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

ENVIRONMENTAL MONITORING AND AUDIT MONTHLY EM&A REPORT for JUNE 2007

8/F, Chaiwan Industrial Centre Building 20 Lee Chung Street, Chaiwan, Hong Kong Tel: 2889 0569 Fax: 2856 2010

APPROVAL SHEET

DOCUMENT DATE: 30 June 2007	
Prepared and Certified by: ET Leade	er (Environmental Pioneers & Solutions Limited)
Signature: Miss Patricia Chung	_ Date:
Verified by: IEC	Date:

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EXECUTIVE SUMMARY

This is the twelfth monthly Environmental Monitoring and Audit (EM&A) Report for the Environmental Protection Department Contract No. EP/SP/52/06 entitled "Development of an 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 June 2007.

The site activities in the reporting period mainly consisted of site formation, excavation works, construction of administration building, marine front management office and drainage, sewerage and water mains and finishing works, fitting outs and building services installation for administration building and marine front management office.

Water spraying by water truck on site area for dust mitigation was observed.

The Contractor has removed mud found in the entrance of Road C and the junction between Road D and Road A and provided manual wheel washing at these site areas.

No substantial noise impact was noted by ET during weekly environmental site walks.

The Contractor has removed stagnant water found at the end of Road A.

Disposal of inert C&D material was recorded. The oil and chemical waste storage cabinets were relocated from Tenant Lot T11 to Tenant Lot T6 due to site construction in Lot T11.

Water was found accumulated at the bottom of oil and chemical waste storage cabinets and was required to be removed.

Landfill gas monitoring was carried out at site; measurement results on 6, 13, 20 and 28 June 2007 were within the Action and Limit Levels in accordance with the EM&A Manual

There were no notifications of summons or successful prosecution during June 2007.

The planned activities for July 2007 and August 2007 with regard to development of EcoPark consist of:

- 1) Excavation Works, Site Formation Works and Roadworks
- 2) Construction of Drainage, Sewerage and Water Mains
- 3) Construction of Administration Building
- 4) Construction of Marine Front Management Office
- 5) Finishing Works, Fitting Outs and Building Services Installation for Administration Building and Marine Front Management Office

1. BASIC PROJECT INFORMATION

1.1 Introduction

This is the twelfth monthly Environmental Monitoring and Audit (EM&A) Report for the Environmental Protection Department Contract No. EP/SP/52/06 entitled "Development of an 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 June 2007. 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).

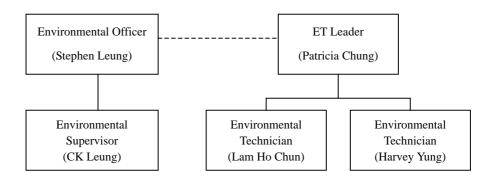
Phase 1 of the construction works has already commenced in July 2006 and is anticipated to complete in September 2007.

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	Table 2.1 Work Activities for June 2007				
Item	Work Activities & Location	Date of Occurrence			
1	Site formation works, excavation works & roadworks	1 June 2007 – 30 June 2007			
2	Construction of administration building and marine front management office	1 June 2007 – 30 June 2007			
3	Construction of drainage, sewerage & water mains	1 June 2007 – 30 June 2007			
4	Finishing works, fitting outs & building services installation for administration building & marine front management office	1 June 2007 – 30 June 2007			

	Machineries			
	Equipment/ Plant	Quantity		
1	Mobile Crane	2		
2	Excavator	14		
3	Generator	4		
4	Air Compressor	2		
5	Roller	4		
6	Loader	1		
7	Grab Lorry	1		
8	Crane Lorry	2		
9	Water Truck	1		
10	Dump Truck	2		

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 three months (July 2007 – September 2007). The anticipated environmental issues are summarized as follow:

Table	2.2 Construction Program a	and Anticipated Environmental Issues			
Item	Works	Anticipated Environmental Issues			
	Site formation works, excavation works & roadworks	 Generation of C&D Waste; excavated material should be reused as much as practicable Dust may be generated; the wheel washing machine should be in operation Haul road should be sprayed regularly, by truck or sprinkler Stagnant water should be removed Mosquito mitigation measures should be implemented 			
2	Construction of Administration Building and Marine Front Management Office	- Generation of waste from packaging materials and C&D wastes			
3	Construction of drainage, sewerage & water mains	 Generation of C&D Waste; excavated material should be reused as much as practicable Dust may be generated; the wheel washing machine should be in operation 			
4	Finishing works, fitting outs & building services installation for administration building & marine front management office	- Generation of waste from packaging materials and C&D wastes			

The site inspection schedule for the next month (July 2007) is designated on 4, 11, 18 and 25 July 2007.

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 6, 13, 20 and 28 June 2007.

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	Table 3.1 Summary of Site Inspections					
Date	Observations	Advice from ET	Outcome	Closing Date		
6, 13 June 07	Stagnant water was found at the end of Road A	To remove water in order to prevent mosquito breeding	Stagnant water was removed.	20 June 07		
- , -	Mud was found in the junction between Road D and Road A near Marine Front Management Office and at the entrance of Road C	To remove mud and establish manual wheel washing	Mud was removed and manual wheel washing was provided at Road C and the junction between Road D and Road A	20 June 07		
13 June 07	Due to site construction in Tenant Lot T11, the oil and chemical waste storage cabinets were removed	To relocate the oil and chemical waste storage cabinets	The oil and chemical waste storage cabinets were relocated to Tenant Lot T6.	20 June 07		
28 June 07	Water was found accumulated at the bottom of oil and chemical waste storage cabinets	To remove water and use tarpaulin sheet to cover the top of cabinets in order to prevent the accumulation of water after heavy rainfall	To be observed and inspected in the next reporting period			

3.2 Air Dust

Water spraying by water truck on site area such as Road A, Road C, Road D and unpaved site area beside marine front for dust mitigation was observed.

Excavation work at Road F near site office was finished and the site exit at Road F was closed. The site exit at Road A remained and manual wheel washing was used.

Mud was found in the junction between Road D and Road A near Marine Front Management Office and at the entrance of Road C. The Contractor rectified by removing mud and establishing manual wheel washing at Road C and the junction between Road D and Road A.

3.3 Noise

The major noise source was vehicle movement, machinery and rock excavation in the EcoPark. Since the nearby NSRs were remote, the noise impact was minimal. There was no specific observation noted regarding noise issue. The Construction Noise Permit was issued to the Contractor on 02 March 2007.

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 (5 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 Licence was issued to the Contractor on 20 November 2006.

Stagnant water was found at the end of Road A. The Contractor removed the water for preventing mosquito breeding.

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 to be replanted for landscaping in the future

in EcoPark.

3.6 Waste / Chemical Waste

Due to site construction in Tenant Lot T11, the oil and chemical waste storage cabinets

were removed. The Contractor relocated the cabinets to Tenant Lot T6.

Water was found accumulated at the bottom of oil and chemical waste storage cabinets

due to heavy rainfall. The Contractor was reminded to remove the water and use

tarpaulin sheet to cover the top of cabinets in order to prevent the accumulation of

water.

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 site layout plan for refuse

collection points as shown in Appendix 3.

Two 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 (4 nos.) temporary electricity

generators at site. These drip trays should be covered by tarpaulin sheet to minimize

rainfall accumulation.

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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 assess 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 June 2007. 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 June 2007					
Type of Waste Disposal Site Quantity Remarks					
General Waste	WENT Landfill	190 m^3	-		
Inert C&D Material	Public Fill Facility	$25,000 \text{ m}^3$	-		

3.7 Landfill Gas

Landfill gas (LFG) monitoring was carried out on site at six (6) locations, as instructed by the Engineer's Representative. LFG measurements on 6, 13, 20 and 28 June 2007 are summarized in Table 3.5, and original field measurement sheets with measurement locations are appended in Appendix 4. Measurement results are within the Action / Limit Levels in accordance with the EM&A Manual, as shown in Table 3.6.

Table 3.5 Summary of LFG Measurement for June 2007						
Sampling	Date of Measurement	Sampling Time	Weather Condition	Methane (CH ₄) %LEL	Carbon Dioxide (CO ₂) %LEL	Oxygen (O ₂)
Point A	06 June 07	1604	Fine	0.0%	0.0%	20.9%
Point B1	06 June 07	1620	Fine	0.0%	0.0%	20.9%
Point C1	Repealed					

Table 3.5 Summary of LFG Measurement for June 2007						
Sampling	Date of	Sampling	Weather	Methane	Carbon Dioxide	Oxygen (O ₂)
	Measurement	Time	Condition	(CH ₄) %LEL	(CO ₂) %LEL	
Point F	06 June 07	1611	Fine	0.0%	0.0%	20.9%
Point G	06 June 07	1608	Fine	0.0%	0.0%	20.9%
Point H	06 June 07	1614	Fine	0.0%	0.0%	20.9%
Point I	06 June 07	1612	Fine	0.0%	0.0%	20.9%
Point A	13 June 07	1557	Overcast	0.0%	0.0%	20.9%
Point B1	13 June 07	1610	Overcast	0.0%	0.0%	20.9%
Point C1				epealed		
Point F	13 June 07	1603	Overcast	0.0%	0.0%	20.9%
Point G	13 June 07	1600	Overcast	0.0%	0.0%	20.9%
Point H	13 June 07	1607	Overcast	0.0%	0.0%	20.9%
Point I	13 June 07	1605	Overcast	0.0%	0.0%	20.9%
Point A	20 June 07	1143	Sunny	0.0%	0.0%	20.9%
Point B1	20 June 07	1136	Sunny	0.0%	0.0%	20.9%
Point C1			Re	epealed		
Point F	20 June 07	1117	Sunny	0.0%	0.0%	20.9%
Point G	20 June 07	1122	Sunny	0.0%	0.0%	20.9%
Point H	20 June 07	1119	Sunny	0.0%	0.0%	20.9%
Point I	20 June 07	1132	Sunny	0.1%	0.0%	20.9%
Point A	28 June 07	1634	Rainy	0.0%	0.0%	20.9%
Point B1	28 June 07	1615	Rainy	0.0%	0.0%	20.3%
Point C1			Re	epealed		
Point F	28 June 07	1624	Rainy	0.0%	0.0%	20.9%
Point G	28 June 07	1630	Rainy	0.0%	0.0%	20.9%
Point H	28 June 07	1628	Rainy	0.0%	0.0%	20.9%
Point I	28 June 07	1625	Rainy	0.0%	0.0%	20.9%

Remarks:

¹⁾ The landfill gas measurements at Point C1 were repealed as there were no excavations of 1 meter depth or more.

²⁾ As agreed by the Engineer's Representative, the landfill gas measurements on June 2007 were carried out with two instruments: one for the measurements of methane and carbon dioxide, another for the measurement of oxygen.

Table 3.6 Ac	tion Levels, Limit Levels and	l Event and Action Plan for LFG (From				
EM&A Man	EM&A Manual)					
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	Action Level >0.5% CO ₂	Ventilate to restore CO_2 to $< 0.5\%$				
(CO ₂)	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 June 2007, 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						
Description	License / Permit	Date of	Date of	Status/Remarks		
	No.#	Issue	Expiry			
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-RW0080-07	02-Mar-2007	28-Aug-2007	Issued		
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 June 2007.

7. CONCLUSION

There is no summon nor prosecutions reported during June 2007.

Water spraying by water truck on site area was observed for dust mitigation. The Contractor has removed mud found in the entrance of Road C and the junction between Road D and Road A and provided manual wheel washing at these site areas.

The Contractor has removed stagnant water found at the end of Road A.

The oil and chemical waste storage cabinets were relocated from Tenant Lot T11 to Tenant Lot T6.

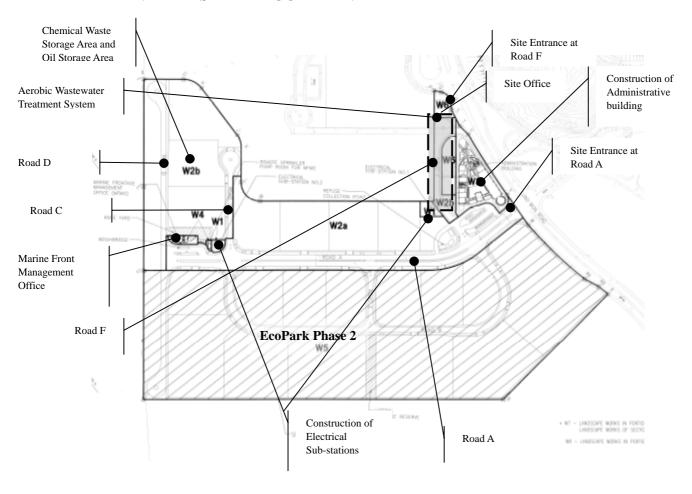
Water was found accumulated at the bottom of oil and chemical waste storage cabinets. The Contractor was reminded to remove water from the cabinets.

Daily landfill gas monitoring was carried out by the Contractor on site and measurement results were within Action and Limit levels in accordance with EM&A Manual.

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.

The Contractor was advised to pay more efforts on environmental concerns and awareness such as site tidiness and mosquito hazard from stagnant water at site.

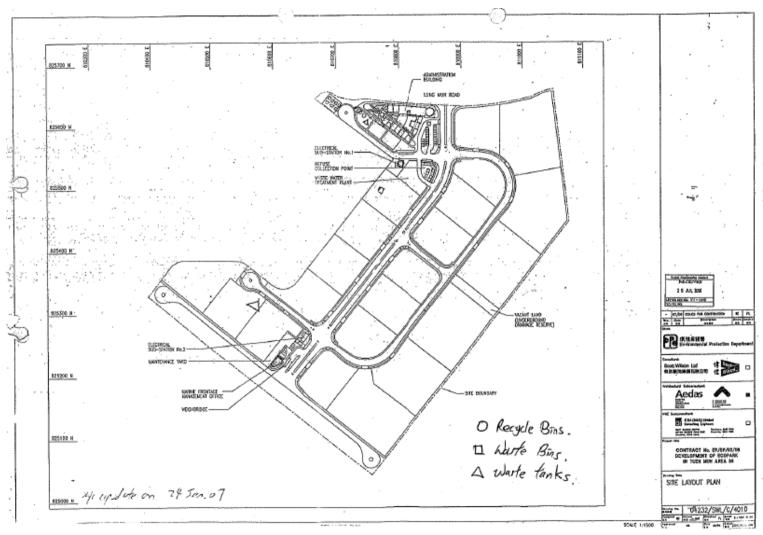
APPENDIX 1 - SITE LAYOUT PLAN



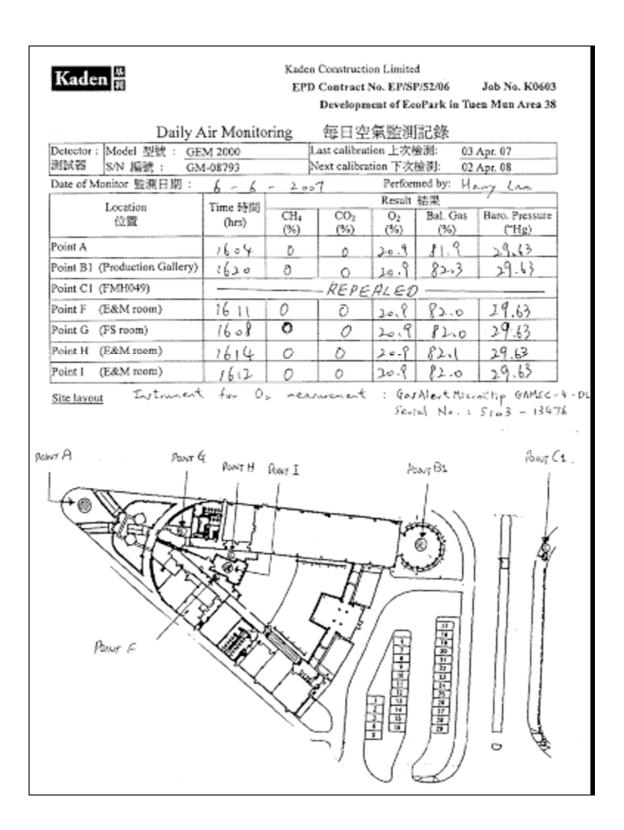
APPENDIX 2 - THE CONTACT PERSONS, TELEPHONE NUMBERS OF KEY PERSONNEL FOR DEVELOPMENT OF AN ECOPARK IN TUEN MUN AREA 38

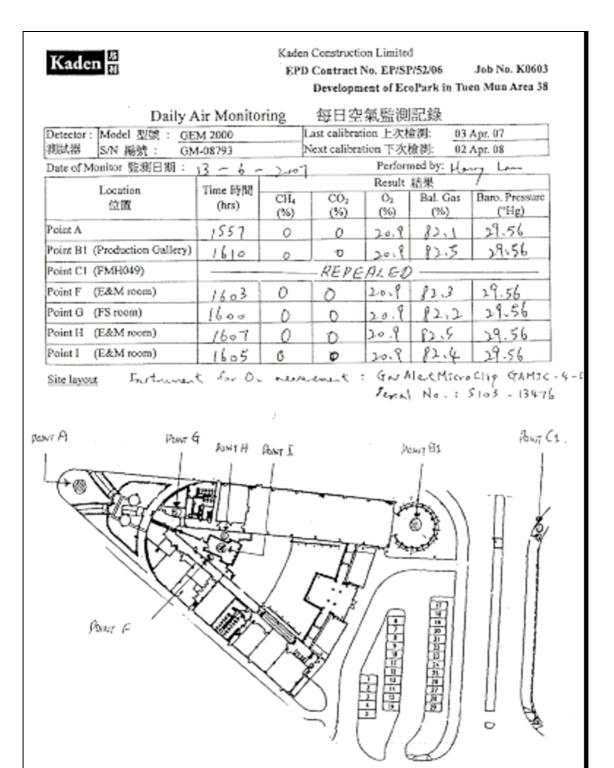
Company/Department	Name	Position	Telephone	
		Independent		
Scott Wilson Ltd.	Mike Bains	Environmental		
		Checker		
Scott Wilson Ltd.	Mr. Michael Lo	Senior Resident	6290 8860	
Scott Wilson Etd.	WII. WIICHACI LO	Engineer	0270 8800	
Scott Wilson Ltd.	Mr. Andy	Resident	6111 9703	
Scott Wilson Etd.	Cheung	Engineer	0111 9703	
Scott Wilson Ltd.	Mr. C S Lam	Senior Inspector	9861 8011	
Scott Wilson Etd.	WII. C S Lain	of Works		
Kaden Construction Limited	Mr. K M Book	Project	9193 8680	
Raden Construction Emitted	WII. K WI DOOK	Manager	9193 8080	
Kaden Construction Limited	Mr. Stephen	Section Agent	9071 7657	
Raden Construction Entitled	Leung	Section Agent	7071 7037	
Environmental Pioneers & Solutions	Miss. Patricia Environmental		2185 0123	
Limited	Chung	Team Leader	2103 0123	
Environmental Pioneers & Solutions	Mr. Harvey	Environmental	2185 0172	
Limited	Yung	Technician	2103 0172	
Environmental Pioneers & Solutions	Mr. Lam Ho	Environmental	2105 0154	
Limited	Chun	Technician	2185 0154	

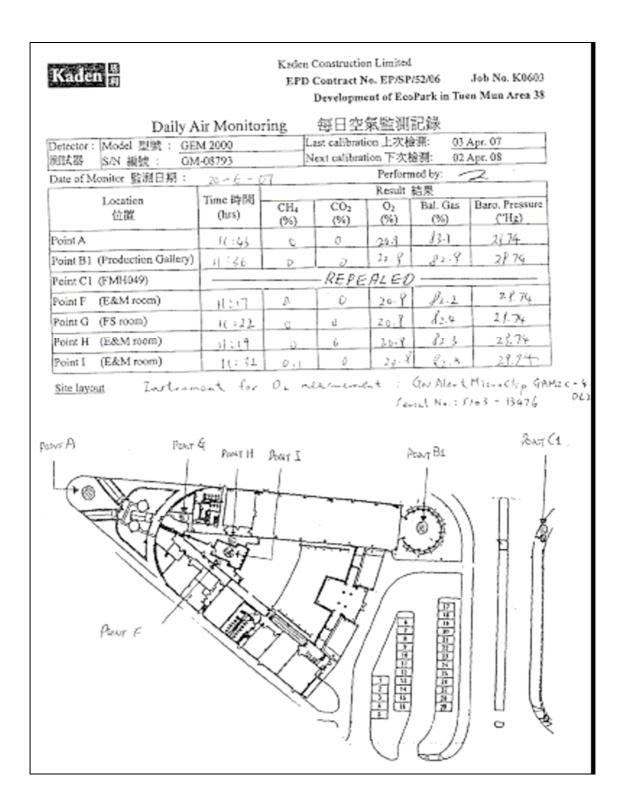
APPENDIX 3 – SITE LAYOUT PLAN FOR REFUSE COLLECTION POINTS

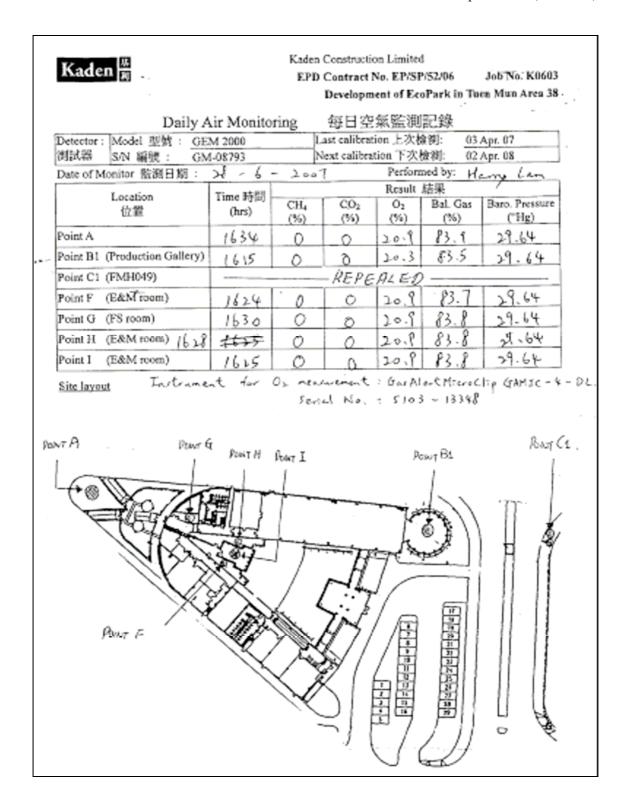


APPENDIX 4 - ORIGINAL LANDFILL GAS FIELD MEASUREMENT RECORDING SHEETS









APPENDIX 5 – CUMULATIVE LOG OF COMPLAINTS

CUMULATIVE LOG OF COMPLAINTS

Environmental No. of Outstanding		No. of complaints received in June 2007	Cumulative no. of complaints received since the
Parameters	Complaints		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 Compliant received	Location	Complainant /Date	Details of Complaint	Investigation /Mitigation Action	Investigated by/ Date
-	-	-	-	-	-	-