

**Central Reclamation, Phase III
Quarterly EM&A Report No. 28
(May 2010 through July 2010)**

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Abbreviations & Acronyms

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

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 28th 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 May 2010 to 31st July 2010.

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.

Additional water quality monitoring was conducted, since 14th December, for the “the water quality of embayment area between the eastern seawall and the Hong Kong Convention and Exhibition Centre (HKCEC) upon completion of eastern seawall”, in accordance with the Environmental Permit No. EP-01/122/2003/D Condition 3.9.

The water quality monitoring conducted by the ET was changed, as approved by EPD, since 11th January 2010, from 8 stations to 3 stations.

Exceedance of Action and Limit Levels

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

10 exceedances in noise level was recorded at the City Hall monitoring station on 12th, 13th, 22nd and 24th May 2010; 2nd June 2010 and 17th July 2010. All the noise exceedances were considered to be attributed by the extension work at Hong Kong Planning and Infrastructure Exhibition Gallery rather than the project works. As such, the noise exceedances are considered to be attributed by external factors and unlikely to be related to project works.

Water quality exceedances were recorded on 18 sampling days in this reporting quarter. All exceedances have been investigated. All exceedances of Action/Limit Level for DO were considered to have not been related to the Project works. The exceedance of Action Level for SS was considered to have not been related to the 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. The observations and findings are outlined below:

6th May 2010

Tarpaulin was not properly covering the cement bags. The Contractor had placed the tarpaulin properly immediately.

13th May 2010

N.A.

20th May 2010

N.A.

27th May 2010

N.A.

3rd June 2010

N.A.

10th June 2010

The plug for one of the drip trays at IRAE was missing.

The Contractor was reminded to provide clear labelling for waste sorting at Culvert F.

17th June 2010

The drip tray with missing plug IRAE was removed.

No rubbish was found at Culvert F.

24th June 2010

N.A.

30th June 2010

The drums of chemical were found without drip tray near the sub-contractor office at FRAW area. The contractor was reminded to provide the drip tray for chemicals/fuel temporary storage.

The stagnant water was found at the works area under the Man Yiu Street Footbridge. The contractor was reminded to remove the stagnant water properly and spray the larvicide regularly to prevent the mosquito breeding.

8th July 2010

According to contractor's record, the larvicide sprays regularly to prevent the mosquito breeding.

Executive Summary

15th July 2010

N.A

22nd July 2010

N.A

29th July 2010

N.A

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 28th 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 May 2010 to 31st July 2010.

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 Further Environmental Permit (No. EP-01/122/2003/A) issued to Leighton-China State-Van Oord Joint Venture in December 2007 for the CRIII Project. A variation of the Further Environmental Permit for the Project (EP-01/122/2003/B) and (EP-01/122/2003/C) were granted on 26 May 2008 and 17 July 2009. This was then superseded by another variation of Further Environmental Permit for the Project (EP-01/122/2003/D) granted on 1 September 2009. 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:

- Type A filling in FRAW and FRAE above +2.5mPD
- General filling works above +2.5mPD in IRAE
- Surcharging in FRAW and FRAE
- Construction of cantilever slab at caisson
- Pile cap and base slab construction at Culvert F
- Construction of storm and foul drainage and gullies in hinterlands for Road P2, Road D7, and Road D9
- Construction of watermains at Road D7
- Road P2 Underpass ramp structures
- Precasting for retaining wall (offsite)
- Installation of cooling water mains for Tamar Development Project
- Installation of cooling mains discharge pipes in FRAE
- Diaphragm wall and barrettes for CWB Works
- Excavation to formation level at CWB works
- Construction of CWB structure
- Disposal of material off-site to Government fill banks

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	L _{eq} (30 mins), L _{eq} (15 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.	Since 11 th January 2010 3 Locations ⁽¹⁾	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

Note ⁽¹⁾ Seawater Intake M01A, M04B and land based Monitoring Station "Culvert F" was monitored since 11th January 2010

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**.

The additional water quality monitoring results, since 14th December 2009, for the “the water quality of embayment area between the eastern seawall and the Hong Kong Convention and Exhibition Centre (HKCEC) upon completion of eastern seawall”, in accordance with the Environmental Permit No. EP-01/122/2003/D Condition 3.9, are presented in **Annex I**.

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.

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.

10 exceedance in noise level was recorded at the City Hall monitoring station on 12th, 13th, 22nd and 24th May 2010; 2nd June 2010 and 17th July 2010. All the noise exceedances were considered to be attributed by the extension work at Hong Kong Planning and Infrastructure Exhibition Gallery rather than the project works. As such, the noise exceedances are considered to be attributed by external factors and unlikely to be related to project works.

Water quality exceedances were recorded on 18 sampling days in this reporting quarter. All exceedances have been investigated. All exceedances of Action/Limit Level for DO were considered to have not been related to the Project works. The exceedance of Action Level for SS was considered to have not been related to the Project works.

Table 4.1 - Summary Water Quality Exceedances from May 2010 to July 2010

Date	Tide	Parameter	Exceedance	Station
Water Quality Monitoring in Accordance with EM&A Manual				
28 th May 2010	Mid-flood	DO	AL	M4B
7 th June 2010	Mid-ebb	DO	AL	M1A
	Mid-flood	DO	AL	M1A and M4B
11 th June 2010	Mid-ebb	DO	AL	M4B
	Mid-flood	DO	AL	M4B
15 th June 2010	Mid-flood	DO	AL	M4B
21 st June 2010	Mid-flood	DO	AL	M4B
23 rd June 2010	Mid-flood	DO	AL	M4B
25 th June 2010	Mid-flood	DO	AL	M4B
28 th June 2010	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
30 th June 2010	Mid-ebb	DO	AL	M4B
	Mid-flood	DO	AL LL	M1A M4B
2 nd July 2010	Mid-flood	DO	AL	M4B
7 th July 2010	Mid-flood	DO	LL	M4B
14 th July 2010	Mid-flood	DO	AL	M1A
16 th July 2010	Mid-flood	DO	AL	M1A
21 st July 2010	Mid-flood	DO	AL	M4B
		SS	AL	M1A
23 rd July 2010	Mid-flood	DO	AL	M1A and M4B
26 th July 2010	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
28 th July 2010	Mid-flood	DO	AL	M1A and M4B
	Mid-ebb	DO	AL	M1A

	Mid-flood	DO	AL	M1A and M4B
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A statistical analysis (presented in **Annex J**) 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.

No exceedances in additional DO water monitoring were recorded during the reporting period.

4.2 Non-Compliance

No non-compliance with regard to site environmental audit was recorded during the reporting period.

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 paths where possible to prevent erosion, creation of drainage channels and soak pits;
- Provision of additional settlement tanks to remove suspended solids from discharge waters;
- Provision of catch pits to collect spill over from wheel washing facilities and increased frequency of cleaning of catch-pits; and
- 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.

10 exceedance in noise level was recorded at the City Hall monitoring station on 12th, 13th, 22nd and 24th May 2010; 2nd June 2010 and 17th July 2010. All the noise exceedances were considered to be attributed by the extension work at Hong Kong Planning and Infrastructure Exhibition Gallery rather than the project works. As such, the noise exceedances are considered to be attributed by external factors and unlikely to be related to project works.

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No exceedances in additional DO water monitoring were recorded during the reporting period.

