85		91.8	92.1		32.1	32.1	5.34	5.48		7	9		
FC2 B				16.0	16.9	16.9	6.71	6.70	6.71	89.9	89.8	89.9	32.2	32.2	5.55	5.66		9	7		

Bold data with single underline indicates an exceedance to Action Level

Italic data with double underline indicates an exceedance to Limit Level

Equipment used:

Dissolved Oxygen Meter: EM 961 | Calibration Check: 0mg/L: ok 100%: ok

Turbidity Meter: EM 2365 | Calibration Check: 4.49, 45.1, 452 NTU

Salinity Meter: EM 3694 | Calibration Check: 58.8 mS

Thermometer: ET 961

Sampled By:

Checked By:

Date:

Appendix VII

Complaint Log

CONTRACT No. CV/2002/13 – FILL BANK AT TUEN MUN AREA 38 - ENVIRONMENTAL COMPLAINTS LOG.						
Complaint Log No.	Date of Receipt	Received From and Received By	Nature of Complaint	Date Investigated	Outcome	Date of Reply and to Whom
001	07.02.2004	From: Public By: Home Affairs Department	Cleanliness of public roads.	N/A	The situation was rectified.	N/A
002	29.06.2004	From: Public By: EPD	Dust generation in Fill Bank.	N/A	The situation was rectified.	N/A
003	31.07.2004	From: Public By: EPD	Dust generation at Lung Mun Road near Fill Bank.	07.08.2004	The situation was rectified.	N/A
004	13.08.2004	From: Public By: EPD	Dust emission within the site.	18.08.2004	The situation was rectified.	N/A
005	26.08.2004	From: Public By: EPD	Dust emission and debris leakage from dump trucks near Government Depot.	07.09.2004	Not site related.	N/A
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Appendix VIII

Cumulative Statistics on Complaints, Notifications of Summonses and Successful Prosecutions

CONTRACT No. CV/2002/13 – FILL BANK AT TUEN MUN AREA 38

Cumulative Statistics on Complaints

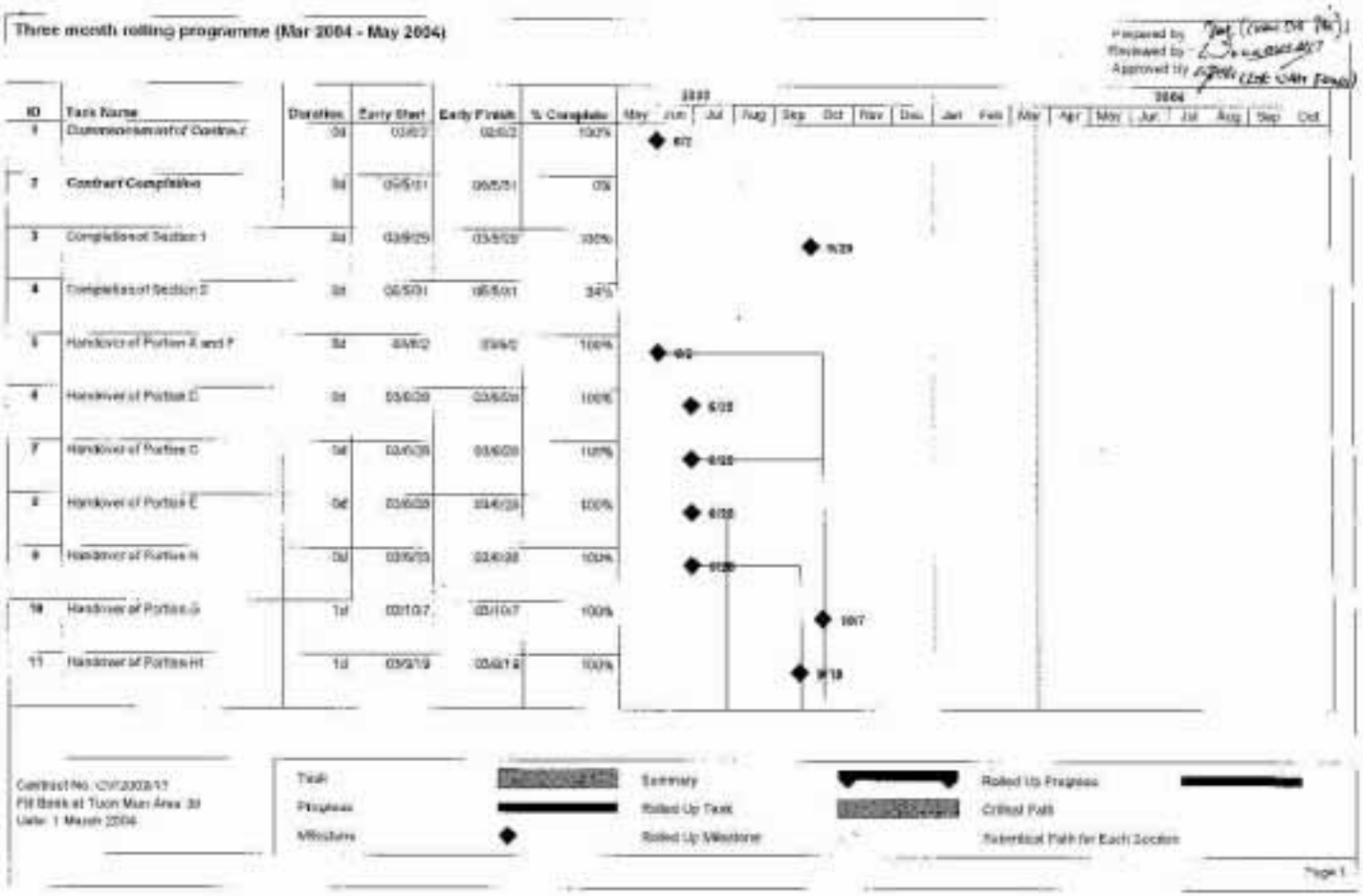
Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative Number to Date
Air	4	---	4
Noise	0	---	0
Water	0	---	0
Waste	1	---	1
Landscape & Visual	0	---	0
Total	0	---	5

Appendix IX

Master Construction Programme

Three month rolling programme (Mar 2004 - May 2004)

Prepared by
Reviewed by
Approved by



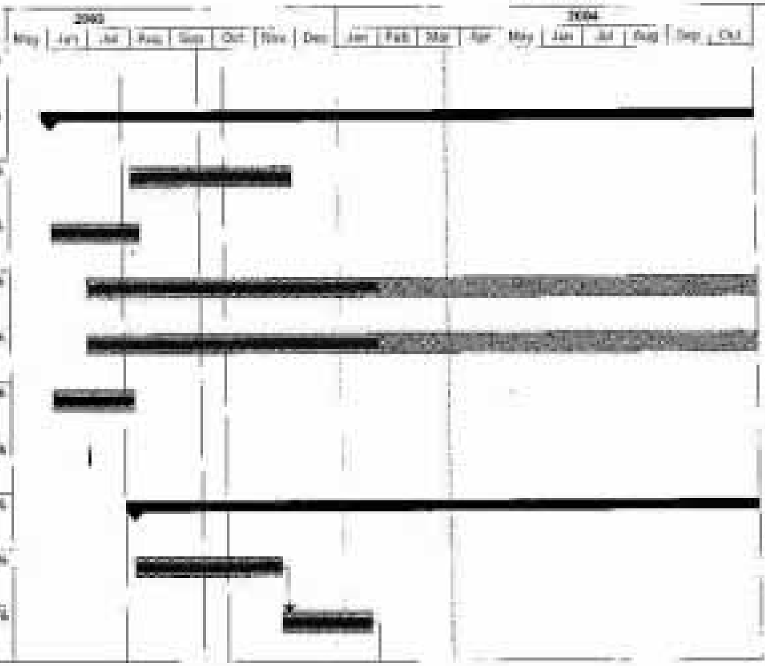
Contract No. CV/2003/17
Fill Bank at Tuen Mun Area 38
Date: 1 March 2004

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Critical Path
Subcritical Path for Each Section

Three month rolling programme (Mar 2004 - May 2004)

Prepared by:
Reviewed by:
Approved by:

ID	Task Name	Duration	Early Start	Early Finish	% Complete
17	Handover of Portion H	0d	05/1/31	05/1/31	0%
12	Preliminaries	813d	03/6/[illegible]	05/8/22	35%
14	Erection of project signboard	116d	03/7/31	03/11/25	100%
15	Provision of initial site office	60d	03/6/2	03/8/16	100%
16	Provision and maintenance of temporary access road	824d	03/6/28	05/9/22	34%
17	Provision, operation and maintenance of lighting facilities	824d	03/6/28	05/9/22	34%
18	Submission for approval of concrete design mix	60d	03/6/2	03/7/31	100%
19	Modification of reception facilities	1d	03/6/28	03/6/28	100%
20	Engineer's Site Office	752d	03/8/1	05/8/22	37%
21	Design submission	107d	03/8/1	03/11/16	100%
22	Erection	67d	03/11/16	04/1/21	100%



Contract No. CV/2002/13
Fill Bank at Tuen Mun Area 38
Date: 1 March 2004

Task
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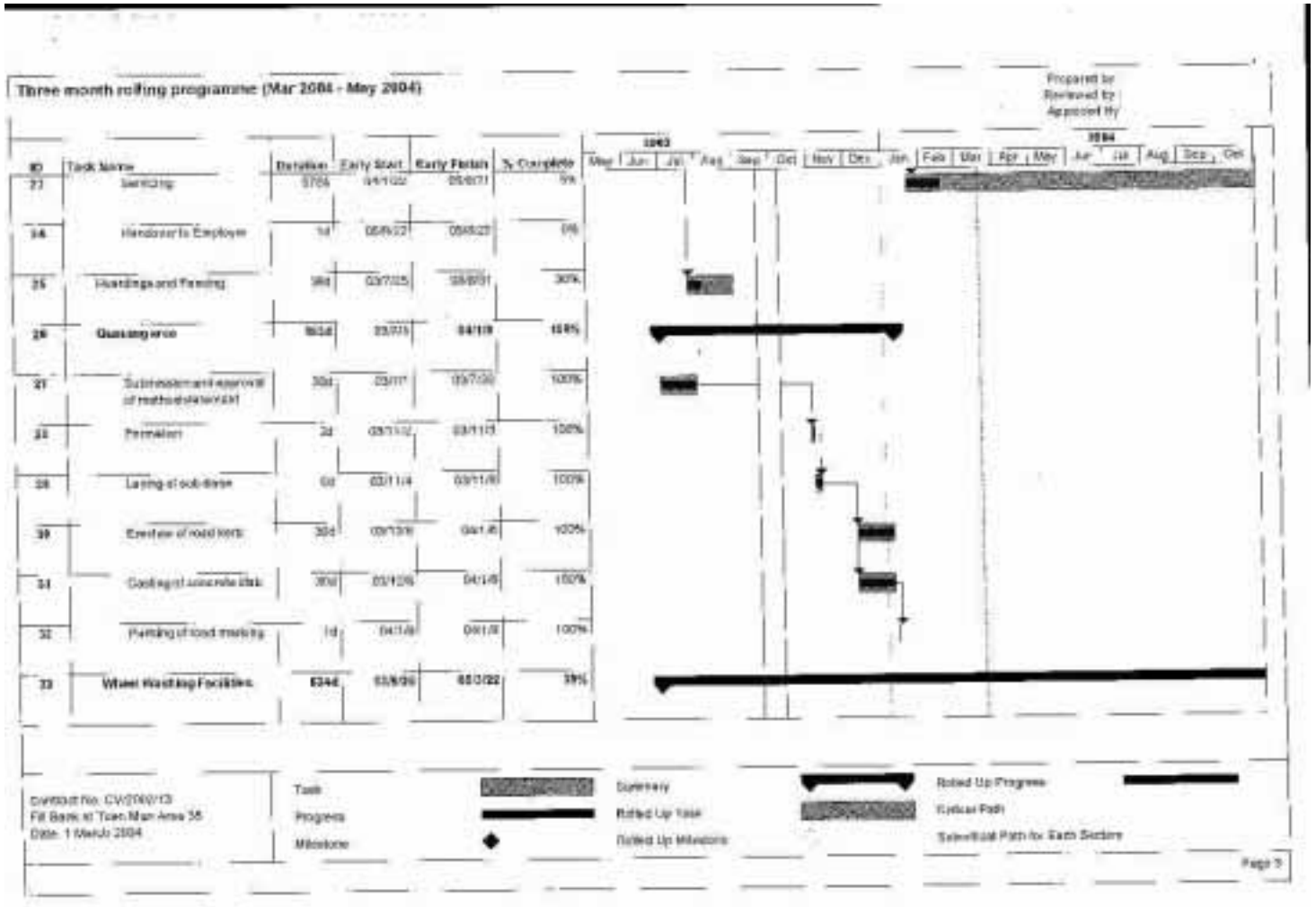
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Critical Path
Subcritical Path for Each Section


Three month rolling programme (Mar 2004 - May 2004)
Prepared by
Reviewed by
Approved by
2003
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Task Name
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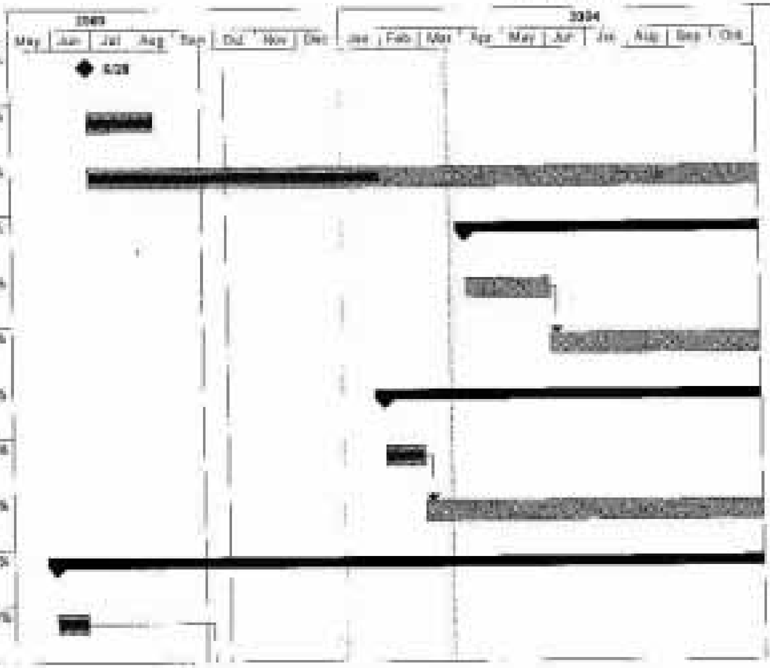
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Critical Path
Page 9

Three month rolling programme (Mar 2004 - May 2004)

Prepared by:
Reviewed by:
Approved By:

ID	Task Name	Duration	Early Start	Early Finish	% Complete
34	Take over	1d	03/6/30	03/6/30	100%
35	Modification of wheel washing facilities	49d	03/6/10	03/8/15	100%
36	Operation and maintenance	824d	03/6/30	05/4/22	34%
37	Surveillance System	427d	04/4/1	05/5/1	8%
38	Provision	63d	04/4/1	04/6/1	0%
39	Operation and maintenance	365d	04/6/2	05/6/1	0%
40	Tipping Hall	384d	04/2/1	04/11/30	9%
41	Modification	29d	04/2/1	04/2/29	100%
42	Operation	275d	04/3/1	04/11/30	0%
43	Environmental Monitoring Works	744d	03/5/2	05/5/16	33%
44	Water Quality Baseline Report	22d	03/6/2	03/6/23	100%



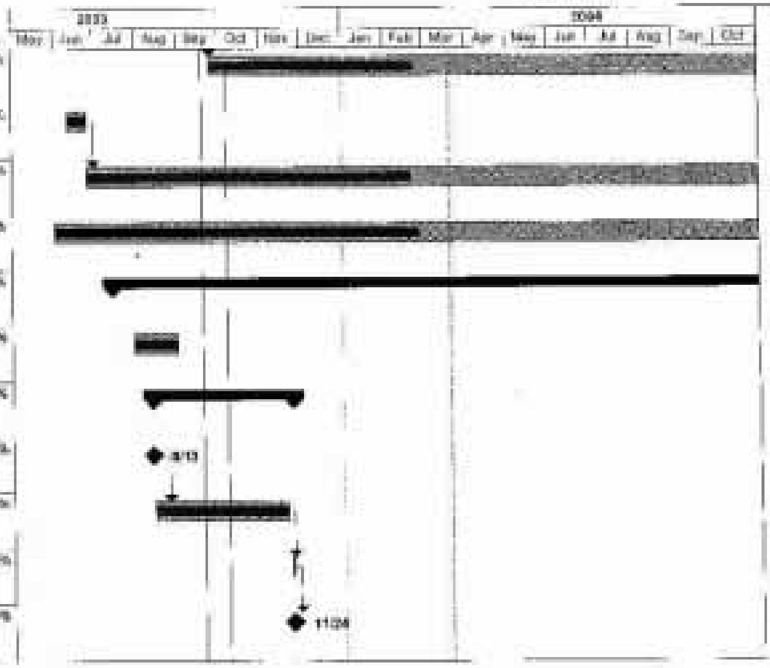
Contract No. CV/2002/13
Fill Bank at Tseung Kwan O Area 38
Date: 1 March 2004

Task		Summary		Rolled Up Progress	
Progress		Rolled Up Task		Critical Path	
Milestone	◆	Rolled Up Milestone		Subcritical Path for Each Section	

Three month rolling programme (Mar 2004 - May 2004)

Prepared by
Reviewed by
Approved by

ID	Task Name	Duration	Early Start	Early Finish	% Complete
44	Water Quality Monitoring	1050d	02/9/26	05/8/14	26%
46	Air Quality Baseline Monitoring	14d	03/6/12	03/6/25	100%
47	Air Quality Monitoring	706d	03/6/26	05/5/31	44%
48	Environmental Audit	752d	03/5/2	05/5/31	37%
49	**Section 1 of the Works**	**695d**	**03/7/15**	**05/5/18**	**45%**
50	Development of computer programme for trip ticket system and weighbridges	52d	03/7/21	03/9/10	100%
51	**Combined reception and exit office (CRED) converted from recorder house**	**164d**	**03/8/13**	**03/11/24**	**100%**
52	Take power of weighbridge and recorder house	1d	03/8/13	03/8/13	100%
53	Conversion of recorder house into a CRED	98d	03/8/14	03/11/19	100%
54	Installation of trip ticket system in the CRED	1d	03/11/20	03/11/20	100%
55	Commissioning of the CRED	1d	03/11/24	03/11/24	100%



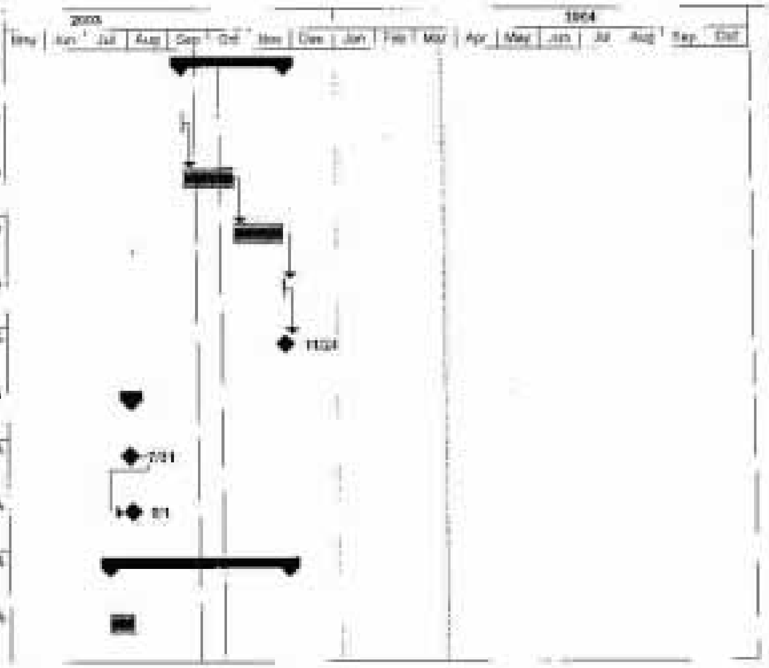
Contract No. CV/2002/13
Fill Bank at Tuen Mun Area 38
Date: 1 March 2004

Task		Summary	
Progress		Rolled Up Task	
Milestone	◆	Rolled Up Milestone	
Rolled Up Progress		Critical Path	
Sub-critical Path for Each Section			

Three month rolling programme (Mar 2004 - May 2004)

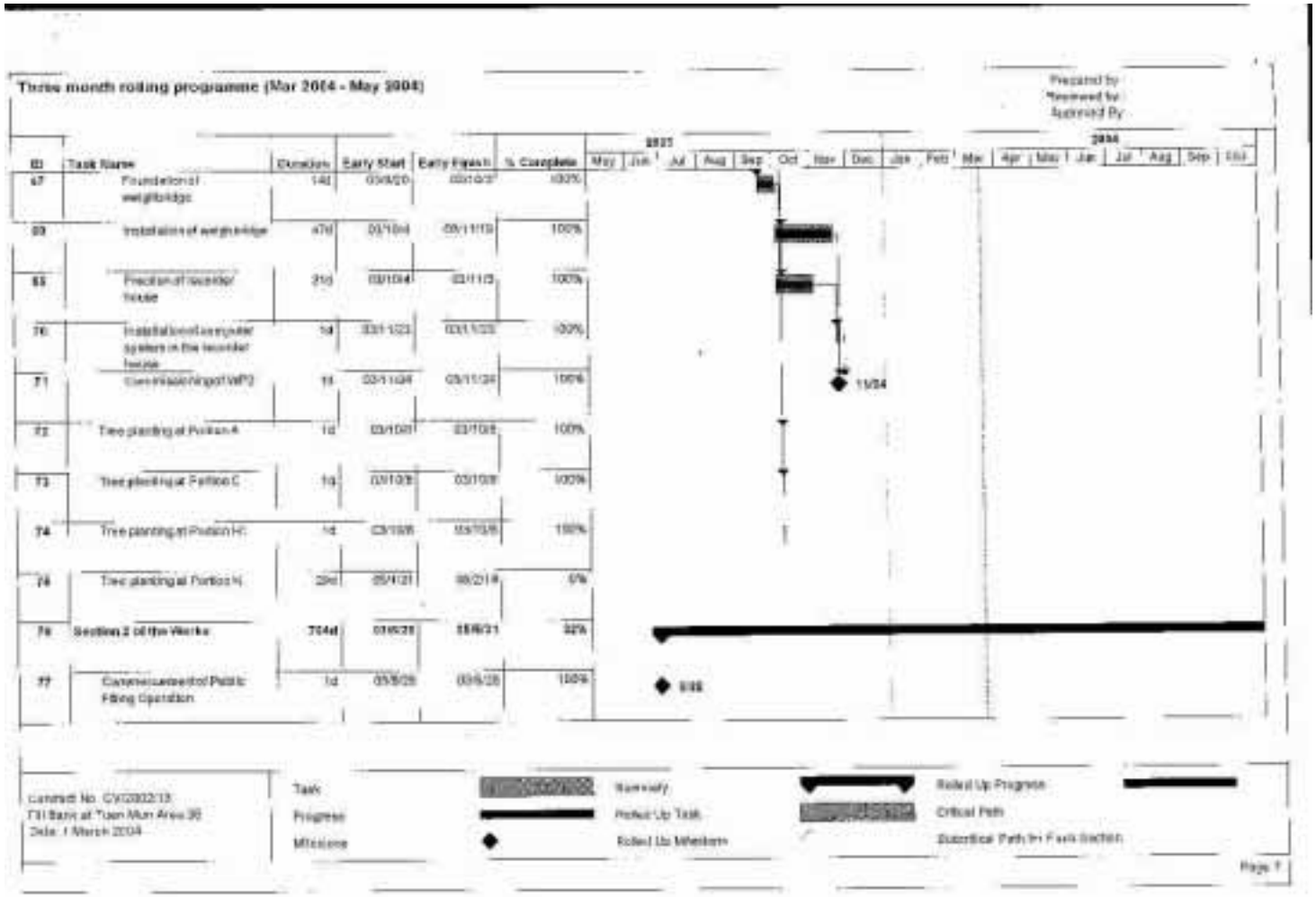
Prepared by:
Reviewed by:
Approved by:

ID	Task Name	Duration	Early Start	Early Finish	% Complete
56	**New combined reception and exit office (CREO)**	76d	03/9/10	03/11/24	100%
57	Demolition of paving blocks	1d	03/9/10	03/9/10	100%
58	Construction of foundation	37d	03/9/11	03/10/17	100%
59	Erection of structures for CREO	38d	03/10/16	03/11/22	100%
60	Installation of trip ticket system in the CREO	1d	03/11/??	03/11/22	100%
61	Commissioning of the new CREO	1d	03/11/24	03/11/24	100%
62	**Weighbridge WP3**	2d	03/7/31	03/8/1	100%
63	Taking over of weighbridge and recorder booth	1d	03/7/31	03/7/31	100%
64	Commissioning of weighbridge	1d	03/8/1	03/8/1	100%
65	**Weighbridge WP4**	133d	03/7/15	03/11/24	100%
66	Submission	17d	03/7/15	03/7/31	100%



Contract No. CV/2003/13
Fill Bank at Tuen Mun Area 38
Date: 1 March 2004

Task		Summary		Rolled Up Progress	
Progress		Rolled Up Task		Critical Path	
Milestone	◆	Rolled Up Milestone		Submitted Path for Each Section	


Three month rolling programme (Mar 2004 - May 2004)
Prepared by
Reviewed by
Approved By
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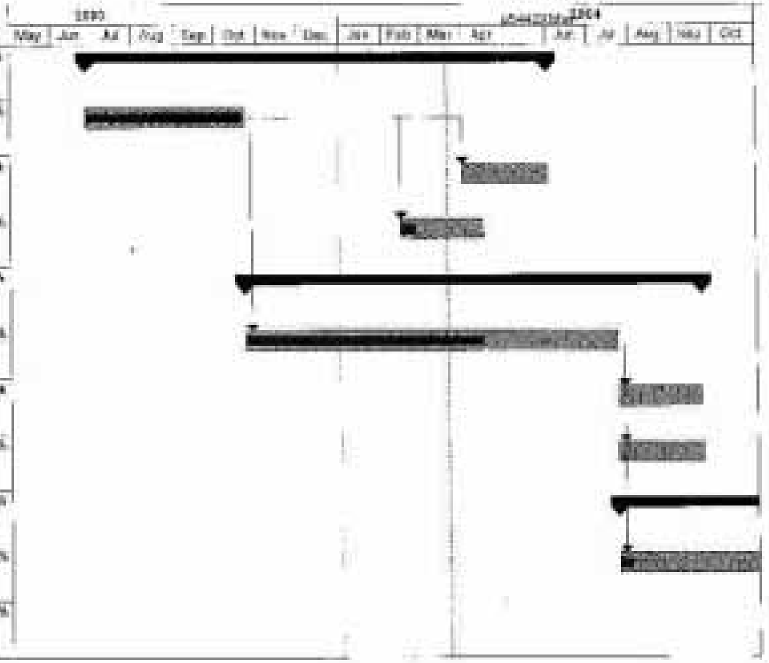
Foundation of weighbridge
Installation of weighbridge
Erection of recorder house
Installation of computer system in the recorder house
Commissioning of WP2
Tree planting at Portion A
Tree planting at Portion C
Tree planting at Portion H
Tree planting at Portion N
Section 2 of the Works
Commencement of Public Filling Operation
11/04
Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Critical Path
Page 1

Three month rolling programme (Mar 2004 - May 2004)

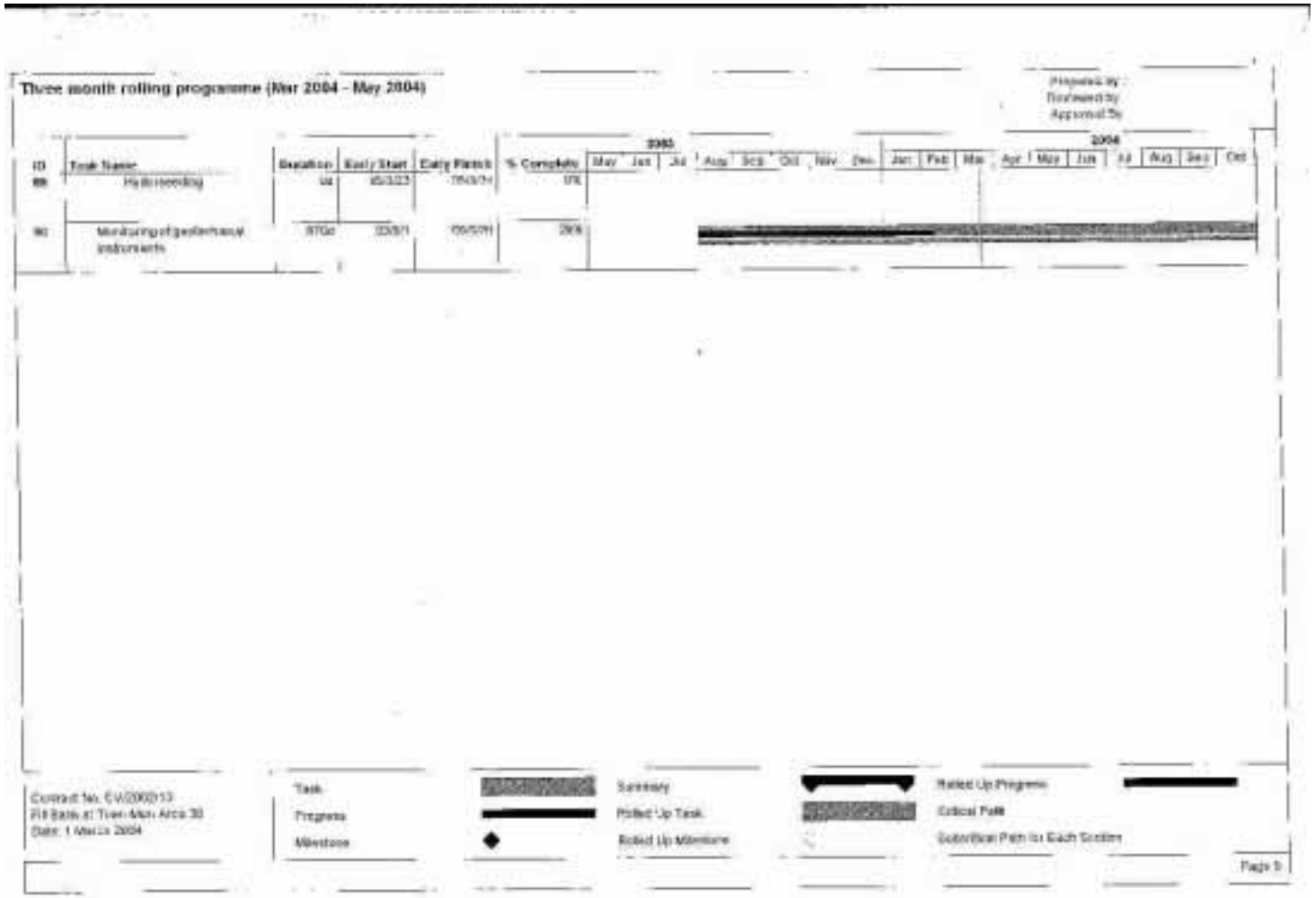
Prepared by:
Reviewed by:
Approved By:

ID	Task Name Ar	Duration	Early Start	Early Finish	% Complete
79	**Public filling operation between +6.00mPD to +15.00mPD**	**440d**	**03/6/28**	**04/9/1**	**57%**
79	Earthwork	117d	03/6/20	03/10/22	99%
80	Drainage at +15.00mPD	60d	04/4/1	04/6/1	0%
81	Hydroseeding	61d	04/2/15	04/4/15	19%
82	**Public filling operation between +15.00mPD to +25.00mPD**	**336d**	**03/10/03**	**04/9/22**	**44%**
83	Earthwork	274d	03/10/20	04/7/20	64%
84	Drainage at +25.00mPD	61d	04/7/21	04/9/21	0%
85	Hydroseeding	60d	04/7/22	04/9/22	0%
86	**Public filling operation between +25.00mPD to +35.00mPD**	**364d**	**04/7/21**	**05/9/22**	**2%**
87	Earthwork	243d	04/7/20	05/3/22	4%
88	Drainage at +35.00mPD	61d	05/3/23	05/5/22	0%



Contract No. CV/2002/13
Fill Bank at Tuen Mun Area 38
Date: 1 March 2004

Task		Summary		Rolled Up Progress	
Progress		Rolled Up Task		Critical Path	
Milestone	◆	Rolled Up Milestone		Subcritical Path for Each Section	


Three month rolling programme (Mar 2004 – May 2004)
Prepared by
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Hydroseeding
Monitoring of geotechnical instruments
Contract No. CV/2002/13
Fill Batts at Tuen Mun Area 38
Date: 1 March 2004
Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Critical Path
Subcritical Path for Each Section
Page 1

Three month rolling programme (Mar 2004 - May 2004)

Prepared By:
Reviewed By:
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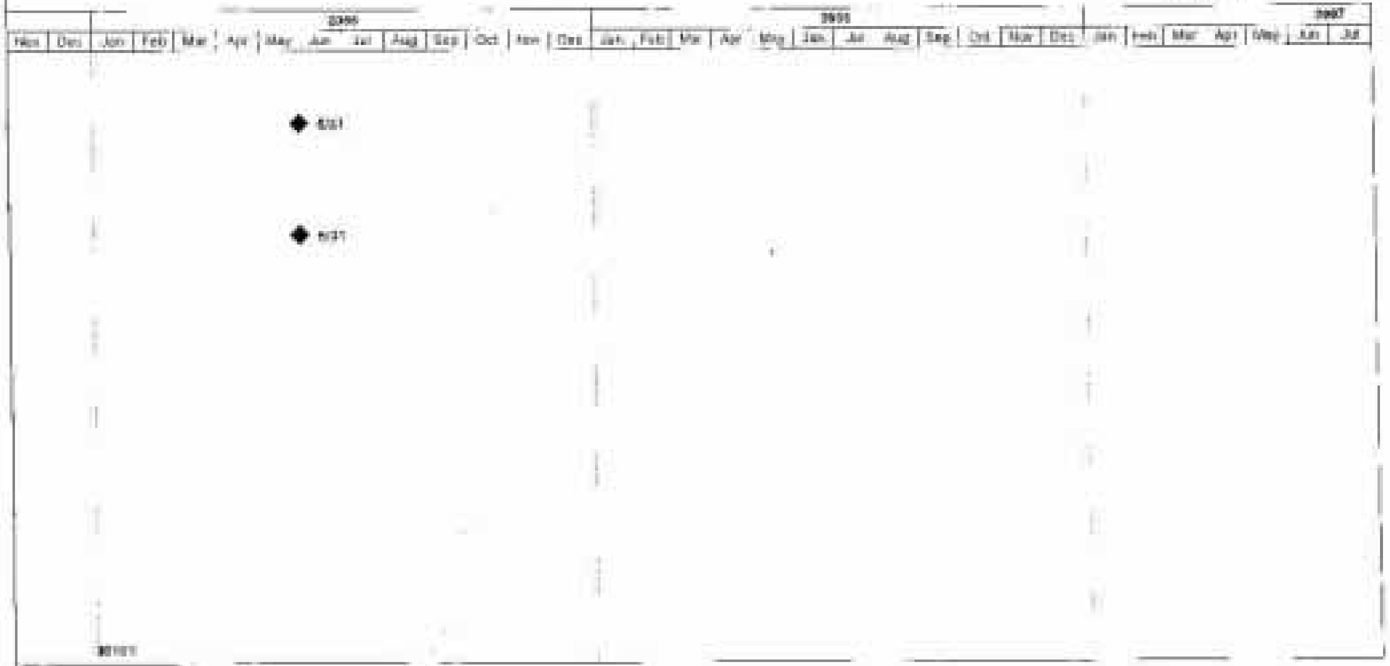

Contract No. CV/2002/13
Ha Kok at Tuen Mun Area 38
Date: 1 March 2004

Task
Progress
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Summary
Rolled Up Task
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Critical Path
Subcritical Path for Each Section

Three month rolling programme (Mar 2004 - May 2004)

Prepared by:
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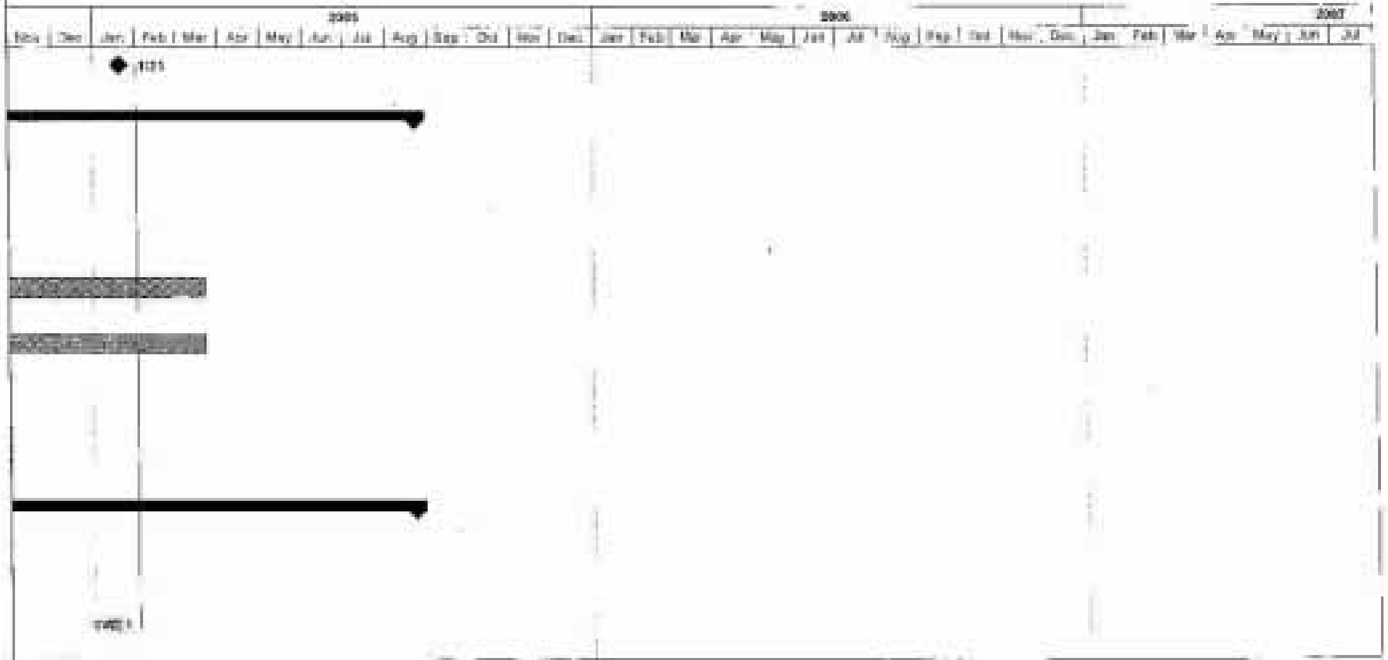
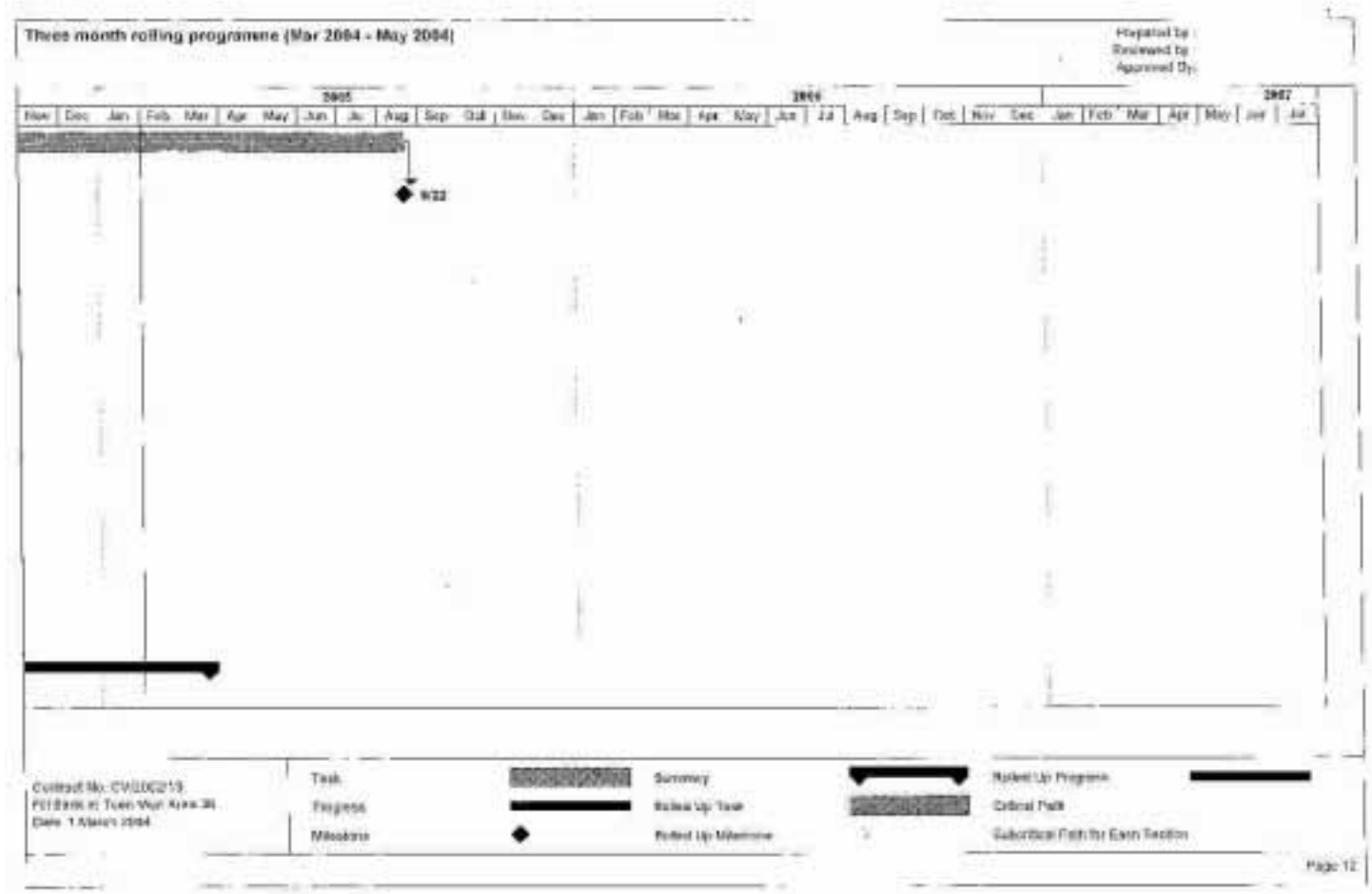
Approved By:



Contract No. CV/2002/13
Fill Bank at Tuen Mun Area 38
Date: 1 March 2004

Task		Warranty		Rolled Up Progress	
Progress		Rolled Up Task		Critical Path	
Milestone	◆	Rolled Up Milestone		Contractual Path for Each Section	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Contract No: CW1006219
Date: 1 March 2004
Task
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Summary
Rolled Up Task
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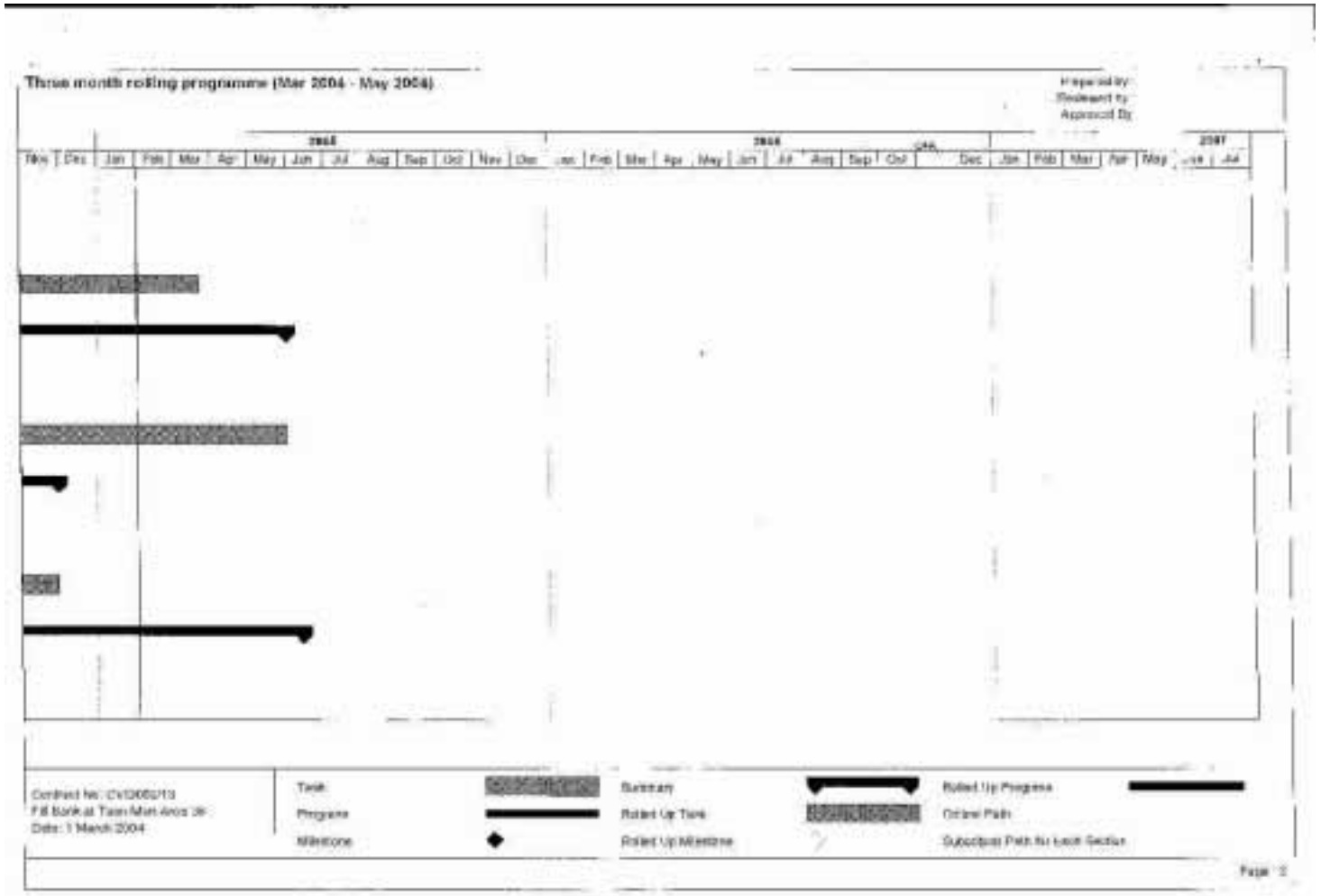
Rolled Up Progress
Critical Path
Page 12


Three month rolling programme (Mar 2004 - May 2004)
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Contract No: CV/2003/10
Fill Bank at Tuen Mun Area 38
Date: 1 March 2004
Task
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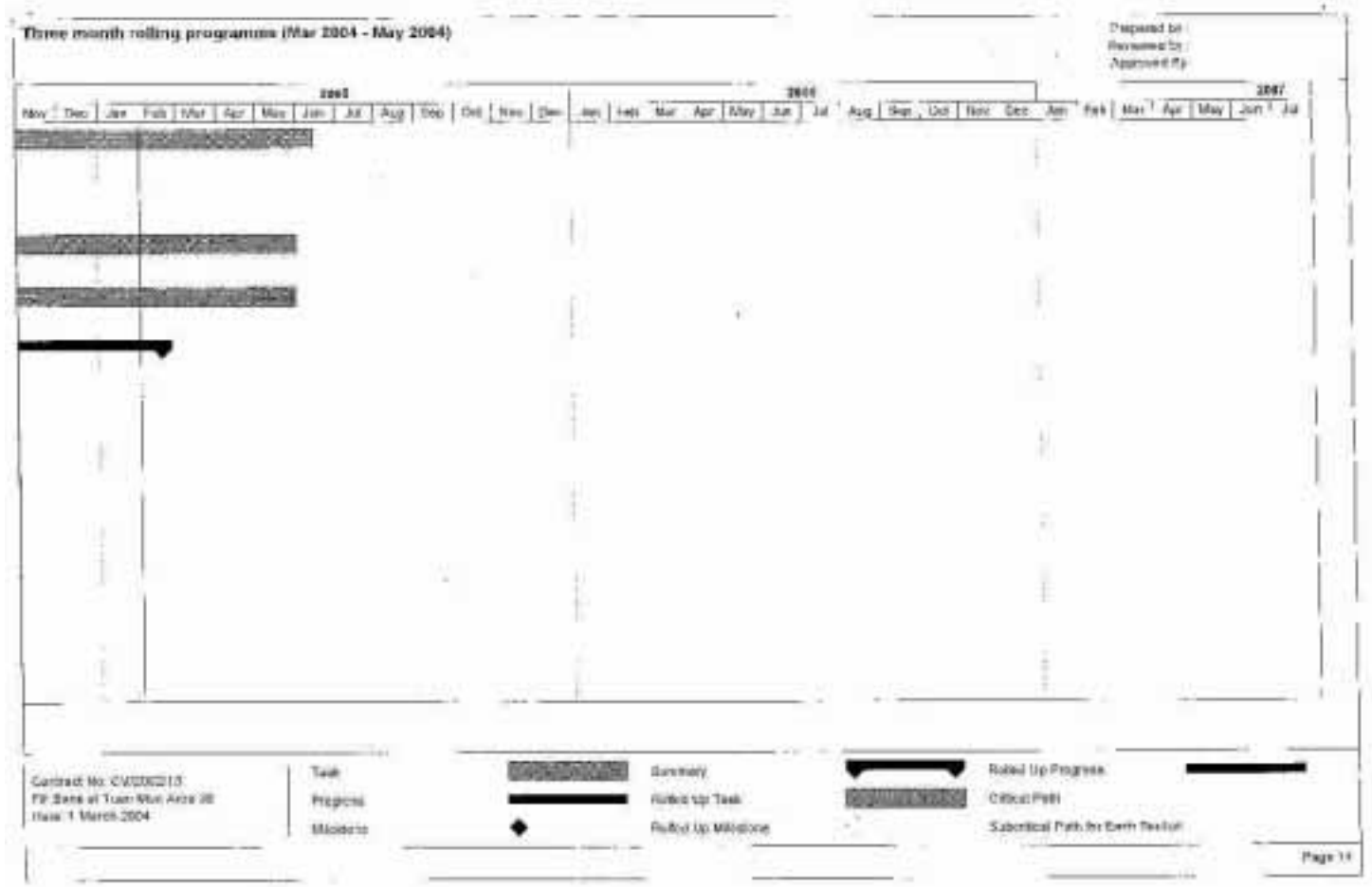
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Critical Path
Subcritical Path for Each Section
Page 1


Three month rolling programme (Mar 2004 - May 2004)
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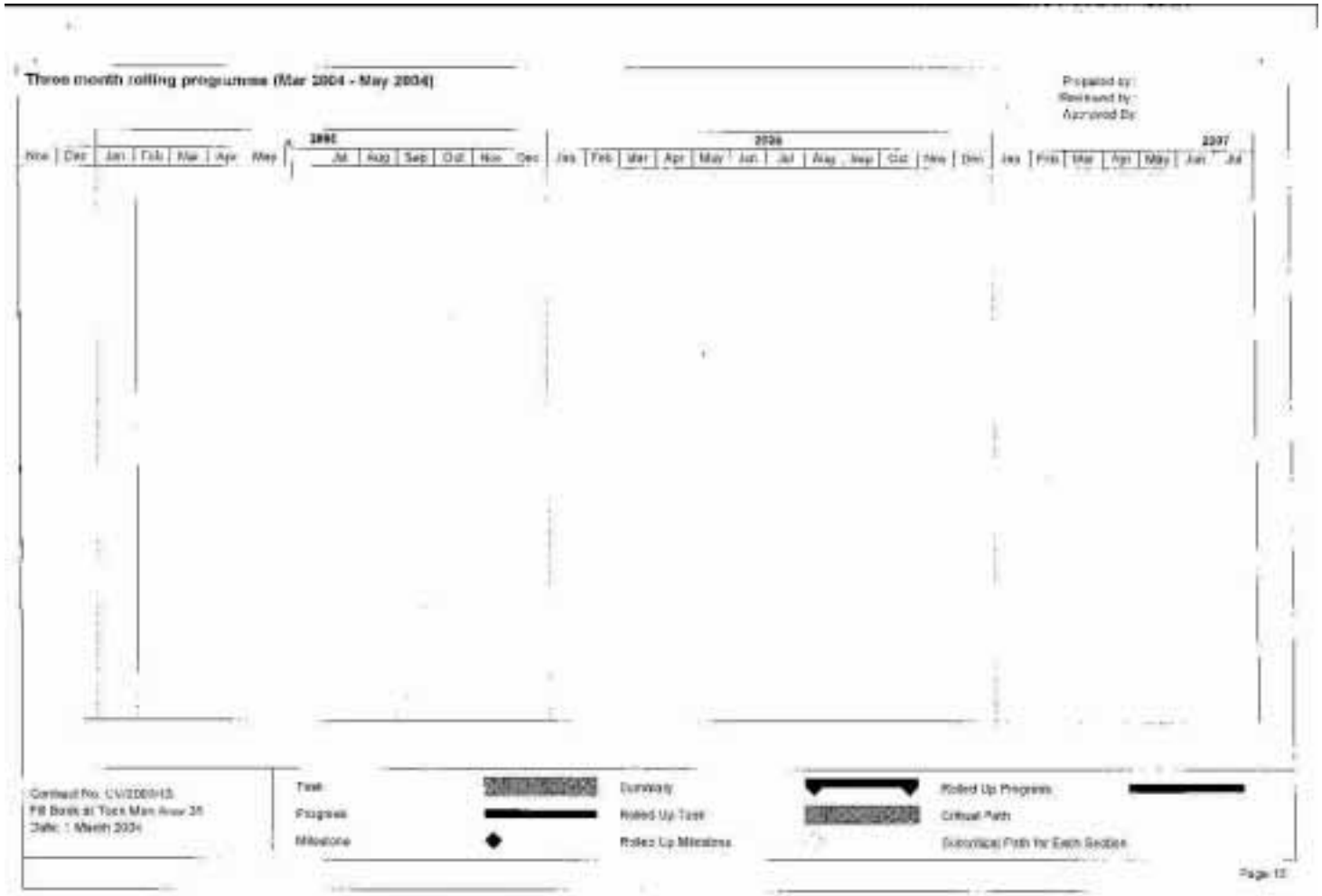
Contract No: CV/2002/15
FP Bank at Tuen Mun Area 38
Date: 1 March 2004
Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Critical Path
Page 11


Three month rolling programme (Mar 2004 - May 2004)
Prepared by:
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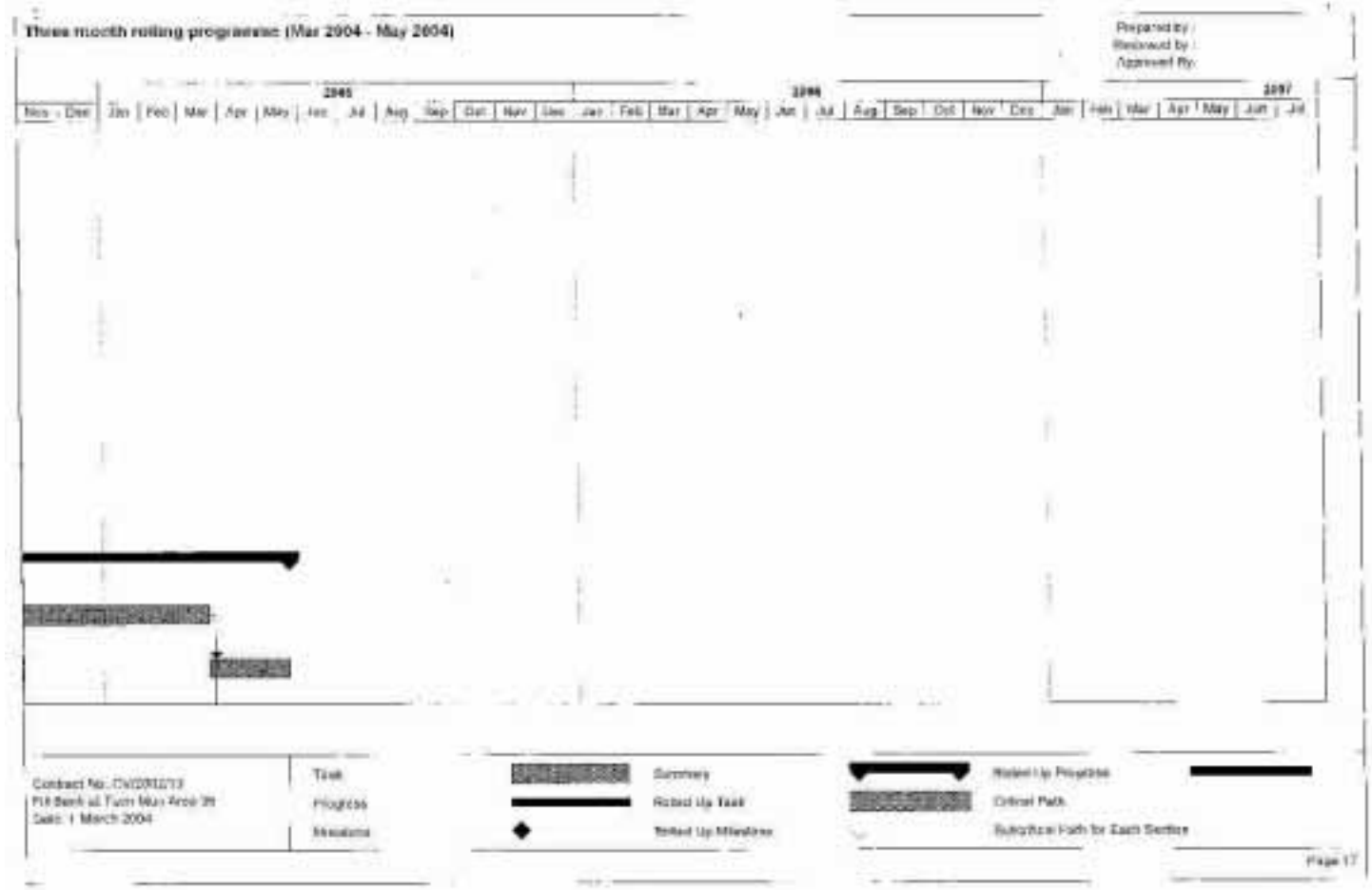
Contract No. CV/2003/13
FB Bank at Tuck Man Area 35
Date: 1 March 2004
Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Critical Path
Sub-critical Path for Each Section
Page 12

Three month rolling programme (Mar 2004 - May 2004)

Prepared by:
Reviewed by:
Approved by:

Contract No. CV/2002/13
Fill Bank at Tuen Mun Area 38
Date: 1 March 2004

Task		Summary		Rolled Up Progress	
Progress		Rolled Up Task		Critical Path	
Milestone	◆	Rolled Up Milestone		Subcritical Path for Each Section	


Three month rolling programme (Mar 2004 - May 2004)
Prepared by :
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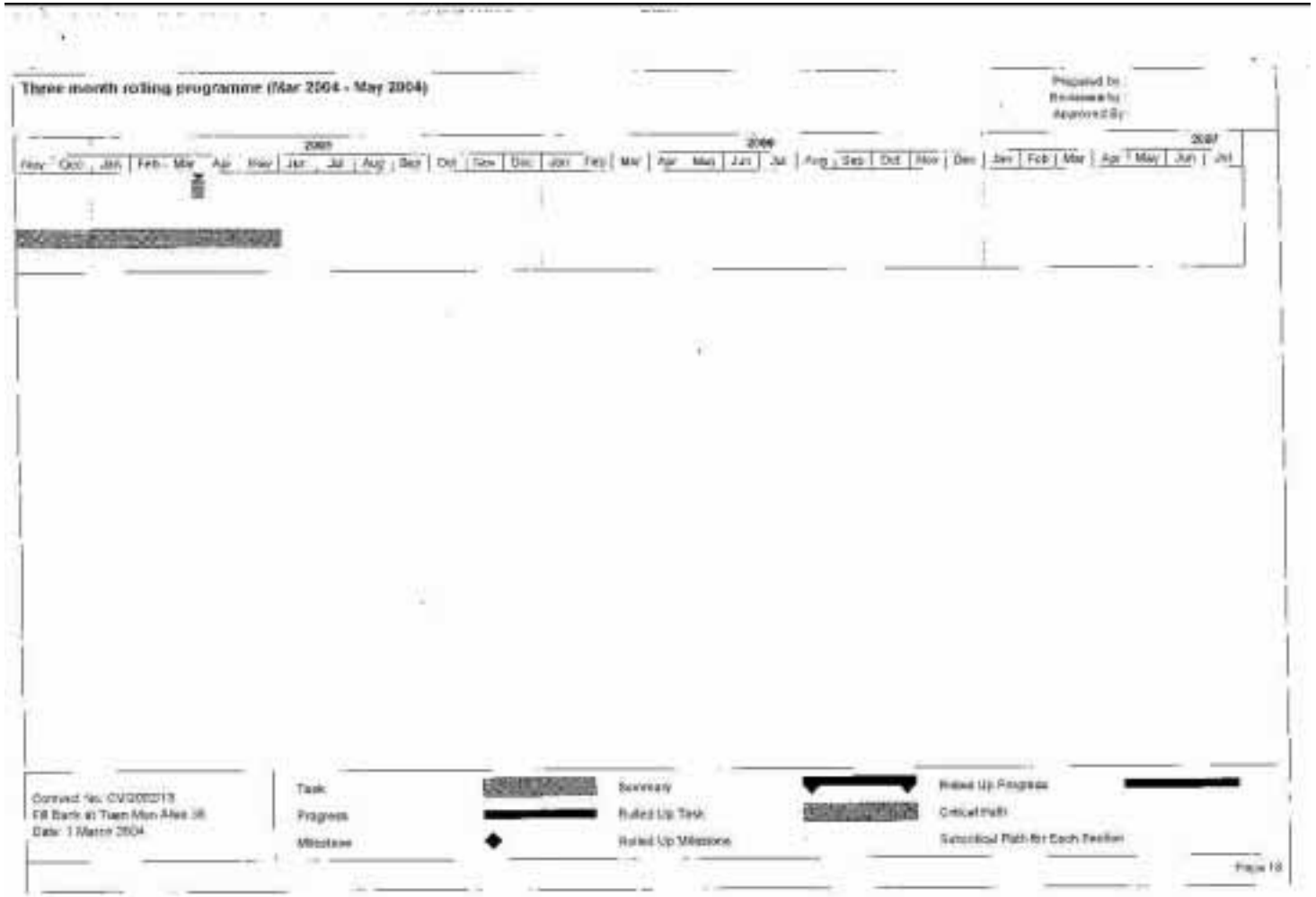
Contract No. CV/2001/13
Pili Bank at Tuen Mun Area 39
Date: 1 March 2004
Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Critical Path
Subcritical Path for Each Section
Page 17


Three month rolling programme (Mar 2004 - May 2004)
Prepared by:
Reviewed by:
Approved By:
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Contract No. CV/2003/13
Fill Bank at Tuen Mun Area 38
Date: 1 March 2004
Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Critical Path
Subcritical Path for Each Section

Appendix X

Monitoring Schedule for the following month

Fill Bank at Tuen Mun Area 38
Environmental Monitoring Schedule
January 2005

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						January 1
2	**3** WQM (Ebb: 18:26) (Flood: 12:41)	**4**	**5** WQM (Ebb: 07:14) (Flood: 14:01) 1 – hr TSP 24 – hr TSP	**6** Site Inspection	**7** WQM (Ebb: 10:09) (Flood: 15:25)	**8**
9	**10**	**11** WQM (Ebb: 13:47) (Flood: 08:41) 1 – hr TSP 24 – hr TSP	**12**	**13** WQM (Ebb: 15:20) (Flood: 10:05) Site Inspection	**14**	**15** WQM (Ebb: 16:59) (Flood: 11:25)
16	**17** WQM (Ebb: 19:12) (Flood: 12:42) 1 – hr TSP 24 – hr TSP	**18**	**19** WQM (Ebb: 07:31) (Flood: 13:46)	**20** Site Inspection	**21**	**22** WQM (Ebb: *) (Flood: 11:31) 1 – hr TSP 24 – hr TSP
23	**24** WQM (Ebb: 12:30) (Flood: 17:26)	**25**	**26** WQM (Ebb: 13:40) (Flood: 08:41)	**27** Site Inspection Landscape Audit	**28** WQM (Ebb: 14:43) (Flood: 09:28) 1 – hr TSP 24 – hr TSP	**29**
30	**31**					

Notes : *1. 24 –hr TSP (to be monitored once every 6 days) at monitoring locations A1 & A2.*
2. 1 hour TSP (to be monitored three times every six days when highest level of dust generation expected) at monitoring locations A1 & A2.
3. WQM - water quality monitoring three times per week, on mid-flood and mid-ebb tides. Days of monitoring to be separated by at least 36 hours. Monitoring locations FC1, FM1, FM2 & FC2.
4. Site inspections to be carried out once per week.
5. Auditing of landscape works to be carried out once per month.
** No ebb tide.*

Appendix XI

Wind Speed and Direction Data

DATE MON	DATE DAY	TIME HR	TIME MIN	WS:AVG M/S	WS:MAX M/S	WD:AVG DEG	WD:SDV DEG
12	1	0	0	1.7	4	76	17
12	1	1	0	1.8	4	76	19
12	1	2	0	2.3	5	76	17
12	1	3	0	2.1	5	77	18
12	1	4	0	1.8	5	70	22
12	1	5	0	1.6	4	73	24
12	1	6	0	1.3	5	65	26
12	1	7	0	1.2	4	44	24
12	1	8	0	0.8	3	76	43
12	1	9	0	1.4	5	93	41
12	1	10	0	1.8	8	41	49
12	1	11	0	1.6	5	19	68
12	1	12	0	1.6	6	125	64
12	1	13	0	2	6	138	52
12	1	14	0	2.2	5	178	48
12	1	15	0	2.2	5	145	41
12	1	16	0	3.2	6	103	17
12	1	17	0	3.2	6	107	18
12	1	18	0	3	6	102	19
12	1	19	0	2.8	6	96	18
12	1	20	0	2.6	6	90	17
12	1	21	0	2.5	5	84	20
12	1	22	0	1.9	5	75	20
12	1	23	0	1.7	5	68	24
12	2	0	0	1.9	4	67	19
12	2	1	0	2.2	5	81	17
12	2	2	0	1.8	5	71	20
12	2	3	0	1	3	30	40
12	2	4	0	0.2	1	346	61
12	2	5	0	0.4	1	316	76
12	2	6	0	0.4	3	13	70
12	2	7	0	0.2	1	315	72
12	2	8	0	0.1	1	1	46
12	2	9	0	0.6	2	279	42
12	2	10	0	1.2	5	81	93
12	2	11	0	1.7	6	351	79
12	2	12	0	1.4	5	34	78
12	2	13	0	1.9	6	124	51
12	2	14	0	2.2	5	179	35
12	2	15	0	2	6	249	58
12	2	16	0	2	4	305	21
12	2	17	0	1.4	4	301	30
12	2	18	0	0.7	4	228	68
12	2	19	0	1.7	4	72	19
12	2	20	0	2	4	79	15
12	2	21	0	1.4	3	76	17
12	2	22	0	1.4	3	73	15
12	2	23	0	1.2	2	50	19
12	7	0	0	1.5	6	314	30
12	7	1	0	0.5	5	25	58
12	7	2	0	2.3	8	326	35
12	7	3	0	3.3	10	322	25
12	7	4	0	3.2	9	330	28
12	7	5	0	3.4	10	334	27
12	7	6	0	3.1	9	333	28
12	7	7	0	2.7	8	329	25
12	7	8	0	2.6	8	329	25
12	7	9	0	2.7	7	321	27
12	7	10	0	2.5	8	323	32
12	7	11	0	2.2	8	316	37
12	7	12	0	1.3	4	166	71
12	7	13	0	2.3	5	249	20
12	7	14	0	1.5	3	252	22
12	7	15	0	0.2	2	255	51
12	7	16	0	0.9	2	35	41
12	7	17	0	1.5	3	46	8
12	7	18	0	1.4	2	55	8
12	7	19	0	1.3	2	52	10
12	7	20	0	0.2	1	356	56
12	7	21	0	0.1	1	352	45
12	7	22	0	0	0	322	52
12	7	23	0	0.1	1	304	51
12	8	0	0	0	1	309	34
12	8	1	0	0	0	280	20
12	8	2	0	0	0	293	33
12	8	3	0	0	0	297	25
12	8	4	0	0	0	286	23
12	8	5	0	0.1	1	308	49

12	8	6	0	0	1	341	58
12	8	7	0	0.1	1	289	45
12	8	8	0	0.1	2	340	68
12	8	9	0	0.2	1	73	84
12	8	10	0	1.5	7	194	73
12	8	11	0	2.5	9	351	46
12	8	12	0	2.6	8	307	35
12	8	13	0	2.4	8	312	35
12	8	14	0	2.4	7	316	30
12	8	15	0	3.3	8	304	25
12	8	16	0	3.7	9	294	24
12	8	17	0	1.8	5	306	35
12	8	18	0	1	5	311	37
12	8	19	0	0.6	3	321	26
12	8	20	0	0.3	1	299	24
12	8	21	0	0.3	2	319	40
12	8	22	0	2.4	8	14	31
12	8	23	0	3.3	11	18	33
12	13	0	0	3.3	9	16	30
12	13	1	0	3.5	9	7	30
12	13	2	0	2.6	8	1	26
12	13	3	0	0.8	4	23	54
12	13	4	0	1.4	6	11	31
12	13	5	0	0.4	3	0	59
12	13	6	0	0.2	2	350	73
12	13	7	0	0	1	330	57
12	13	8	0	0.1	1	352	72
12	13	9	0	0.1	1	344	101
12	13	10	0	0.9	5	193	92
12	13	11	0	1.2	5	126	76
12	13	12	0	1.8	5	135	46
12	13	13	0	2.1	5	220	27
12	13	14	0	1.3	4	214	69
12	13	15	0	2.6	5	119	34
12	13	16	0	2.9	6	114	25
12	13	17	0	2.1	5	90	41
12	13	18	0	1.7	4	92	42
12	13	19	0	1.4	5	73	26
12	13	20	0	1.3	4	68	22
12	13	21	0	0.9	3	46	31
12	13	22	0	1.1	4	61	30
12	13	23	0	1.9	7	77	23
12	14	0	0	2.2	6	68	29
12	14	1	0	1.6	5	69	29
12	14	2	0	1	4	46	40
12	14	3	0	0.7	3	53	36
12	14	4	0	0.6	3	70	65
12	14	5	0	0.9	5	56	44
12	14	6	0	0.9	3	52	29
12	14	7	0	0.8	5	25	62
12	14	8	0	1.4	5	59	38
12	14	9	0	1.4	5	99	39
12	14	10	0	2.3	6	100	34
12	14	11	0	2.8	6	119	23
12	14	12	0	2.8	6	117	21
12	14	13	0	2.6	5	111	20
12	14	14	0	2.8	6	101	18
12	14	15	0	3.1	6	108	16
12	14	16	0	3	6	95	18
12	14	17	0	3	6	91	17
12	14	18	0	2.2	4	91	17
12	14	19	0	1.9	5	77	19
12	14	20	0	0.6	2	3	48
12	14	21	0	0.2	1	5	49
12	14	22	0	1.2	3	50	10
12	14	23	0	1.4	3	54	10
12	20	0	0	1.3	4	63	14
12	20	1	0	1.4	3	54	12
12	20	2	0	1.3	2	44	8
12	20	3	0	0.5	2	18	43
12	20	4	0	0.4	1	308	57
12	20	5	0	0.6	2	299	62
12	20	6	0	0.7	4	5	91
12	20	7	0	1.6	6	353	48
12	20	8	0	0.1	1	11	89
12	20	9	0	1	4	338	75
12	20	10	0	1.1	4	74	62
12	20	11	0	1.7	5	98	48
12	20	12	0	2.1	4	146	36
12	20	13	0	2	5	225	30
12	20	14	0	2.3	5	245	24

12	20	15	0	1.7	4	223	42
12	20	16	0	2.5	5	101	21
12	20	17	0	3.2	6	104	16
12	20	18	0	2.9	7	95	17
12	20	19	0	3	6	87	17
12	20	20	0	3.1	7	92	18
12	20	21	0	2.5	6	97	18
12	20	22	0	2.9	6	95	15
12	20	23	0	2.8	6	88	19
12	21	0	0	3.7	8	95	17
12	21	1	0	3.7	8	96	17
12	21	2	0	3.6	7	93	20
12	21	3	0	3.1	7	79	23
12	21	4	0	2.8	7	77	24
12	21	5	0	3.4	8	89	22
12	21	6	0	3	9	80	25
12	21	7	0	2.4	6	91	21
12	21	8	0	2.4	6	87	23
12	21	9	0	3	7	98	19
12	21	10	0	3.6	7	102	16
12	21	11	0	4.2	8	104	16
12	21	12	0	3.8	8	114	19
12	21	13	0	3.6	7	113	18
12	21	14	0	3.5	7	107	18
12	21	15	0	3.6	8	105	17
12	21	16	0	3.4	7	106	17
12	21	17	0	3.3	7	108	16
12	21	18	0	2.3	5	104	21
12	21	19	0	2.6	7	103	20
12	21	20	0	3	7	100	19
12	21	21	0	2.2	5	95	19
12	21	22	0	2.9	7	95	17
12	21	23	0	3.6	7	96	17
12	24	0	0	1.3	4	305	29
12	24	1	0	1.7	4	319	25
12	24	2	0	1.9	5	313	22
12	24	3	0	2.3	8	315	27
12	24	4	0	1	4	322	31
12	24	5	0	0.5	2	37	71
12	24	6	0	1.1	4	24	42
12	24	7	0	1.1	4	356	26
12	24	8	0	1.7	6	355	33
12	24	9	0	1.3	4	322	53
12	24	10	0	1.3	5	64	96
12	24	11	0	1.2	3	159	67
12	24	12	0	1.7	5	223	45
12	24	13	0	2.1	5	272	32
12	24	14	0	3.5	8	306	18
12	24	15	0	3.7	8	302	18
12	24	16	0	3.5	7	304	18
12	24	17	0	3.1	7	303	20
12	24	18	0	2.1	5	305	22
12	24	19	0	2.8	7	313	18
12	24	20	0	1.9	6	321	24
12	24	21	0	1.6	5	329	24
12	24	22	0	1.4	4	326	20
12	24	23	0	1.4	4	320	20
12	25	0	0	1.5	4	320	19
12	25	1	0	1	4	320	28
12	25	2	0	0.2	1	331	49
12	25	3	0	0.4	1	327	35
12	25	4	0	0.3	2	343	74
12	25	5	0	0.4	3	35	57
12	25	6	0	1.6	5	70	32
12	25	7	0	1.9	5	78	29
12	25	8	0	0.6	3	61	35
12	25	9	0	1.3	3	99	27
12	25	10	0	1.3	3	101	29
12	25	11	0	2	4	113	23
12	25	12	0	3	6	108	20
12	25	13	0	2.9	6	109	23
12	25	14	0	2.5	6	117	22
12	25	15	0	1.4	4	313	84
12	25	16	0	1.5	5	154	66
12	25	17	0	2.2	4	108	20
12	25	18	0	2.2	5	107	18
12	25	19	0	2	5	100	18
12	25	20	0	2.1	5	95	17
12	25	21	0	2.6	5	95	15
12	25	22	0	1.8	4	91	18
12	25	23	0	1.4	3	88	19

12	30	0	0	1.1	4	65	44
12	30	1	0	1.4	5	71	29
12	30	2	0	1.2	5	83	47
12	30	3	0	0.7	3	115	68
12	30	4	0	0.5	2	299	47
12	30	5	0	0	0	0	0
12	30	6	0	1.2	5	317	70
12	30	7	0	0.3	2	348	74
12	30	8	0	0.5	2	328	80
12	30	9	0	1.8	7	338	28
12	30	10	0	2.2	7	350	25
12	30	11	0	1.9	7	7	38
12	30	12	0	1.8	7	349	56
12	30	13	0	2.1	8	321	37
12	30	14	0	2.4	6	321	37
12	30	15	0	2.6	7	320	32
12	30	16	0	3	8	312	29
12	30	17	0	3.9	10	311	24
12	30	18	0	3.8	10	309	28
12	30	19	0	3.4	10	319	33
12	30	20	0	4.1	12	314	31
12	30	21	0	0	0	0	0
12	30	22	0	3.2	9	314	36
12	30	23	0	2.7	10	311	52
12	31	0	0	2.2	9	329	57
12	31	1	0	2.2	8	316	61
12	31	2	0	1.6	8	310	68
12	31	3	0	1.3	6	309	57
12	31	4	0	0.7	2	353	52
12	31	5	0	0.6	2	338	30
12	31	6	0	0.9	5	327	41
12	31	7	0	1.8	5	321	22
12	31	8	0	0.6	3	263	95
12	31	9	0	1	5	344	76
12	31	10	0	1.6	6	18	68
12	31	11	0	1.9	7	328	44
12	31	12	0	2.8	6	309	27
12	31	13	0	2.8	7	312	29
12	31	14	0	2.3	7	315	36
12	31	15	0	2.9	8	305	27
12	31	16	0	3.7	9	300	24
12	31	17	0	2.7	8	311	27
12	31	18	0	2.9	6	315	20
12	31	19	0	2.8	8	318	23
12	31	20	0	2.5	7	319	26
12	31	21	0	1.2	6	292	80
12	31	22	0	0.9	4	226	57
12	31	23	0	0.8	4	272	87