

**Contract No. : EP/SP/52/06**  
**Development of EcoPark in Tuen Mun Area 38**

**ENVIRONMENTAL MONITORING AND AUDIT**

**MONTHLY EM&A REPORT for**

**September 2010**

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## **APPROVAL SHEET**

DOCUMENT DATE: 10 October 2010

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**EXECUTIVE SUMMARY**

This is the fifty-one monthly Environmental Monitoring and Audit (EM&A) Report for the Environmental Protection Department Contract No. EP/SP/52/06 entitled “Development of EcoPark in Tuen Mun Area 38”. (Environmental Permit No. EP-226/2005/A).

This report contains the results and findings of site inspection activities and EM&A works carried out by the Environmental Team (ET) of the Works Contractor as required in the contract during September 2010.

The site activities in the reporting period mainly consisted of excavation and site formation works and construction of drainage in Phase II construction site.

Several environmental issues, such as the housekeeping issues, stagnant water in drip tray of chemical storage and other construction materials, and road A near construction site exit was covered with dirt and dust, have been identified by ET during weekly site inspections in the reporting month. Contractor has implemented some mitigation measures to address those problems as advised by ET. Some of the measures taken by the contractor were considered as effective to minimize negative impact to the environment. On-going investigation will be carried out to observe performance and effectiveness of those measures. Outstanding environmental items will be inspected in the following month.

There was no LFG monitoring required as all excavation pits are filled since February 2010. The construction noise permit was expired on 18<sup>th</sup> of July, 2010.

There were no notifications of summons or successful prosecution during September 2010.

Planned activities for September 2010 with regard to development of Ecopark consist of:

- 1) Site formation works, and
- 2) Road formation works.

## **1. BASIC PROJECT INFORMATION**

### **1.1 Introduction**

This is the fifty-one monthly Environmental Monitoring and Audit (EM&A) Report for the Environmental Protection Department Contract No. EP/SP/52/06 entitled “Development of EcoPark in Tuen Mun Area 38”. The site layout plan is shown in Appendix 1. The report was prepared by the Environmental Team, Environmental Pioneers & Solutions Limited, of the Works Contractor, Kaden Construction Limited. The report is to be submitted to the Works Contractor, the Engineer and the Environmental Protection Department for the project.

This report presents the results of the environmental monitoring of the project activities conducted during the month of September 2010. This included regular site inspections once per week for verification of implementation of the mitigation measures as recommended in the EM&A Manual and the Contractor’s Environmental Management Plan (EMP).

The construction works of Phase I have already commenced in July 2006 and have been completed in November 2008.

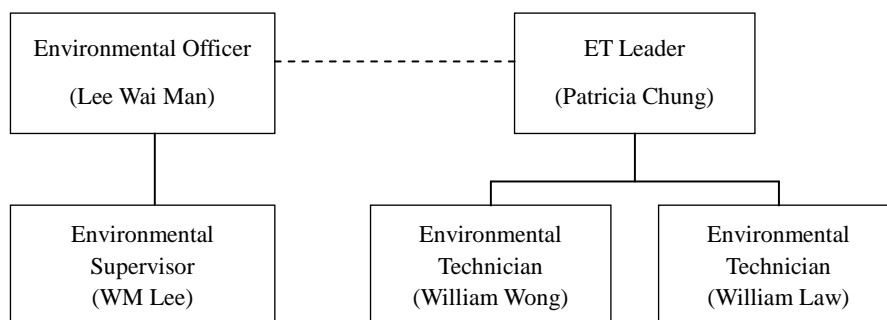
The construction works of Phase II commenced in December 2008 and is anticipated to be completed in November 2010.

The contact person and telephone number of key personnel for the captioned project are shown in Appendix 2.

### **1.2 Project Organization and Management**

The Works Contractor has commissioned Environmental Pioneers & Solutions Limited as the Environmental Team, which comprises the environmental team leader and the environmental technicians to undertake the environmental monitoring and audit work for this project. The project Organization Chart of Environmental Team is shown in Figure 1.1.

Figure 1.1 Organization Chart of Environmental Team



## 2. SUMMARY OF WORK ACTIVITIES AND CONSTRUCTION STATUS

### 2.1 Works Undertaken during the Month

A summary of the site installation works in this month, with the information of locations, activities, equipment/materials and dates of occurrence, is provided by the Contractor, as shown in Table 2.1.

Table 2.1 Work Activities for September 2010		
Item	Work Activities & Location	Date of Occurrence
1	Site formation works	01 September 2010 – 30 September 2010
2	Road Formation works	01 September 2010 – 30 September 2010

Machineries		
	Equipment/ Plant	Quantity
1	Mobile Crane	0
2	Excavator	0
3	Generator	1
4	Air Compressor	1
5	Roller	0
6	Loader	1
7	Grab Lorry	0
8	Crane Lorry	0
9	Water Truck	1
10	Dump Truck	1

**Remarks:**

- As informed by the Contractor, most equipment is mobile at site subject to work progress.
- Refer to Appendix 1 – Site layout plan for location of construction activities.

## 2.2 Future Key Issues

The Contractor has provided an updated construction program in Table 2.2 to show the planned activities for the coming month (October 2010). The anticipated environmental issues are summarized as follow:

Table 2.2 Construction Program and Anticipated Environmental Issues		
Item	Works	Anticipated Environmental Issues
1	Site formation works and road works	<ul style="list-style-type: none"> <li>- Generation of C&amp;D waste should be reused as much as practicable.</li> <li>- Dust may be generated; the wheel washing machine should be in operation.</li> <li>- Haul road should be sprayed regularly, by truck or sprinkler.</li> <li>- Stagnant water should be removed.</li> <li>- Mosquito mitigation measures should be implemented.</li> </ul>

The site inspection schedule for the next month (October 2010) is designated on 7<sup>th</sup>, 14<sup>th</sup>, 21<sup>st</sup> and 28<sup>th</sup> of October 2010.



### **3. STATUS OF ENVIRONMENTAL PROTECTION AND SITE INSPECTIONS**

#### **3.1 Environmental Site Inspections**

Environmental site inspections are required to inspect the construction activities of the Development of EcoPark in order to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented. Regular site inspections should be carried out by the ET once per week during construction phase.

Outstanding issues at the end of August 2010 includes:

1. Road A near construction site exit is covered with dirt and dust. Contractor was reminded to manually wash the vehicles leaving the construction site before the automatic wheel washing machine is repaired or replaced. This issue is anticipating to close on 31<sup>st</sup> October, 2010.
2. Waste and materials were found scattered near contractor site office. Contractor was reminded to clean up the construction site and keep good site housekeeping practice. This issue was closed on 2<sup>nd</sup> September, 2010.
3. Dirt and dust trail observed at entrance of P10. Contractor was reminded to instruct workers and drivers to properly wash construction vehicles before leaving construction site. This issue is anticipating to close on 31<sup>st</sup> October, 2010.

Site inspections for Phase II construction site were conducted on 2<sup>nd</sup>, 9<sup>th</sup>, 16<sup>th</sup> and 30<sup>th</sup> of September 2010.

A detailed checklist of each site inspection together with comments, relevant photos and maps have been filed and kept.

The findings and results of site inspections are provided in Table 3.1:

Table 3.1 Summary of Site Inspections for Phase II construction site during September 2010				
Date	Observations	Advice from ET	Action taken	Closing Date
09 October 09 to 31 August 10	Road A near construction site exit is covered with dirt and dust.	Contractor was reminded to manually wash the vehicles leaving the construction site before the automatic wheel washing machine is repaired or replaced.	Site entrance was relocated to Lot 10 facing Road A.	To be followed in the next reporting month. (Tentative closing date: 31 October 2010)
5 August 10 to 31 August 10	Waste and materials were found scattered near contractor site office.	Contractor was reminded to clean up the construction site and keep good site housekeeping practice.	Contractor took action to remove the waste and unused materials	02 September 2010
26 August 10 to 30 September 10	Dirt and dust trail observed at entrance of P10.	Contractor was reminded to instruct workers and drivers to properly wash construction vehicles before leaving construction site.	--	To be followed in the next reporting month. (Tentative closing date: 31 October 2010)
09 September 10 to 30 September 10	Accumulated water has been observed in drip tray in chemical storage area.	Contractor was reminded to clear the stagnant water regularly to prevent overflowing of oil and fuel.	Contractor took action in removing stagnant water in drip tray in chemical storage area.	To be followed in the next reporting month. (Tentative closing date: 31 October 2010)
09 September 10	General and construction waste was found collected in some construction equipment in P10.	Contractor was reminded to instruct workers to perform daily cleaning and segregate recyclables from general waste for disposal.	Contractor took immediate action to instruct workers for a site cleanup.	16 September 2010
09 September 10	Accumulated water was found collected in various construction materials.	Contractor was reminded to remove the stagnant water, turn over the materials to prevent water collection and apply proper mosquito prevention measures.	Contractor took action in removing stagnant water and applied larvae killer for mosquito prevention.	16 September 2010
30 September 10	Poor housekeeping was observed outside of Contractor's site office.	Contractor was reminded to instruct workers to organize and place material and equipment properly to improve housekeeping on site.	--	To be followed in the next reporting month. (Tentative closing date: 31 October 2010)

### 3.2 Air Dust

Excavation work is being carried out in Phase II construction site. Dust problem may be

arisen when stockpiles of excavated materials are not enclosed, covered or dampened during dry or windy conditions. Dust suppression measures such as water spraying have been observed in the reporting month.

### 3.3 Noise

The major noise source was vehicle movement and machinery in the EcoPark. Since the nearby NSRs were remote, the noise impact was minimal. There was no specific observation noted regarding noise issue. The Contractor has obtained the Construction Noise Permit on 19 Jan 2010 and it was expired on 18 Jul 2010. There are no more overnight construction works planned, so the Construction Noise Permit is no longer required.

### 3.4 Surface Water Quality

Since there was no water discharge at manhole, the Contractor removed the silt curtain installed at discharge point on 4 April 2007, as agreed by the Engineer's Representative. Muddy water was observed at discharge point for Phase I construction site on 14 August 2009. The contractor was reminded to consider using a silt curtain if the discharge continues. As informed by Engineer's Representative, there was no direct water discharge at manhole in Phase II construction site. No muddy water discharge is expected.

Chemical toilets (1 nos.) have been provided in Phase II construction site by a licensed contractor, of which sewage generated, is collected every three to five days without causing contamination on surface water. The Effluent Discharge License was issued to the Contractor on 20 November 2006.

The temporary storage tank was used to store the effluent of aerobic wastewater treatment system and the stored effluent was pumped away regularly. As checked by the ET, there was no effluent discharge into the storm water drain. To avoid any sewage

overflow, frequent checking is required after the commencement of Phase II construction works.

### 3.5 Visual and Landscape Impact

Nil.

### 3.6 Waste / Chemical Waste

The Contractor implemented visual inspection and distributed flyers/ notices to ensure all dump trucks have mechanical covers closed when leaving EcoPark site.

Separate waste collection bins were made available for collecting aluminum cans, waste paper and plastic bottles etc. The Contractor has provided the revised site layout plan for refuse collection points as shown in Appendix 3.

Waste dumpsters were used for the collection and storage of general waste. Temporary storage areas for waste metals and waste tires were established in Phase I construction site. For Phase II construction site, a designated refuse collection point has been established and location is shown in Appendix 3.

Excavated materials are reused as back-fill material to balance cut and fill and hence reduce the generation of materials. Surplus materials are returned to stock in centralized area with suitable protective measures. The Contractor was reminded to comply with the requirements and conditions for disposal at public fill facility and all oversized aggregates should be crushed to less than 250mm before delivering to the public fill.

Materials are recycled and re-used at site as much as practicable to minimize waste generation. Timbers are recycled to make temporary tools and access ladders etc. Excavated rocks, concrete and asphalts are stored for future re-use in land formation and structural construction etc.

Registered waste collectors will be arranged to collect and transport the wastes whenever necessary.

Table 3.4 provides a summary table of waste disposal in September 2010. The Contractor has been reminded to keep good record at site in order to have a clear presentation of waste disposal.

Table 3.4 Summary of Waste Disposal in September 2010			
Type of Waste	Disposal Site	Quantity	Remarks
General Waste	WENT Landfill	10.70 tonnes	-
Inert C&D Material	Public Fill Facility	36.7 tonnes*	-

\*Note: Excavated soil and concrete unable to back filled.

### 3.7 Landfill Gas

There was no LFG monitoring required as all excavation pits are filled since February 2010.

Table 3.5 Action Levels, Limit Levels and Event and Action Plan for LFG (From EM&A Manual)		
Parameter	Level	Action
Oxygen	Action Level < 19% O <sub>2</sub>	Ventilate trench/ void to restore O <sub>2</sub> to >19%
	Limit Level < 18% O <sub>2</sub>	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore O <sub>2</sub> to > 19%
Methane (CH <sub>4</sub> )	Action Level >10% LEL	Post "No Smoking" signs Prohibit hot works Increase ventilation to restore CH <sub>4</sub> to <10% LEL
	Limit Level >20% LEL	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore CH <sub>4</sub> to <10% LEL
Carbon	Action Level >0.5% CO <sub>2</sub>	Ventilate to restore CO <sub>2</sub> to < 0.5%

Dioxide (CO <sub>2</sub> )	Limit Level >1.5% CO <sub>2</sub>	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore CO <sub>2</sub> to < 0.5%
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#### 4. SUMMARY OF ENVIRONMENTAL PERMIT AND LICENCES

ET has checked with the Contractor for the status of all environmental permits and licenses for this project as at September 2010, which is summarized in Table 4.1. ET will follow the application process of the outstanding permits / licenses and will provide suitable assistance whenever appropriate.

Table 4.1 Summary of Environmental Permits/Licences				
<b>Description</b>	<b>License / Permit No.#</b>	<b>Date of Issue</b>	<b>Date of Expiry</b>	<b>Status/Remarks</b>
Environmental Permit	EP-226/2005/A	9-Sep-2005	--	Issued
Registration of Waste Producer	5111-421-K2869-02	27-Jul-2006	--	Issued
Construction Noise Permit	GW-RW0012-10	19-Jan-2010	18-Jul-2010	*Expired
Effluent Discharge Licence	EP760/421/011762/I	20-Nov-2006	1-Dec-2011	Issued

\*Note: Construction Noise Permit for overnight works was no longer required.

#### 5. CUMULATIVE LOG OF COMPLAINTS AND REMEDIAL ACTION

The cumulative log of complaints is referred in Appendix 4.

#### 6. CUMULATIVE LOG OF NOTIFICATION OF SUMMONS AND PROSECUTIONS

No notification of summons and no prosecutions occurred during September 2010.

## 7. CONCLUSION

There is no summon nor prosecutions reported during September 2010.

Several environmental issues, such as the housekeeping issues, stagnant water in drip tray of chemical storage and other construction materials, and road A near construction site exit was covered with dirt and dust, have been identified by ET during weekly site inspections in the reporting month. Contractor has implemented some mitigation measures to address those problems as advised by ET. Some of the measures taken by the contractor were considered as effective to minimize negative impact to the environment. On-going investigation will be carried out to observe performance and effectiveness of those measures. Outstanding environmental items will be inspected in the following month.

The Contractor has been using the waste management and record system including allocation of waste storage areas and the trip ticket system as proposed in the Environmental Management Plan.

There was no LFG monitoring required as all excavation pits are filled since February 2010. The construction noise permit has been expired on 18<sup>th</sup> of July, 2010.

The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirement.



The site plan for EcoPark Phase II includes the following labeled areas and features:

- Electrical Sub-stations**: Located in the upper central part of the plan.
- Tenant Lot T7**: Located in the upper left corner.
- Road D**: A horizontal road on the left side.
- Road C**: A horizontal road below Road D.
- Marine Front Management Office**: Located on the left side, near Road C.
- W2b**, **W4**, **W1**, **W2a**, **W5**: Various buildings or structures labeled with 'W' and numbers/letters.
- Site Office**: Located near the top right.
- Road F**: A road near the Site Office.
- Administrative Building**: Located near the Site Office.
- Site Entrance at Road A**: Located on the right side.
- Phase II site exit / entrance**: Located on the right side, near Road A.
- Road A**: A road on the right side.
- Road E**: A road on the right side, below Road A.
- Road B**: A road at the bottom right.
- Lateral Drainage Reserve**: Located at the bottom right.
- Oil and Chemical Waste Storage Area**: Located in the lower left quadrant.
- Site Entrance and Exit**: Located in the lower center.
- EcoPark Phase II**: The central area of the plan, shaded with diagonal lines.

**APPENDIX 2 - THE CONTACT PERSONS, TELEPHONE NUMBERS OF KEY PERSONNEL FOR DEVELOPMENT OF ECOPARK IN TUEN MUN AREA 38**

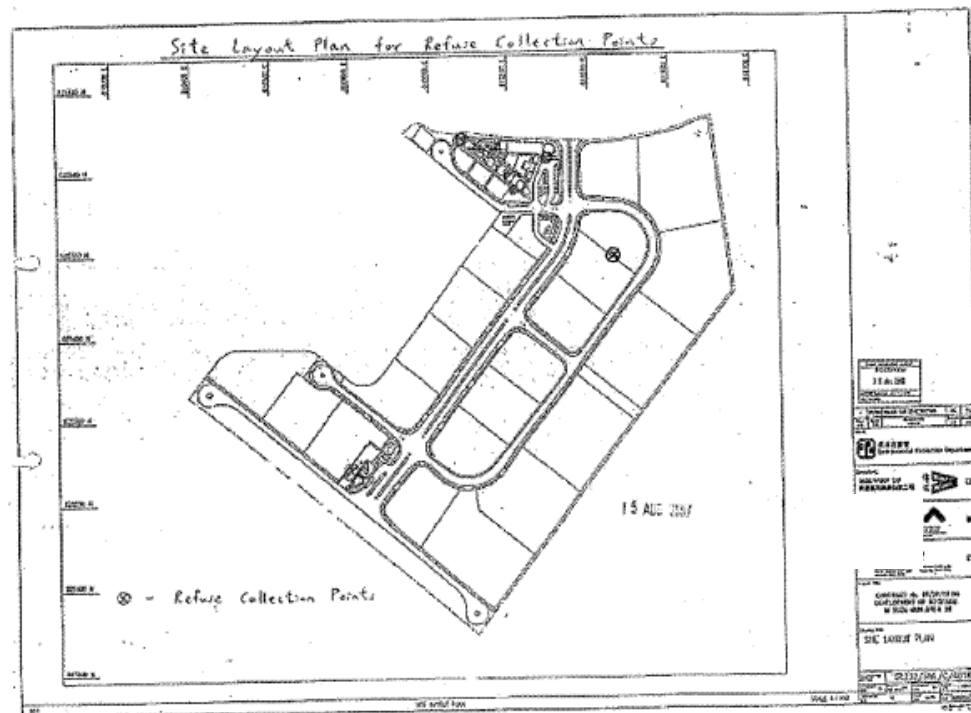
<b>Company/Department</b>	<b>Name</b>	<b>Position</b>	<b>Telephone</b>
Scott Wilson Ltd.	Harold Insley	Independent Environmental Checker	2410 3858
Scott Wilson Ltd.	Mr. Andy Cheung	Resident Engineer	6111 9703
Scott Wilson Ltd.	Mr. T W Wong	Inspector	6111 9705
Kaden Construction Limited	Mr. K M Book	Project Manager	9193 8680
Kaden Construction Limited	Mr. Stephen Leung	Section Agent	9071 7657
Environmental Pioneers & Solutions Limited	Miss. Patricia Chung	Environmental Team Leader	2965 0888
Environmental Pioneers & Solutions Limited	Mr. William Law	Environmental Technician	2965 0882
Environmental Pioneers & Solutions Limited	Mr. Ronan Chan	Environmental Technician	2965 0881

### APPENDIX 3 – REVISED SITE LAYOUT PLAN FOR REFUSE COLLECTION POINTS

Development of EcoPark in Tuen Mun Area 38

Contract No. EP/SP/52/06  
EM&A Report No. 30 (December 2008)

#### APPENDIX 3 – REVISED SITE LAYOUT PLAN FOR REFUSE COLLECTION POINTS



**APPENDIX 4 – CUMULATIVE LOG OF COMPLAINTS****CUMULATIVE LOG OF COMPLAINTS**

<b>Environmental Parameters</b>	<b>No. of Outstanding Complaints</b>	<b>No. of complaints received in September 2010</b>	<b>Cumulative no. of complaints received since the commencement of project</b>
Air	0	0	2
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	2

**DETAILS OF COMPLAINTS AND REMEDIAL ACTIONS**

<b>Log Ref.</b>	<b>Date of Complaint received</b>	<b>Location</b>	<b>Complainant /Date</b>	<b>Details of Complaint</b>	<b>Investigation /Mitigation Action</b>	<b>Investigated by/ Date</b>
-	-	-	-	-	-	-