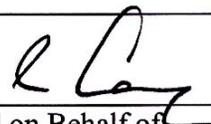


**Proposed Extension of Public Golf Course
at Kau Sai Chau Island, Sai Kung**

**Quarterly Environmental Monitoring & Audit (EM&A) Report
for April to June 2006**

(Report No. 382210/Q_002)

Report Authorized For
Issue By:



For and on Behalf of
Black & Veatch Hong Kong Limited

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July 2006

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	Name	Signature	Date
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Checked	Manuel Chua		July 2006
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Your ref : 40040032/CERT/2nd_qua.doc
Our ref :

**Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung
(Independent Environmental Checker)**

CHECK CERTIFICATE

1. We certify that professional skill and care have been used in the checking of the Environmental Team's (ET) second quarterly EM&A Report (April to June 2006) for the construction of Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung.
2. We certify that the ET's EM&A programme for the reporting period has been satisfactorily executed and the second quarterly EM&A Report (April to June 2006) has been verified.
3. We would like to comment that our evaluation of the ET's EM&A is based on a random audit process which cannot be guaranteed to have all non-conformities identified.

Signed



Independent Environmental Checker

Name Gary Tam

of Hong Kong Productivity Council
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Date 14 July 2006

Executive Summary

This is the second quarterly Environmental Monitoring and Audit (EM&A) report prepared by Black & Veatch, the designated Environmental Team (ET), for the Project “Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung”. The construction works of golf course was commenced on 16th January 2006. This report presents the results of the EM&A works conducted in the second quarter of 2006 from April to June 2006.

In the reporting quarter, the following activities took place for the Project:

- Vegetation Clearance (Holes 3-8, 10 and 18)
- Earthworks
 - Holes 1-10, 17-18
 - Desalination plant (site formation and no dredging of pipelines)
 - Commissioning and operation of concrete batching plant (located at Hole 2)
 - Installation and operation of sewage treatment work (site office)
 - Installation of operation of wastewater treatment plant (near Hole 1)
- Operation of temporary barging point
- Demarcation of Stream buffer zone B2 and part of Stream B1
- Temporary bridge no. 5 construction and operation (near the freshwater inland marsh)
- Operation of temporary bridge no. 9 at Stream A
- Temporary drainage system implementation
- Wheel washing facility near maintenance building
- No work has been carried out at Holes 11 to 16.

Environmental Monitoring Works

A summary of the monitoring activities in this quarter is listed below:

24-hour Total Suspended Particulates (TSP) monitoring at GCA B1	15 times
Water quality monitoring (marine + freshwater)	22 times
Terrestrial Ecology	3 times
Marine Ecology	3 times
Landscaping & Visual	6 times

Air Quality

All measured 24-hour TSP concentrations in the reporting quarter were below the Action and Limit (AL) Levels except on 4th April 2006 which exceeded the action level.

Water Quality

During the second quarterly period (April to June 2006), exceedances were recorded, mainly suspended solids and turbidity, at M_RO1, KLW, M_Marsh, TTC, M_BP and KS (marine monitoring stations). For freshwater monitoring stations, exceedances were recorded, mainly suspended solids and turbidity, at Stream A, B and downstream of freshwater inland marsh. Exceedances were mainly contributed due to the heavy rainstorm events and insufficient temporary drainage system implemented on site. There is a long-term exceedances of suspended solids and turbidity at freshwater inland marsh since the late April 2006 after the first rainstorm occurred on 24th April 2006.

Exceedances recorded at marine monitoring stations (M_RO1, KLW and KS) and freshwater monitoring stations (Stream B) were unlikely due to the project. Exceedances were mainly due to natural variation of water quality. These exceedances were considered not attributed to the works and therefore no further action was required.

Ecology

Terrestrial

Non-compliance was recorded at downstream end of Stream A during the reporting quarter (June 2006). The incident was due to the rock fill slope failure located adjacent to the Stream A of Hole 17 after several rainstorm events. Different size of rocks were being washed away and filled at the downstream end of the Stream A. For Stream B & C, the riparian vegetation was in natural conditions similar to the condition during the Baseline Survey.

Marine

Construction of temporary barging point was started at early March 2006. Some boulders and sand were found outside the seawall and some damage (tagged) corals were recorded at Site B2. Among the 20 tagged corals, 6 of them had more obvious damages, while another two tagged corals had minor damages. The exceedance was attributed to the works and therefore further action was required. Extension of three month coral monitoring at Site B2, Site C and Control Site was carried out in April, May and June 2006. No exceedance or incident was recorded. Only minor sedimentation on some corals at Site B2 was recorded. No mortality, sedimentation or bleaching was found on the tagged corals at Site C and Control Site. Ecology remedial work at the temporary barging point proposed by the Contractor was carried out and completed in mid-May 2006.

Environmental, Landscape and Visual Audit, Watching Brief, Land Contamination

Environmental Audit

Site audit was carried out on a weekly basis to monitor environmental issues on the construction sites. The Contractor generally implemented the mitigation measures recommended in the EIA report to minimise the environmental impacts due to the construction works. Weekly site inspection and *ad hoc* site inspection were carried out to identify the potential source of dust and silt. The Contractor has provided cut-off drains at Holes 1 & 17, some of the haul road protect by concrete paving / crush stone, decking of temporary bridges near Stream A and freshwater inland marsh were paved with concrete, hydroseeding at some bare slopes, a wastewater treatment plant, sedimentation basins and silt curtains at the outlet of fresh water inland marsh, near Hole 2 and near Hole 4 during the reporting quarter to minimize the silty runoff to water sensitive receivers. However, the monitoring results revealed that the temporary drainage system implemented on site was still insufficient during reporting quarter.

Reminders and recommendations were given to the Contractor as follows:

- Watering/modify the haul road, during rock breaking, loading/unloading of dusty materials in order to minimize the dust generation;
- Minimize the water quality impact when undertaking cut-and-fill works. It is important to provide sufficient temporary drainage at critical areas to confine, collect and provide proper treatment before discharge to marine water and stream courses to ensure the water quality is comply with WPCO requirement;
- Minimize the exposed areas by controlling the vegetation clearance area. Vegetation should be kept in-situ as much as possible until works require at the construction areas;
- Minimize the cut-and-fill areas especially during wet seasons;
- Properly dispose of the vegetation stockpiles and construction waste off-site;
- Strengthen the preventive/interim measures for the silty runoff along the boundary of the exposed

- areas especially at low lying areas. More frequent maintenance on the silt fence is necessary;
- Providing wheel washing facilities;
- Provide chemical storage areas on site;
- Install temporary drainage system at the concrete batching plant area to ensure all wastewater will be recycled and reused on site and no wastewater discharge from the concrete batching plant outside the works boundary;
- Provide temporary drainage at the temporary bridges;
- Cover the bare slopes or other means to minimize the dust and runoff impacts to nearby sensitive receivers;
- Provide treatment facilities especially at water sensitive areas before water discharges from construction site;
- Maintenance of the silt curtains (integrity of the silt curtain and removal of settled silt deposited within the silt curtain) installed outside the fresh water inland marsh, near Hole 2 and near Hole 4; and
- Commission of the wastewater treatment plant.

Landscaping & Visual

Bi-weekly site audits were conducted in respect of landscape and visual mitigation measure in the reporting period. Tree protection on site was satisfactory. Stockpiles of cleared vegetation were found stored on site and required removal. Some temporary hydroseeding works near site office, Holes 1 & 3 were dead and should be replaced. The Contractor was reminded to rectify the mal-pruning practice of the transplanted trees.

Watching Brief

Watching Brief was carried out at Hole 2. The major activities were carried out at part of the Hole 2 (40%) was rock breaking activity. Other Hole 2 areas were remained the same as after vegetation clearance. No vegetation clearance and excavation were carried out at other watching brief area (Holes 11, 12, 14, 15 & 16) during the reporting quarter.

Land Contamination

The Contamination Assessment Plan (CAP) was approved by EPD on 17th February 2006. Site investigation was carried out on 14th and 15th February 2006. Site audit was carried out with IEC on 14th February 2006 with the Contractor's representatives. Contamination Assessment Report (CAR) was submitted to EPD for approval on 23rd March 2006. Based on the preliminary results and comments from EPD, further site investigation is required to quantify the lead contamination extent at the hotspot location 3. The additional soil samples were taken around mid May 2006. CAR and Remediation Assessment Plan (RAP) is prepared by the Contractor during the reporting quarter.

Environmental Complaints and Prosecution

One environmental complaint was received from Tai Tau Chau and Kai Lung Wan fish farmers about the silty runoff from the construction site and fish death during the reporting quarter. Site investigations on the water quality and fish death were carried out by Hong Kong Jockey Club, AFCD, EPD, Environmental Team, Contractor and loss adjustor. The investigation report on the cause of the fish death is not available during the reporting quarter.

Environmental Licensing and Permitting

License/Permits granted to the Project include the Environmental Permit (EP), construction noise permit (CNP) and chemical waste producer.

Future Key Issues

Key issues to be considered in the coming month include:

- Implementation of sufficient and improve the temporary drainage system on site to prevent silty runoff to marine and stream courses;
- Implementation of sufficient temporary drainage system before carry out any newly exposed area;
- Potential dust generation from activities on-site : cut-and-fill at mainly Holes 1-10 & 17-18, concrete batching plant operation, exposed/bare slope areas/stockpiles and temporary haul roads;
- Wastewater discharge from construction site : operation of sewage treatment work for the site office (near maintenance building) and concrete batching plant (located at Hole 2);
- Temporary drainage system installation at temporary bridges no. 5 (freshwater inland marsh) and 9 (Stream A);
- Land formation works for the desalination plant near to the existing pier;
- Storage of chemicals/fuel and chemical waste/waste oil on site; and
- Construction wastes, vegetation, general refuse generated from workers.

1. Introduction

1.1 Background of the Project

- 1.1.1 Black & Veatch (hereinafter called the “ET”) was appointed by Hong Kong Jockey Club (hereinafter called the "Project Proponent") to undertake Environmental Monitoring and Audit (EM&A) for “Proposed Extension of Public Golf Course at Kau Sai Chau Island, Sai Kung” (hereinafter called the “Project”). Under the requirements of Section 4 of Environmental Permit EP-224/2005, EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the EM&A Manual, environmental monitoring of air quality, water quality, terrestrial and marine ecology, landscape and visual, archaeology (watching brief) and land contamination are required for the Project.
- 1.1.2 This is the second quarterly EM&A report which summarises the environmental monitoring and audit works for the Project in the second quarter of 2006 from April to June 2006.

2. Project Information

2.1 Background

2.1.1 The Project comprises the following major components:

- Construction of a third 18-hole public golf course on the east side of the island, south of the existing golfing area;
- A new irrigation lake to collect surface runoff from new 18-hole golf course. Water stored at the new irrigation lake can also be diverted to existing reservoir for tertiary treatment and recycling;
- A new desalination plant adjacent to the existing pier to serve as an additional irrigation water supply for the new golf course during dry season; and
- Expansion of existing administration and maintenance buildings.

2.1.2 The potential environmental impacts of the Project have been studied in the Environmental Impact Assessment (EIA) report (EIAO Register No. AEIAR- 091/2005). The EIA was approved on 14th November 2005 under the EIAO. An Environmental Permit (EP-224/2005) was granted on 28th November 2005.

2.2 Site Description

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

2.3 Project Organization

2.3.1 Project organization and lines of communication are shown in **Figure 1.2**.

2.4 Construction Programme

2.4.1 The tentative construction programme for the Project is presented in **Annex A**. The construction works were commenced on 16th January 2006 and are scheduled to be completed by end of July 2007.

2.5 Summary of EM&A Requirements

2.5.1 The EM&A programme requires environmental monitoring for air quality, water quality, terrestrial and marine ecology, landscape and visual, archaeology (watching brief) and land contamination. The EM&A requirements for each parameter are described in subsequent sections, including:

- All monitoring parameters;
- Action and Limit Levels for all environmental parameters;
- Event and Action Plans; and
- Environmental mitigation measures, as recommended in the project EIA final report.

Monitoring Parameters and Locations

- 2.5.2 24-hour TSP was the monitoring parameter for dust monitoring. One location for monitoring air quality was identified.
- 2.5.3 The water quality parameters which need to be monitored are as follows:
- Marine water quality (9 monitoring locations) - dissolved oxygen (DO), temperature, turbidity, suspended solids (SS), pH and salinity
 - Freshwater water quality (7 monitoring locations) - dissolved oxygen (DO), temperature, turbidity, suspended solids (SS) , pH and salinity
- 2.5.4 Additional marine and freshwater water quality monitoring parameters for the impact monitoring during construction include nitrate nitrogen (NO₃-N), nitrite nitrogen (NO₂-N), ammonia nitrogen (NH₃-N), total phosphate (TP) and selected pesticides.
- 2.5.5 Additional water quality monitoring at Tai Tau Chau FCZ (TTC), Kai Lung Wan FCZ (KLW), Kau Sai FCZ (KS), downstream of the existing marsh (M_Marsh), marine water of Port Shelter (M_Coral), existing reservoir (F_Inland M) and Control stations (M_A and M_B) shall be carried out after heavy rain storm or when there is an overflow event from the reservoir, irrigation buffer lake or detention ponds/tanks. The heavy rain storm shall be defined when there is an amber/red/black rainstorm warning signal issued by the Hong Kong Observatory.
- 2.5.6 Aquatic fauna and integrity of stream buffer zone at Streams A, B and C were identified to monitor the potential land formation impact on terrestrial ecology especially stream courses. For coral monitoring, there were one control and three impact monitoring locations were identified to monitor the marine construction activities.
- 2.5.7 Watching Brief (archaeology) monitoring locations are identified at the cut areas of Holes 2, 11, 12, 14, 15 & 16.
- 2.5.8 The monitoring locations for air, water, ecology and watching brief (archaeology) are depicted in **Annex B**.

Monitoring Methodology and Calibration Details

- 2.5.9 All monitoring works were conducted and monitoring equipment was regularly calibrated in accordance with the EM&A Manual. Calibration records were shown in the monthly EM&A reports for April to June 2006.

Environmental Quality Performance Limits (Action and Limit Levels)

- 2.5.10 The environmental quality performance limits, i.e. Action and Limit Levels (AL Levels) were derived from the baseline monitoring results and make reference to EIA report and latest EPD monitoring data. If the measured environmental quality parameters exceed the AL Levels, the respective action plan would be implemented. The AL Levels for each environmental parameter are given in **Annex C**.

3. Monitoring Result & Site Audit

3.1 Air Quality

3.1.1 Graphical presentation of the trend of the monitoring results of 24-hour TSP is provided in **Annex D**. All measured 24-hour TSP in the reporting quarter was below the Action and Limit (AL) Levels except on 4th Apr 2006 which exceeded the action level.

3.2 Water Quality

3.2.1 Graphical presentations of the trends of the monitoring results of water quality are provided in **Annex D**. Twenty-third action level and thirty-two limit level exceedances were recorded for marine water quality during the reporting quarter. Thirteen action level and sixty-one limit level exceedances was recorded for stream courses quality during the reporting quarter.

3.3 Ecology

3.3.1 No work was approached to the Stream B & C, the riparian vegetation of Stream B and C was in natural conditions similar to the condition during the Baseline Survey. For Stream A, rocks were washed from Stream A2 near Hole 17 and filled the downstream of Stream A within the buffer zone area after the several rainstorm events occurred in June 2006.

3.3.2 Additional three month monitoring was carried out in April, May and June 2006 at Site B2, Site C and Control Site during the reporting quarter. No exceedance and incident report was recorded. Minor sedimentation on some corals was recorded. Damaged corals were repaired and recently deposit boulders were removed at the temporary baring point in mid-May 2006. No mortality, sedimentation and bleaching was recorded at Site C and Control Site for corals during the reporting quarter.

3.4 Landscape and Visual

3.4.1 The only landscape resource change during the site clearance work is the loss of scrubland. As the construction progress, more vegetation and shrubs will be cleared, which will be followed by planting works. Vegetation clearance work is being carried out at present. Tree protection is satisfactory. Stockpiles of cleared vegetation were found stored on site and require removal. The Contractor was reminded to rectify the mal-pruning practice of the transplanted trees and maintain all transplanted trees in good health condition. In addition, the Contractor was also reminded to replant the dead hydroseeding grass (mainly due to fungi infection) on the bare slope area near Contractor's site office, Hole 1 and Hole 3.

3.5 Archaeology (Watching Brief)

3.5.1 No watching brief was carried out during the reporting quarter. No further excavation was carried out at Hole 2. For Holes 11, 12, 14-16, no work progress was recorded during the reporting quarter.

3.6 Land Contamination

3.6.1 The Contamination Assessment Report (CAR) and Remediation Action Plan (RAP) are now under preparing by the Contractor.

4. Environmental Audit

4.1 Implementation Status of Environmental Mitigation Measures

- 4.1.1 The major works at construction site were (i) bulk excavation at Holes 1-5, 8-9 and 17-18, (ii) erection and operation of concrete batching plant at Hole 2 and (iii) land formation for desalination plant near existing KSC pier.
- 4.1.2 The Contractor has provided mitigation measures on site to control silty runoff during the reporting quarter. Silt fence implemented along the site boundary (major component of the temporary drainage system), rock bunds, a wastewater treatment plant at Hole 1, cut-off drains at Holes 1 (not fully function) & 17 and sedimentation basins at Holes 1, 17 & 18 were provided.
- 4.1.3 For dust suppression, the Contractor was providing mainly at Hole 9 (with water sprayer) during rock breaking activities. Other areas were not provided sufficient dust suppression measures during the rock breaking activities and unloading/loading activities. Watering of haul road was observed during the site audit.
- 4.1.4 During the site audit after rain, the settlement pit (collection of wastewater for recycle) provided within the concrete batching plant was insufficient and wastewater discharged to the marine water was observed. According to the submitted layout plan for the concrete batching plant, the wastewater from settlement pit will be pumped to the sedimentation columns for sedimentation and the water will be reused for wheel washing purpose. The settled sludge will be dried out in the dry pit area and used as a fill material if the quality is suitable. The Contractor was reminded to implement sufficient temporary drainage in early June 06 but no cut-off drains and peripheral drainage along the concrete batching plant was observed during this reporting month.
- 4.1.5 No dredging work has been carried out near to the existing pier for the desalination plant pipelines.
- 4.1.6 The sewage treatment plant was started to operate at the end of May 2006. No approved/valid water discharge licence(s) for this project was submitted by the Contractor for record during the reporting quarter.
- 4.1.7 Hydroseeding was observed at part of Holes, 1, 3 & 18 of bare/exposed slopes. Some of them were dead and should be replaced or provided with other means of mitigation measures to prevent silty runoff.
- 4.1.8 Vegetation and construction waste stockpiles were observed on site without proper disposal. No chemical storage area was available on site.
- 4.1.9 Stream buffer zone at Stream A and part of Stream B (tributary B2) have been demarcated to prevent any works/equipment intrusion. No work was approach to Streams B and C during the reporting quarter.
- 4.1.10 The Temporary Drainage Master Plan had been submitted by the Contractor to HKJC and RE in June 06 during this reporting quarter. The monitoring results indicated that the temporary drainage implemented on site was still insufficient.
- 4.1.11 Summary of implementation status is provided in **Annex E**.

4.2 Status of Environmental Licensing and Permitting

4.2.1 Valid environmental licenses and permits for the project during the reporting quarter are summarised in **Annex F**.

4.3 Advice on Solid and Liquid Waste Management Status

4.3.1 The solid waste generated from the construction site was mainly dry vegetation after clearance and general refuse. For general refuse, it was collected by a licensed collector regularly. For the disposal of construction waste, no recorded of disposal was submitted by the Contractor during the reporting quarter. Construction waste and vegetation were not disposed properly and stockpile on site at Hole 2. The Contractor was repeatedly reminded to dispose the vegetation and construction waste as soon as possible.

5. Non-compliance (Exceedances) of the Environmental Quality Performance Limits (Action and Limit Levels)

5.1 Air Quality

5.1.1 One non-compliance of 24-hr TSP was recorded at air monitoring location GCA B1 during the reporting quarter.

5.2 Water Quality

5.2.1 Rainstorm events occurred on 24th April, 28th April, 3rd May, 2nd June, 9th June and 13th June 2006 during the reporting quarter. The marine water exceedances were summarised in **Table 5.2-2**.

Table 5.2-1 Marine Water Exceedance Summary Apr - Jun 2006

Monitoring Station	Exceedance Level	Date	Parameters	Project-related
KLW	Limit Level	24-Apr-2006	SS	No
KLW	Limit Level	19-May-2006	SS, Turbidity	No
KLW	Action Level	9-Jun-2006	SS	No
KS	Limit Level	24-Apr-2006	SS	No
KS	Action Level	3-May-2006	SS	No
KS	Action Level	19-May-2006	SS, Turbidity	No
M_BP	Limit Level	24-Apr-2006	SS, Turbidity	Yes
M_BP	Limit Level	28-Apr-2006	SS, Turbidity	Yes
M_BP	Action Level	29-May-2006	Turbidity	No
M_BP	Limit Level	2-Jun-2006	SS, Turbidity	Yes
M_BP	Limit Level	9-Jun-2006	SS, Turbidity	Yes
M_Coral	Action Level	3-May-2006	Turbidity	Yes
M_Coral	Action Level	19-May-2006	SS, Turbidity	Yes
M_Coral	Action Level	24-May-2006	SS, Turbidity	Yes
M_Coral	Action Level	2-Jun-2006	SS, Turbidity	Yes
M_Coral	Action Level	9-Jun-2006	SS, Turbidity	Yes
M_Marsh	Limit Level	24-Apr-2006	SS, Turbidity	Yes
M_Marsh	Limit Level	28-Apr-2006	SS, Turbidity	Yes
M_Marsh	Limit Level	3-May-2006	SS, Turbidity	Yes
M_Marsh	Action Level	24-May-2006	SS	Yes
M_Marsh	Action Level	29-May-2006	Turbidity	No
M_Marsh	Limit Level	2-Jun-2006	SS, Turbidity	Yes
M_Marsh	Limit Level	9-Jun-2006	SS, Turbidity	Yes
M_RO1	Action Level	19-May-2006	SS	No
M_RO1	Action Level	9-Jun-2006	SS, Turbidity	No
TTC	Limit Level	24-Apr-2006	SS, Turbidity	Yes
TTC	Action Level	28-Apr-2006	Turbidity	Yes
TTC	Limit Level	28-Apr-2006	SS	Yes
TTC	Action Level	3-May-2006	Turbidity	Yes
TTC	Limit Level	3-May-2006	SS	Yes
TTC	Limit Level	19-May-2006	Turbidity	Yes
TTC	Limit Level	19-May-2006	SS	Yes
TTC	Action Level	24-May-2006	Turbidity	Yes
TTC	Action Level	29-May-2006	Turbidity	No
TTC	Limit Level	2-Jun-2006	SS, Turbidity	Yes
TTC	Limit Level	9-Jun-2006	SS, Turbidity	Yes

Freshwater

5.2.1 The freshwater water exceedances were summarised in **Table 5.2-2**.

Table 5.2-2 Freshwater Exceedance Summary April – Jun 2006

Monitoring Station	Exceedance Level	Date	Parameters	Project-related
F DA	Limit Level	27-Mar-2006	SS, Turbidity	Yes
F DA	Action Level	29-Mar-2006	Turbidity	Yes
F DA	Limit Level	29-Mar-2006	SS	Yes
F DA	Action Level	31-Mar-2006	Turbidity	Yes
F DA	Limit Level	31-Mar-2006	SS	Yes
F DA	Limit Level	10-Apr-2006	Turbidity	Yes
F DA	Limit Level	10-Apr-2006	SS	Yes
F DA	Action Level	24-Apr-2006	DO	Yes
F DA	Limit Level	24-Apr-2006	pH	Yes
F DA	Limit Level	24-Apr-2006	SS, Turbidity	Yes
F DA	Limit Level	28-Apr-2006	SS, Turbidity	Yes
F DA	Limit Level	3-May-2006	SS, Turbidity	Yes
F DA	Limit Level	8-May-2006	Turbidity	Yes
F DA	Action Level	19-May-2006	SS	Yes
F DA	Limit Level	19-May-2006	Turbidity	Yes
F DA	Limit Level	24-May-2006	SS, Turbidity	Yes
F DA	Limit level	29-May-2006	SS, Turbidity	Yes
F DA	Limit level	2-Jun-2006	SS, Turbidity	Yes
F DA	Limit level	8-Jun-2006	SS, Turbidity	Yes
F DA	Limit level	9-Jun-2006	SS, Turbidity	Yes
F DA	Limit level	13-Jun-2006	Turbidity	Yes
F DA	Action Level	21-Jun-2006	Turbidity	Yes
F DB	Limit Level	27-Mar-2006	SS	No
F DB	Action Level	4-Apr-2006	Turbidity	No
F DB	Limit Level	4-Apr-2006	SS	No
F DB	Limit Level	6-Apr-2006	SS	No
F DB	Limit Level	10-Apr-2006	Turbidity	No
F DB	Limit Level	24-Apr-2006	SS, Turbidity	No
F DB	Action Level	28-Apr-2006	SS, Turbidity	No
F DB	Action Level	3-May-2006	Turbidity	No
F DB	Limit Level	3-May-2006	SS	No
F DB	Limit Level	2-Jun-2006	Turbidity	No
F DC	Limit Level	27-Mar-2006	SS	No
F Inland M	Action Level	10-Apr-2006	SS	No
F Inland M	Limit Level	10-Apr-2006	Turbidity	No
F Inland M	Action Level	12-Apr-2006	SS	No
F Inland M	Limit Level	12-Apr-2006	Turbidity	No
F Inland M	Limit Level	24-Apr-2006	DO, pH	Yes
F Inland M	Limit Level	24-Apr-2006	SS, Turbidity	Yes
F Inland M	Limit Level	28-Apr-2006	SS, Turbidity	Yes
F Inland M	Limit Level	3-May-2006	SS, Turbidity	Yes
F Inland M	Limit Level	8-May-2006	Turbidity	Yes
F Inland M	Limit Level	19-May-2006	SS, Turbidity	Yes
F Inland M	Limit Level	19-May-2006	Turbidity	Yes
F Inland M	Limit Level	24-May-2006	SS, Turbidity	Yes
F Inland M	Limit Level	29-May-2006	SS, Turbidity	Yes
F Inland M	Limit Level	2-Jun-2006	SS, Turbidity	Yes
F Inland M	Action Level	8-Jun-2006	SS	Yes
F Inland M	Limit Level	8-Jun-2006	Turbidity	Yes
F Inland M	Limit Level	9-Jun-2006	SS, Turbidity	Yes

Monitoring Station	Exceedance Level	Date	Parameters	Project-related
F Inland M	Limit Level	13-Jun-2006	SS, Turbidity	Yes
F Inland M	Action Level	21-Jun-2006	SS	Yes
F Inland M	Limit Level	21-Jun-2006	Turbidity	Yes

5.2.2 The exceedances recorded at Stream A were mainly attributed to insufficient temporary drainage system provided at the filling area of Hole 17 to Stream A2. No temporary drainage was provided to collect and divert the runoff from the temporary bridge located within the Stream A buffer zone during reporting quarter. Mitigation measures was provided at Stream A2 (rock fill) but not sufficient to cater for the silty runoff to Stream A.

5.2.3 The non-compliance was attributed to the works and therefore further action was required. The Contractor was reminded to improve and provide sufficient temporary drainage system and treatment facilities on site before water discharge to marine and stream water.

5.2.4 As no construction work was adjacent to the Stream B, Stream C and Kai Sai Fish Culture Zone, those exceedances were considered natural variation of the streams and considered not project-related.

5.3 Ecology

5.4.1 One non-compliance was recorded (rock filling at the Stream bed of Stream A) during the reporting quarter. No non-compliance was recorded for Stream B & C as no construction work was approach near to those areas. The non-compliance was attributed to the works and therefore further action was required. The Contractor was required to remove the boulders within the stream buffer zone area at the downstream end of Stream A by hand. No equipment was allowed entering to the stream buffer zone area to rectify the situation.

5.4.2 Additional three month coral monitoring was carried out during reporting quarterly. No exceedance or incident during the additional monitoring period at Site B2, Site C and Control Site. Damaged corals had been repaired and newly deposit boulders were carefully removed in mid- May 2006.

5.4 Summary of Environmental Complaint

5.4.1 One environmental complaint was received during the reporting quarter. Tai Tau Chau fish farmers expressed their concern about the silty runoff from the construction site and fish death issues to Hong Kong Jockey Club on 2nd June 2006 afternoon after the rainstorm event. Site investigation was carried out on 2nd June 2006 at Tai Tau Chau fish farm with Environmental Team (ET), Hong Kong Jockey Club (HKJC) and Contractor in the afternoon. Further site investigations on the water quality and fish death were carried out by AFCD, EPD and loss adjustor (Contractor) between 2nd and 5th June 2006. Kai Lung Wai fish farmers also raised their concern on the fish death on 3rd June 2006. Further site investigations on the water quality and fish death were carried out by AFCD, HKJC and loss adjustor (Contractor) between 3rd and 5th June 2006. The investigation report on the cause of the fish death is not available during the reporting quarter.

5.5 Summary of Environmental Summons

5.5.1 There was no notification of summons with respect to environmental issues registered in this reporting quarter.

6. Recommendations and Conclusions

- 6.1.1 This Quarterly Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken during the period from April to June 2006 in accordance with EM&A Manual and the requirement under EP-224/2005.
- 6.1.2 One exceedance of the Action Level was recorded for 24-hour TSP.
- 6.1.3 Water quality exceedances, suspended solids and turbidity, at marine and stream monitoring locations were mainly due to the heavy rainstorm events, insufficient temporary drainage system implemented and treatment facilities provided on site.
- 6.1.4 One non-compliance was recorded at Stream A. The Contractor was reminded to rectify the situation as soon as possible without using any equipment/machinery within the buffer zone. For Stream B & C, the riparian vegetation was in natural conditions similar to the condition during the Baseline Survey.
- 6.1.5 Additional three month coral monitoring was carried out during the reporting quarter. Minor sedimentation was recorded at Site B2 on some tagged corals. No exceedance or incident was recorded. For Site C and the Control Site, the tagged corals still remained similar conditions as during the Baseline Survey. No mortality, sedimentation or bleaching was found on the tagged corals in these two sites.
- 6.1.6 Vegetation clearance work is being carried out at present. Tree protection is satisfactory. Stockpiles of cleared vegetation were found stored on site and require removal. The Contractor was reminded to proper dispose the vegetation stockpiles and construction waste. The Contractor was reminded to rectify the mal-pruning practice of the transplanted trees and maintain all transplanted trees in good health condition. In addition, the Contractor was also reminded to replant the dead hydroseeding grass (mainly due to fungi infection) on the bare slope area near Contractor's site office, Hole 1 and Hole 3.
- 6.1.7 Environmental non-compliance on silty water discharge (mainly from the freshwater inland marsh) was recorded during the site audit. One environmental complaint and no environmental summons/prosecutions were received during the reporting period since the commencement of the Project.
- 6.1.8 The ET will keep track of the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.