

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

ENVIRONMENTAL MONITORING AND AUDIT

MONTHLY EM&A REPORT for

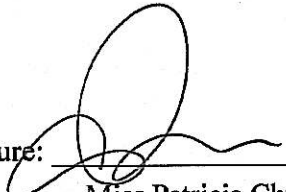
October 2008

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APPROVAL SHEET

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Date: 17-11-2008

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EXECUTIVE SUMMARY

This is the twenty-eighth 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).

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 October 2008.

The site activities in the reporting period mainly consisted of landscaping works and finishing works, fitting outs and building services installation for administration building.

Contractor suggested that the idle tanks at Chemical Waste Storage Area would be used again in the Phase 2 construction and they are advised to keep those tanks in good condition. In addition, housekeeping issues such as improper placing of oil and chemical tanks, construction tools and materials have been observed along Road F (outside site office). Contractor was reminded to keep an eye on those housekeeping issues. Furthermore, contractor was reminded to clear full refuse storage container at the end of Road F by licensed collector regularly, action taken as advised. Outstanding items will be inspected in the following month.

The Contractor has used the temporary storage tank 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 stormwater drain.

Landfill gas monitoring has been stopped since 23 July because the excavation works were completed. Monitoring works will resume when there are any excavation works carried out on site.

There were no notifications of summons or successful prosecution during October 2008.

The planned activities for November 2008 with regard to development of EcoPark consist of:

- 1) Finishing Works, Fitting Outs and Building Services
- 2) Installation for Administration Building.
- 3) Landscaping Works

1. BASIC PROJECT INFORMATION

1.1 Introduction

This is the twenty-eighth 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 October 2008. 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).

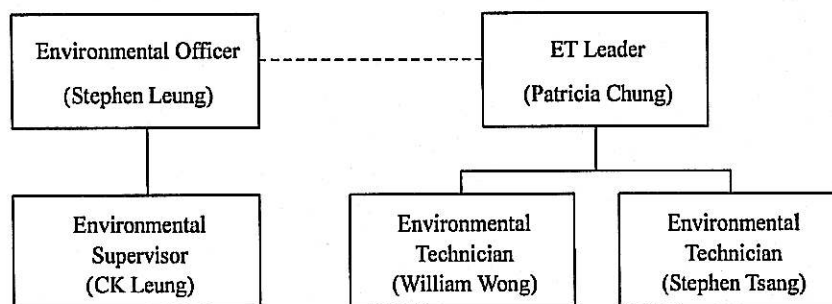
Phase 1 of the construction works has already commenced in July 2006 and is anticipated to complete on November 2008.

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.

Item	Work Activities & Location	Date of Occurrence
1	Landscaping works	1 Oct 2008 – 31 Oct 2008
2	Finishing works, fitting outs & building services installation for administration building	1 Oct 2008 – 31 Oct 2008

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

Remarks:

- As informed by the Contractor, most equipment are 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 (November 2008). The anticipated environmental issues are summarized as follow:

Item	Works	Anticipated Environmental Issues
1	Finishing works, fitting outs & building services installation for administration building	- Generation of waste from packaging materials and C&D wastes
2	Landscaping Works	- Dust may be generated; the wheel washing should be in operation - Stagnant water should be removed - Mosquito mitigation measures should be implemented - Stockpiles of excavated material should be covered with tarpaulin sheet

The site inspection schedule for the next month (November 2008) is designated on 7, 14, 21 and 28 of November 2008.

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.

Site inspections were conducted on 3, 10, 17, 23 and 31 of October 2008.

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:

Date	Observations	Advice from ET	Action taken	Closing Date
Oct 08	Idle chemical storage tanks found along Road A	Contractor was reminded to keep chemical storage tanks in good condition.	Action taken as advised.	3 Oct 2008
3 Oct 08 17 Oct 08	Tanks storing diesel and chemicals have been observed at the end of road F.	Contractor was reminded to re-locate the tanks in designated areas with proper drip pan.	To be observed in next reporting month.	--
3 Oct 08 10 Oct 08 23 Oct 08 31 Oct 08	Rocks, trolleys and construction materials have been observed outside site office (along Road F).	Contractor was reminded to keep good housekeeping on site and cover stockpiles with proper tarpaulin.	To be observed in next reporting month.	--
17 Oct	Refuse storage container at the end of Road F was full.	The contractor was reminded to clear them up when it is full.	Refuse was cleared from site by licensed collector regularly.	23 Oct 2008

3.2 Air Dust

Excavation work at Road F near site office was finished and the site exit at Road F was closed. There was no specific dust impact observed on site.

3.3 Noise

The major noise source was vehicle movement, 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 07 August 2007 but it had been expired on 28 Feb 2008.

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. No muddy water was observed at discharge point.

Chemical toilets (3 nos.) have been provided 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.

3.5 Visual and Landscape Impact

Hoarding was erected at the site egress and aligned along the site boundary along Lung Mun Road. Hoardings were specially designed to be movable for future re-use in other locations.

During site clearance, trees were relocated and to be replanted for landscaping in the future in EcoPark.

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 dumpers were used for the collection and storage of general waste. Temporary storage areas for waste metals and waste tyres were established.

The Contractor has provided sufficient drip trays for all temporary electricity generators at site. These drip trays should be covered by tarpaulin sheet to minimize rainfall accumulation.

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 October 2008. The Contractor has been reminded to keep good record at site in order to have a clear presentation of waste disposal.

Type of Waste	Disposal Site	Quantity	Remarks
General Waste	WENT Landfill	0 tonnes	-
Inert C&D Material	Public Fill Facility	15.28 tonnes	-

3.7 Landfill Gas

Landfill gas monitoring was stopped since 23 July due to excavation works completed. Measurement results are within the Action / Limit Levels in accordance with the EM&A Manual, as shown in Table 3.6. LFG monitoring would be conducted for any excavation of 1 m depth or more in the future.

Parameter	Level	Action
Oxygen	Action Level < 19% O ₂	Ventilate trench/ void to restore O ₂ to > 19%
	Limit Level < 18% O ₂	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore O ₂ to > 19%
Methane (CH ₄)	Action Level >10% LEL	Post "No Smoking" signs Prohibit hot works Increase ventilation to restore CH ₄ to <10% LEL
	Limit Level >20% LEL	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore CH ₄ to <10% LEL
Carbon Dioxide (CO ₂)	Action Level >0.5% CO ₂	Ventilate to restore CO ₂ to < 0.5%
	Limit Level >1.5% CO ₂	Stop works Evacuate personnel/prohibit entry Increase ventilation to restore CO ₂ to < 0.5%

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 October 2008, 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.

Description	License / Permit No.#	Date of Issue	Date of Expiry	Status/Remarks
Environmental Permit	EP-226/2005	9-Sept-2005	--	Issued
Registration of Waste Producer	5111-421-K2869-02	27-Jul-2006	--	Issued
Construction Noise Permit	GW-RW0402-07	07-Aug-2007	28-Feb-2008	Expired
Effluent Discharge Licence	EP760/421/011762/I	20-Nov-2006	1-Dec-2011	Issued

5. CUMULATIVE LOG OF COMPLAINTS AND REMEDIAL ACTION

The cumulative log of complaints is referred in Appendix 5.

6. CUMULATIVE LOG OF NOTIFICATION OF SUMMONS AND PROSECUTIONS

No notification of summons and no prosecutions occurred during October 2008.

7. CONCLUSION

There is no summon nor prosecutions reported during October 2008.

Effluent of aerobic wastewater treatment system was temporarily stored in the storage tank and pumped away: As checked by the ET, there was no effluent discharge into the stormwater drain.

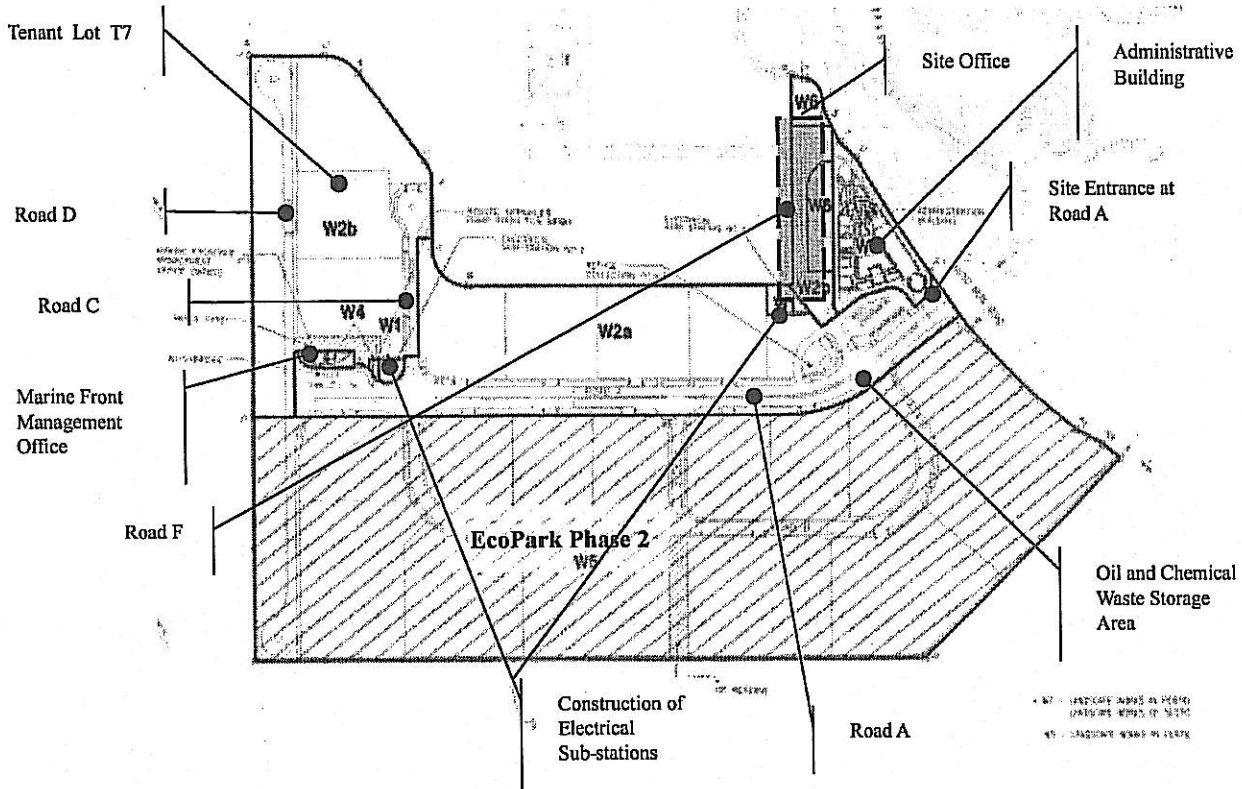
Contractor suggested that the idle tanks at Chemical Waste Storage Area would be used again in the Phase 2 construction and they are advised to keep those tanks in good condition. In addition, housekeeping issues such as improper placing of oil and chemical tanks, construction tools and materials have been observed along Road F (outside site office). Contractor was reminded to keep an eye on those housekeeping issues. Furthermore, contractor was reminded to clear full refuse storage container at the end of Road F by licensed collector regularly, action taken as advised.

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.

Since the excavation works were completed, there was no landfill gas monitoring since 23 July.

Water accumulated in ditch, artificial ponds and manhole covers has to be drained away regularly to avoid mosquito breeding. Furthermore, regularly pest control measures are also needed to avoid mosquito and ant problems on site.

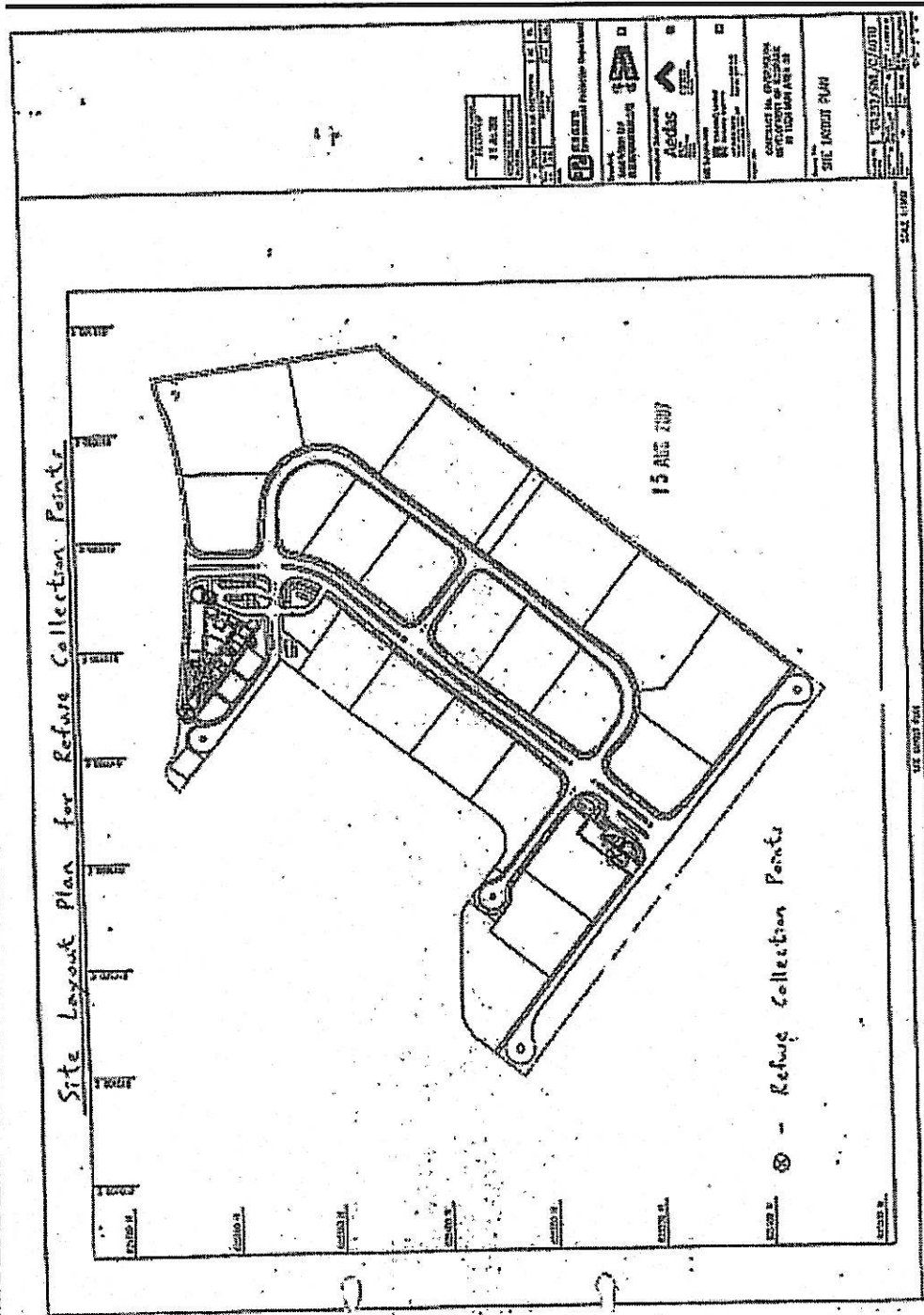
APPENDIX 1 - SITE LAYOUT PLAN



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

Company/Department	Name	Position	Telephone
Scott Wilson Ltd.	Harold Insley	Independent Environmental Checker	2410 3858
Scott Wilson Ltd.	Mr. Andy Cheung	Resident Engineer	6111 9703
Scott Wilson Ltd.	Mr. C S Lam	Senior Inspector of Works	9861 8011
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	2185 0123
Environmental Pioneers & Solutions Limited	Mr. William Wong	Environmental Technician	2185 0154
Environmental Pioneers & Solutions Limited	Mr. Stephen Tsang	Environmental Technician	2185 0172

APPENDIX 3 - REVISED SITE LAYOUT PLAN FOR REFUSE COLLECTION POINTS



APPENDIX 4 - ORIGINAL LANDFILL GAS FIELD MEASUREMENT RECORDING SHEETS

No landfill gas monitoring works was carried out during the reporting period.

APPENDIX 5 – CUMULATIVE LOG OF COMPLAINTS

CUMULATIVE LOG OF COMPLAINTS

Environmental Parameters	No. of Outstanding Complaints	No. of complaints received in October 2008	Cumulative no. of complaints received since the commencement of project
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

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