

**Central Reclamation, Phase III
Quarterly EM&A Report No. 18
(November 2007 through January 2008)**

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ACL	Atkins China Limited
AL	Action Level
CEDD	Civil Engineering and Development Department
CRIII	Central Reclamation Phase III
DO	Dissolved Oxygen
EIA	Environmental Impact Assessment
EIAO	Environmental Impact Assessment Ordinance
EM&A	Environmental Monitoring and Audit
EPD	Environmental Protection Department
ER	Engineer's Representatives
ET	Environmental Team
IEC	Independent Environmental Checker
LCSD	Leisure and Cultural Services Department
LCSVO-JV	Leighton China State Van Oord Joint Venture
LL	Limit Level
PLA	People's Liberation Army Forces Hong Kong
TDD	Territory Development Department
TSP	Total Suspended Particulates
SS	Suspended Solids
WMP	Waste Management Plan

Not Used

Executive Summary

The Central Reclamation Phase III (CRIII) Works, Contract No. HK 12/02, was awarded to Leighton China State Van Oord Joint Venture (LCSVO-JV) by the Civil Engineering and Development Department (CEDD). (Previously called the Territory Development Department before merger with the Civil Engineering Department on 1st July 2004.)

The works under the Contract HK 12/02 commenced on 28th February 2003. Contract HK 16/03 for the CRIII Hinterland Drainage Improvement Works was awarded to Wang Kee Construction Co. Ltd., and works for this contract commenced on 17th December 2003.

Atkins China Limited (ACL) has been commissioned by CEDD as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme described in the approved EM&A Manual for the CRIII Project.

This is the 18th quarterly EM&A Report for the works specified in Section 1.3 of the CRIII EIA Report. This report summarises the monitoring results and audit findings of the EM&A program during the reporting period from 1st November 2007 to 31st January 2008.

Environmental Monitoring and Audit Progress

Air quality, noise and water quality monitoring were conducted during this quarter. Weekly environmental site inspections were also conducted during this reporting quarter.

Exceedance of Action and Limit Levels

No exceedance in TSP level was recorded at the two monitoring stations during this reporting quarter.

One noise exceedance was recorded at the City Hall monitoring station in this reporting quarter. The exceedance has been investigated and was considered to have been attributed to other external factors and unlikely to be related to project works.

Water quality exceedances were recorded on 15 sampling days in this reporting quarter. The exceedances have been investigated and were considered to be attributed to other external factors and unlikely to be related to project works.

Complaint Log

There were no complaints received in relation to environment impact during this reporting quarter.

Notifications of Summons and Prosecutions

There were no notifications of summons or prosecutions received during this reporting quarter.

Site Inspection and Audit

Weekly environmental site inspections were carried out during this quarter. Minor deficiencies noted during the site inspections were rectified by the Contractor upon receipt of notification.

Not Used

1. INTRODUCTION

1.1 Basic Project Information

The Main Works Contract HK 12/02 for CRIII commenced on 28th February 2003 and was awarded to Leighton-China State-Van Oord Joint Venture (LCSVO-JV) for the construction of the CRIII Engineering Works. The main construction works that were identified in the EIA Report for the Project, requiring environmental monitoring and audit, have commenced.

This is the 18th quarterly EM&A Report for the works specified in Section 1.3 of the CRIII EIA Report. This report summarises the monitoring results and audit findings of the EM&A program during the reporting period from 1st November 2007 to 31st January 2008.

The Contractor's works programme for the quarter is provided in **Annex E**.

1.2 Project Organisation and Management Structure

Atkins China Limited (ACL) has been commissioned by CEDD as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme described in the approved EM&A Manual and required under Clause 4 of the Variation of Future Environmental Permit (No. EP-01/122/2003/A) issued to Leighton-China State-Van Oord Joint Venture in December 2007 for the CRIII Project. An Independent Environmental Checker (IEC) has been employed to audit the EM&A programme.

The CRIII Project Organisation is shown in **Annex A**.

1.3 Works Undertaken

The works undertaken in the project area requiring environmental monitoring and audit as identified in the EIA Report (not including Chai Wan Basin) during this reporting quarter include:

- Dredging in FRAW;
- Rockfilling for the seawall mound in FRAW and placement seawall blocks;
- Reclamation filling in FRAW;
- Placement of seawall blocks in FRAE
- Rockfilling in FRAE;
- Pile cap construction for Public Pier East (Pier No.10);
- Preservation works at Queen's Pier;
- Excavation of temporary drainage channel at the former Star Ferry;
- Remedial and outstanding works at and around Piers 7 & 8 and the CTB;
- Remedial and outstanding works at Public Pier West;
- Remedial and outstanding works at MYS Footbridge;
- General filling works above +2.5 mPD in IRAE;
- Construction of storm and foul drainage in hinterlands for Road P2, Road D7, Road D8 and Road D9 and adjacent to the GPO;
- Reinstatement of existing Culvert J;
- Temporary works and excavation for Road P2 Underpass;
- Pipe jointing associated with the stabilisation of the U-Trap structure;
- Roadworks along Lung Wui Road and Tim Wa Avenue (Road) D8;
- Demolition of former pump stations at CR-18;
- Temporary works, excavation and piling for Culvert F extension; and
- Temporary works and excavation for Culvert K extension.

2. EM&A REQUIREMENTS

2.1 Summary of Impact EM&A Requirements

The EM&A programme requires environmental monitoring for air quality, noise, waster quality, waste management and landscape and visual aspects as specified in the CRIII Project EIA. The EM&A requirements for each issue area are described in subsequent sections including:

- All required monitoring parameters;
- Action and Limit Levels; and
- Event-Action Plans.

A summary of impact EM&A requirements is presented in **Table 2-1**.

Table 2.1 - Summary of Impact EM&A Requirements

Parameters	Descriptions	Locations	Frequencies	Duration
TSP	24-Hour TSP	2 Locations	Once every 6 days	During dust generating construction works
	1-Hour TSP	2 Locations	Three times in every 6 days	During dust generating construction works
Noise	Leq (30 mins), L ₁₀ , L ₉₀ .	1 Location	Continuous measurements	Two weeks before Construction and During Construction
Water Quality	Dissolved Oxygen; Salinity; Temp; Suspended Solids; Turbidity.	16 Locations	3 times a week, Mid-ebb/flood tides	During Marine Works and for 4 weeks after completion of Marine Works
Waste	On-Site Waste Audit	Active Work Sites	Periodically	During Construction
	On-Site Waste Inspection			
Landscape and Visual	Audits to ensure effective implementation of mitigation measures			During Construction
General Site Conditions	Environmental Site Inspection	Works areas and areas affected by works	Periodically	During Construction

2.2 Environmental Quality Performance Limits

Environmental Quality Performance Limits for air quality, noise and water quality have been established as part of the Baseline Monitoring Report and are provided in **Annex B**.

2.3 Event Action Plan

Event Action Plans for air quality, noise and water quality have been developed as part of the Baseline Monitoring Report and are provided in **Annex C**.

3. ENVIRONMENTAL STATUS

3.1 Implementation of Environmental Measures

The Contractor has implemented relevant mitigation measures listed in the EIA Report, EM&A Manual and Further Environmental Permit.

3.2 Environmental Monitoring Locations

Drawings showing the project area and locations of the monitoring stations are provided in **Annex D**.

3.3 Air Quality Monitoring Results

The graphical plot of air quality monitoring results for this reporting quarter is provided in **Annex F**.

3.4 Noise Quality Monitoring Results

The graphical plot of noise monitoring results for this reporting quarter is provided in **Annex G**.

3.5 Water Quality Monitoring Results

The graphical plot of water quality monitoring results for this reporting quarter is provided in **Annex H**.

3.6 Solid and Liquid Waste Management Status

Solid and liquid waste management was implemented according to the Waste Management Plan during this reporting quarter.

3.7 Landscape and Visual Audit

As the works undertaken during this reporting quarter were mainly related to reclamation, buildings and infrastructure works, the landscape and visual impacts are considered to be minimal.

Not Used

4. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

4.1 Environmental Exceedances

No exceedance in TSP level was recorded at the two monitoring stations during this reporting quarter.

One noise exceedance was recorded at the City Hall monitoring station on 14th January 2008. On 14th January 2008, there were Ceremonial Opening of the Legal Year 2008 activities in front of the City Hall during the exceedances period. The exceedances have been investigated and were considered to be attributed to other external factors and unlikely to be related to project works.

Exceedances of water quality were recorded on 15 sampling days in this reporting quarter. Exceedances of the Action Limit for DO were recorded on 7 of the sampling days. Exceedances of the Action Limit for SS were recorded on 8 of the sampling days. Exceedances of the Limit Level for SS were recorded on 4 of the sampling days. All exceedances have been investigated and were not considered to have been directly related to project works as no marine works nor run-off from the site were observed during the monitoring days. The exceedances could be attributed to natural variation in ambient conditions and other external factors rather than the project works. The water quality exceedances during this reporting quarter is summarised in **Table 4.1**.

Table 4.1 - Summary Water Quality Exceedances From November 2007 to January 2008

Date	Tide	Parameter	Exceedance	Station
2 nd Nov 07	Mid-ebb	DO	AL	M1A, M2A, M3_M5A, M4B and M5B
	Mid-flood	SS	AL	M3_M5A
7 th Nov 07	Mid-ebb	SS	AL	M3_M5A and M5B
9 th Nov 07	Mid-flood	SS	AL	M12
12 th Nov 07	Mid-flood	SS	LL	M6 and M12
14 th Nov 07	Mid-flood	DO	AL	M12
16 th Nov 07	Mid-ebb	DO	AL	M1A, M2A, M3_M5A, M4B, M5B and M11
21 st Nov 07	Mid-flood	SS	AL	M6
14 th Dec 2007	Mid-ebb	DO	AL	M1A, M2A, M4B, M5B, M6, M11 and M12
	Mid-flood	DO	AL	M1A, M2A, M3_M5A, M4B, M5B, M6, M11 and M12
21 st Dec 2007	Mid-ebb	SS	LL	M11
27 th Dec 2007	Mid-flood	SS	AL	M6
31 st Dec 2007	Mid-ebb	DO	AL	M1A, M2A, M3_M5A, M4B, M5B, M6, M11 and M12
	Mid-flood	DO	AL	M1A, M2A, M3_M5A, M4B, M5B, M6, M11 and M12
2 nd Jan 2008	Mid-ebb	DO	AL	M6 and M12
		SS	AL	M6
	Mid-flood	DO	AL	M2A, M3_M5A, M4B, M5B, M6, M11 and M12
4 th Jan 2008	Mid-ebb	DO	AL	M6
23 rd Jan 2008	Mid-flood	SS	AL	M6
			LL	M12

Date	Tide	Parameter	Exceedance	Station
30 th Jan 2008	Mid-flood	SS	AL	M6
			LL	M12

A statistical analysis (presented in **Annex I**) of the suspended solids monitoring results found that the quarterly mean is significantly less than 1.3 times of the ambient mean recorded during the baseline period. This indicates that the Project construction works did not cause adverse impacts during the reporting period with respect to the baseline condition.

4.2 Non-Compliance

No environmental non-compliances were reported in this quarter.

4.3 Summary of Actions Taken by the Contractor

The Contractor has implemented the following measures to prevent air and water quality impacts:

- Contractor has implemented their Drainage Management Plan to Control Site Run-off for the wet season – actions completed and underway include: repair and improvement of existing bunds/sandbags on the edge of the reclamation; installation of additional bunds; compaction of soil surface and pathing where possible to prevent erosion, creation of drainage channels and soak pits.
- Provision a single *WetSep* flocculation based water treatment plant and additional settlement tanks to remove suspended solids from discharge waters;
- Provision of catch pits to collect spill over from wheel washing facilities; increased frequency of cleaning of catch-pits;
- Water browsing of haul roads and other areas of the site and covering of stockpiles.

4.4 Environmental Enquiries

No environmental enquiries were received during this reporting quarter.

4.5 Environmental Complaints and Prosecutions

No environmental complaints were received during this reporting quarter.

4.6 Record of Environmental Complaints and Summons & Prosecutions

There was no record of environmental complaints during this reporting quarter.

There were no notifications of summons and prosecutions during this reporting quarter.

5. CONCLUSION

During the environmental site inspections conducted within this reporting quarter, no non-compliances were noted and no prosecutions were received during this reporting quarter.

No exceedance in TSP level was recorded at the two monitoring stations during this reporting quarter.

One noise exceedance was recorded at the City Hall monitoring station on 14th January 2008. There were Ceremonial Opening of the Legal Year 2008 activities in front of the City Hall during the exceedances period on that day. The exceedances have been investigated and were considered to be attributed to other external factors and unlikely to be related to project works.

Exceedances of water quality were recorded on 15 sampling days in this reporting quarter. Exceedances of the Action Limit for DO were recorded on 7 of the sampling days. Exceedances of the Action Limit for SS were recorded on 8 of the sampling days. Exceedances of the Limit Level for SS were recorded on 4 of the sampling days. All exceedances have been investigated and were not considered to have been related to project works. The exceedances could be attributed to natural variation in ambient conditions and other external factors rather than the project works.