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Serco Guardian JV

# EcoPark Operation EM&A

## Quarterly Report

August 2009 to October 2009



Serco Guardian JV

## EcoPark Operation EM&A

### Quarterly Report

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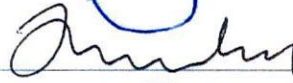
August 2009 to October 2009

**Certified By**     Antony WONG  
ET Leader



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**Verified By**     Harold INSLEY  
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Serco Guardian JV

## EcoPark Operation EM&A

### Quarterly Report

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August 2009 to October 2009

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**Report No** EB000198-R13-01

**Date** 14 Nov 2009

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# 1 EXECUTIVE SUMMARY

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1.1.1 EcoPark is a key element in the Government's waste management policy that aims to promote the local recycling industry and jump-start a circular economy to provide a sustainable solution to our waste problems. EcoPark is being developed in two phases at a site in Tuen Mun Area 38 (see [Figure 1-1](#)). In November 2006, the seven-year contract for the operation of EcoPark – EP/SP/53/06 Provision of Management Services for EcoPark in Tuen Mun Area 38 – was awarded to Serco Guardian JV (SGJV) by the Environmental Protection Department (EPD). SGJV, the “Operator” of EcoPark have engaged Hyder Consulting Limited as their Environmental Team (ET) to carry out the Environmental Monitoring and Audit (EM&A) works required by the EM&A Manual in accordance with the conditions of the Environmental Permit. This is the tenth quarterly EM&A report prepared for the operation phase of EcoPark and covers August 2009 to October 2009.

1.1.2 In terms of auditing, the tenants' recycling activities are to be audited on a monthly basis, and the results are to be summarised in this report. At present, however, while a number of tenants have already signed their tenancy agreements, none of them are carrying out formal recycling activities within their lots (six lots are currently being prepared by incumbent tenants).

1.1.3 Although no formal recycling activities are carried out, the ET has conducted monthly site inspections and some general observations have been made. During the joint IEC site inspection in October 2009, the ET undertook the audit using the approved checklist for Champway as a trial.

## **Throughput of Materials / Waste Generated**

1.1.4 As of end October 2009, no tenants have commenced formal recycling activities within their lots. However, Champway conducted a simple treatment for waste cooking oil which generates a total of 56,719 kg of waste including 40,513 kg of organic waste and 16,206 kg of water waste, including semi-solid and slurry, in the reporting quarter.

## **Exceedances of any Measured Action / Limit Levels**

1.1.5 In terms of monitoring, only quarterly monitoring of landfill gas (LFG) is required during operation phase EM&A and “following construction”. Since construction of Phase I of EcoPark has been completed, operation phase LFG monitoring for Phase I was carried out in October 2009. No action / limit level exceedance was recorded. LFG monitoring for Phase II of EcoPark continues to be carried out by the works contractor.

## **Summary of Complaints, Summons and Prosecutions**

1.1.6 To-date, there have been no complaints received; no notifications of summons; and no successful prosecutions.

**Reporting changes**

- 1.1.7 No reporting change has occurred during the reporting month.

**Future Key Issues**

- 1.1.8 Trial run and phase 1 operation of Champway is expected to take place in mid-November 2009. In the coming quarter, the operation phase LFG monitoring for Phase I shall continue, and the Process Review Checklists of Shiu Wing and Cosmos shall be approved. The Process Review Checklists for some Phase II tenants will also be prepared.

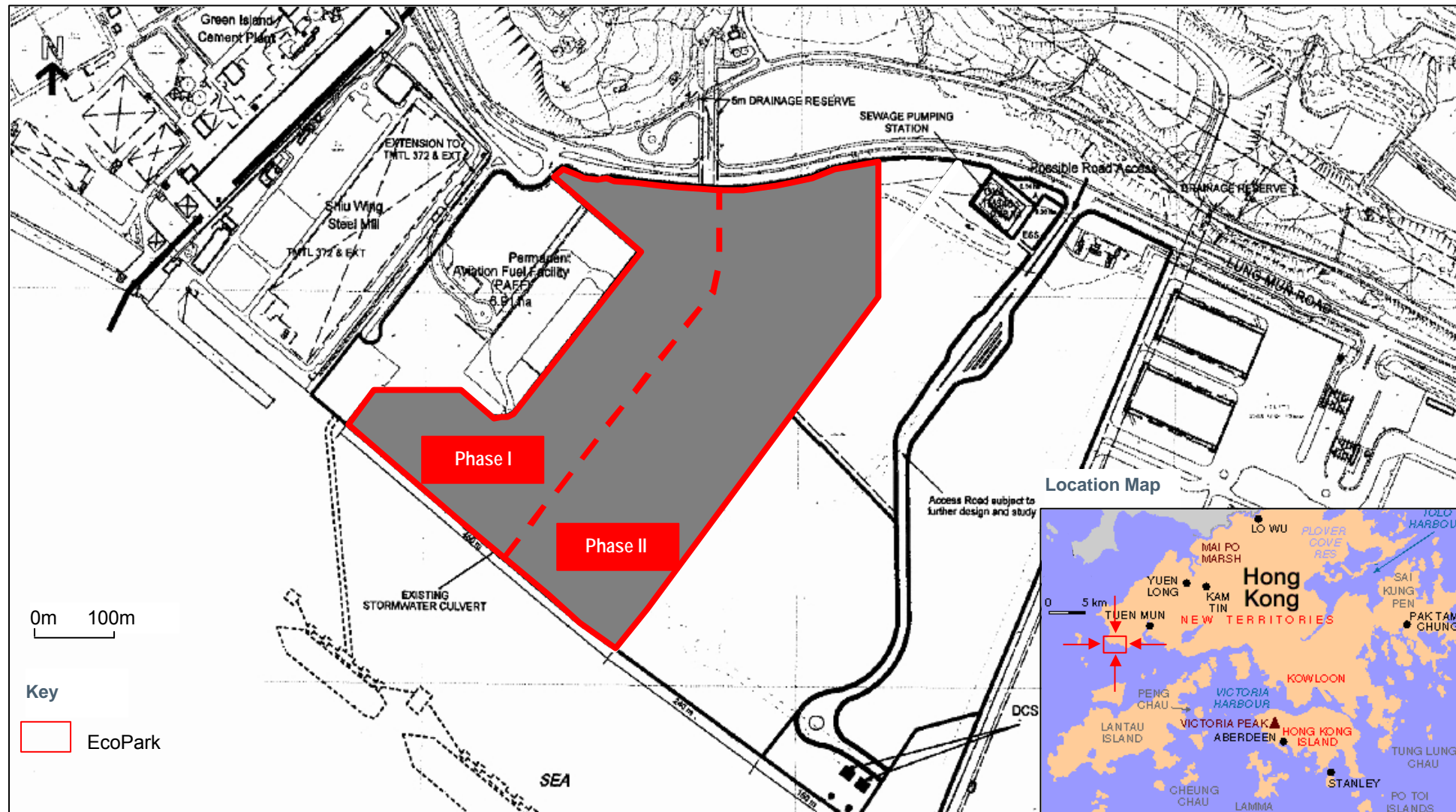


Figure 1-1 Location of EcoPark in Tuen Mun Area 38



## 2 BASIC PROJECT INFORMATION

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### 2.1 Overview

- 2.1.1 In the document "A Policy Framework for the Management of Municipal Solid Waste (2005-2014)" the Government set out a comprehensive policy to support the recycling industry. This included allocating suitable land, encouraging research and development, introducing environmental legislation and providing effective support measures. To this end, EcoPark is a key element that aims to promote the local recycling industry and jump-start a circular economy to provide a sustainable solution to our waste problems. By encouraging and promoting the reuse, recovery and recycling of our waste resources and returning them to the consumption loop, EcoPark will help to realize the full potential of the local recycling industry and alleviate the heavy reliance on the export of recyclable materials recovered from Hong Kong.
- 2.1.2 EcoPark is to be developed in two phases at a site in Tuen Mun Area 38 (see [Figure 1-1](#)). The construction contract for EcoPark – EP/SP/52/06 Development of EcoPark in Tuen Mun Area 38 – was awarded to Kaden Construction in June 2006 by EPD. This contract covers development of Phase I (completed) and extends to Phase II (ongoing).
- 2.1.3 In November 2006, the seven-year contract for the operation of EcoPark – EP/SP/53/06 Provision of Management Services for EcoPark in Tuen Mun Area 38 – was awarded to SGJV by EPD. SGJV, the "Operator" of EcoPark, has engaged Hyder Consulting Limited as their ET to carry out the EM&A works required by the EM&A Manual in accordance with the conditions of the Environmental Permit.

### 2.2 SGJV Organisation

- 2.2.1 Organisation of SGJV is shown in [Figure 2-1](#) below.

### 2.3 Operation Programme

- 2.3.1 As end of October 2009, no tenant has yet commenced formal recycling activities within their lots; consequently there is no operation programme to report in this reporting quarter. Six tenants (Hong Kong Hung Wai Wooden Board Company, Champway Technology Limited, Li Tong Group, Hong Kong Telford Envirotech Group Limited, Shiu Wing Steel Limited and Cosmos Star Holdings Co., Limited) have commenced preparatory works within their lots but have not yet commenced recycling activities.
- 2.3.2 The tenant lot was handed over to Cosmos Star Holdings Co., Limited on 15 August 2009. Starting from October 2009, Champway has stockpiled about 200 tonnes treated waste cooking oil in the reserved area for wastewater treatment plant (WWTP) of EcoPark for temporary storage. Preventive measures to avoid potential ground contamination such as placing canvas underneath the storage tanks and enhancing the monitoring frequency were provided to Champway during the joint site inspection on 21 October 2009.

## 2.4 EM&A Organisation

2.4.1 The EM&A is carried out by the ET, but SGJV and the Independent Environmental Checker (IEC) are also involved. The key personnel contact names and telephone number are summarised in [Table 2-1](#), and the current EM&A organisation is illustrated in [Figure 2-2](#).

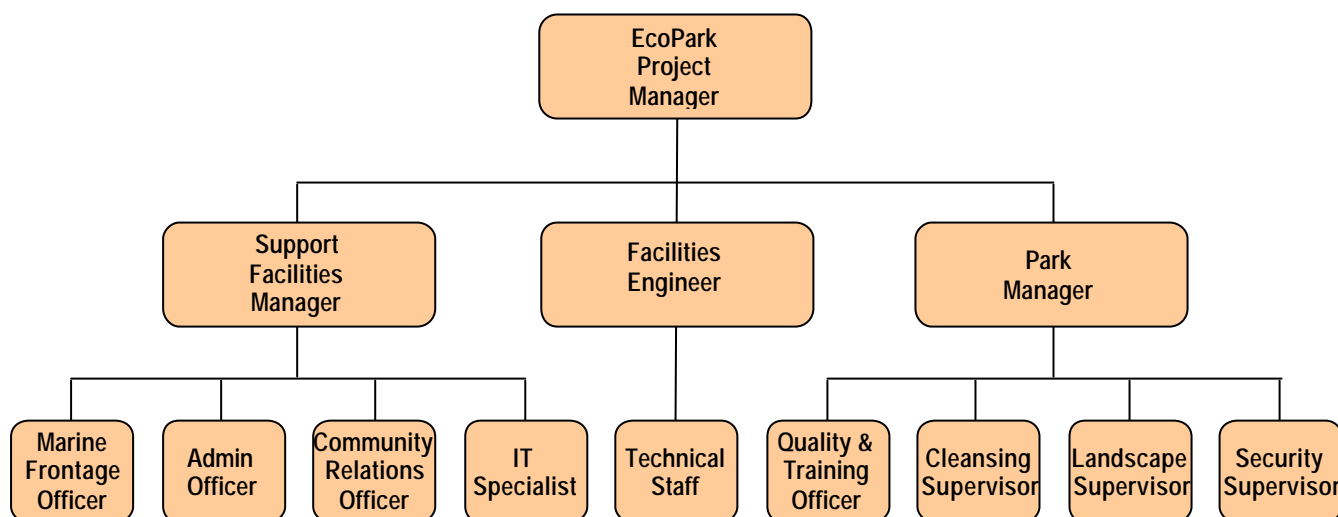


Figure 2-1 SGJV Organisation

Party	Position	Name	Contact Number
Project Proponent – EPD	Acting Principal Environmental Protection Officer	C F WONG	2872 1700
Operator – SGJV	Project Manager	Noel AU	2496 7633
	Park Manager	TC HON	6323 0298
ET – Hyder	ET Leader	Antony WONG	2911 2744
	ET Site Inspector	Carman CHUNG	2911 2533
IEC – Scott Wilson	IEC	Harold INSLEY	2410 3858

Table 2-1 Personnel Contact Names and Contact Number for the Project

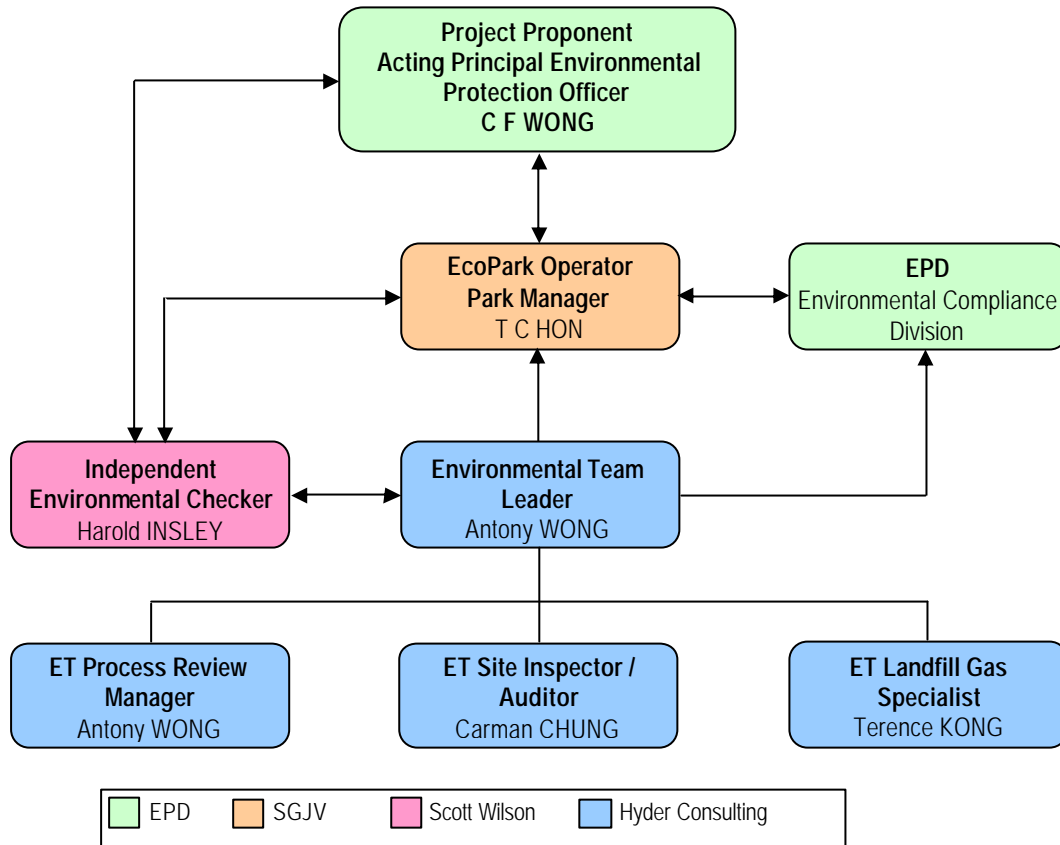


Figure 2-2 EM&A Organisation

## 3 SUMMARY OF EM&A REQUIREMENTS

### 3.1 Monitoring Parameters

- 3.1.1 The only parameter to be monitored as part of the operation phase EM&A programme is LFG.
- 3.1.2 Following completion of Phase I construction, routine monitoring is required at service voids and utility boxes. Since construction of Phase I of EcoPark was completed, quarterly LFG monitoring has been carried out by the ET since October 2009.
- 3.1.3 The location for monitoring was not specified in the EM&A Manual since the final design of EcoPark had not been completed when the EM&A Manual was approved. Therefore, during the joint site inspection on 27 July 2009, three monitoring locations were identified and agreed as suitable monitoring locations by the ET, IEC and SGJV. These three monitoring locations are listed in [Table 3-1](#) and shown in [Figure 3-1](#).

Monitoring Station ID	Type of Monitoring Station	Locations
EP1-1	LFG vent pipe with cap	Inside the landscaping area of Administration Building
EP1-2	Service void	PCCW below-ground chamber outside Lot EP08-01
EP1-3	Service void	HGC Broadband below-ground chamber outside Lot EP08-03

**Table 3-1 Operation Phase LFG Monitoring Locations in EcoPark Phase I**

- 3.1.4 [Figure 3-2](#) is a replacement page for the EM&A Manual, in accordance with footnote to **Figure 6.1** in the approved EM&A Manual, and shall be deemed to be included in the EM&A Manual.
- 3.1.5 Routine monitoring shall be carried out on a quarterly basis, however, should EPD alert the Operator that high LFG levels had been detected during monthly monitoring under the Siu Lang Shui Landfill restoration contract, then the Operator may be required to increase LFG monitoring to monthly until such time as EPD inform the Operator that quarterly monitoring can be resumed.
- 3.1.6 Since operation phase LFG monitoring is required “following construction” and construction has not yet been completed for Phase II, construction phase LFG monitoring for Phase II is ongoing and is reported in the Monthly EM&A Reports prepared by the construction contractor’s ET. These reports can be downloaded from:

[http://www.epd.gov.hk/eia/english/register/index8/vep2212006\\_content.html](http://www.epd.gov.hk/eia/english/register/index8/vep2212006_content.html)

## 3.2 Environmental Quality Performance Limits and EAP

3.2.1 The Action / Limit Levels and Event Action Plan (EAP) for LFG are shown in [Table 3-2](#). These refer to LFG detected in excavations, utilities and any enclosed on-site areas. No other A/L Levels or EAPs are specified in the EM&A Manual for operation phase EM&A.

Parameter	Level	Action
Oxygen (O <sub>2</sub> )	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 Dioxide (CO <sub>2</sub> )	Action Level >0.5% CO <sub>2</sub>	Ventilate to restore CO <sub>2</sub> to < 0.5%
	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%

**Table 3-2 Action Levels, Limit Levels and Event and Action Plan for LFG**

## 3.3 Environmental Audit of Non-monitored Parameters

3.3.1 Site inspections provide a direct means to trigger and enforce the environmental protection and pollution control measures specified in the Environmental Impact Assessment (EIA) Report. To examine operational practice, site inspections are to be undertaken regularly by the ET once per month, and joint site inspections are to be carried out by the ET and IEC once per quarter. Ad hoc site inspections are also carried out if significant environmental problems are identified. In addition, inspections may be required subsequent to receipt of an environmental complaint, or as part of the investigation work, as specified in the EAP. The following parameters are required to be audited as part of the operation phase EM&A programme:

- Air Quality
- Water Quality
- Waste Management
- Land Contamination

## 3.4 Environmental Mitigation Measures

3.4.1 Environmental mitigation measures applicable to the operation phase EM&A as stated in the Implementation Schedule are summarised in **Appendix 1**.

## 3.5 Environmental Requirements in Tenancy Agreements

3.5.1 Environmental requirements specified in tenancy agreements are summarised in **Appendix 2**.

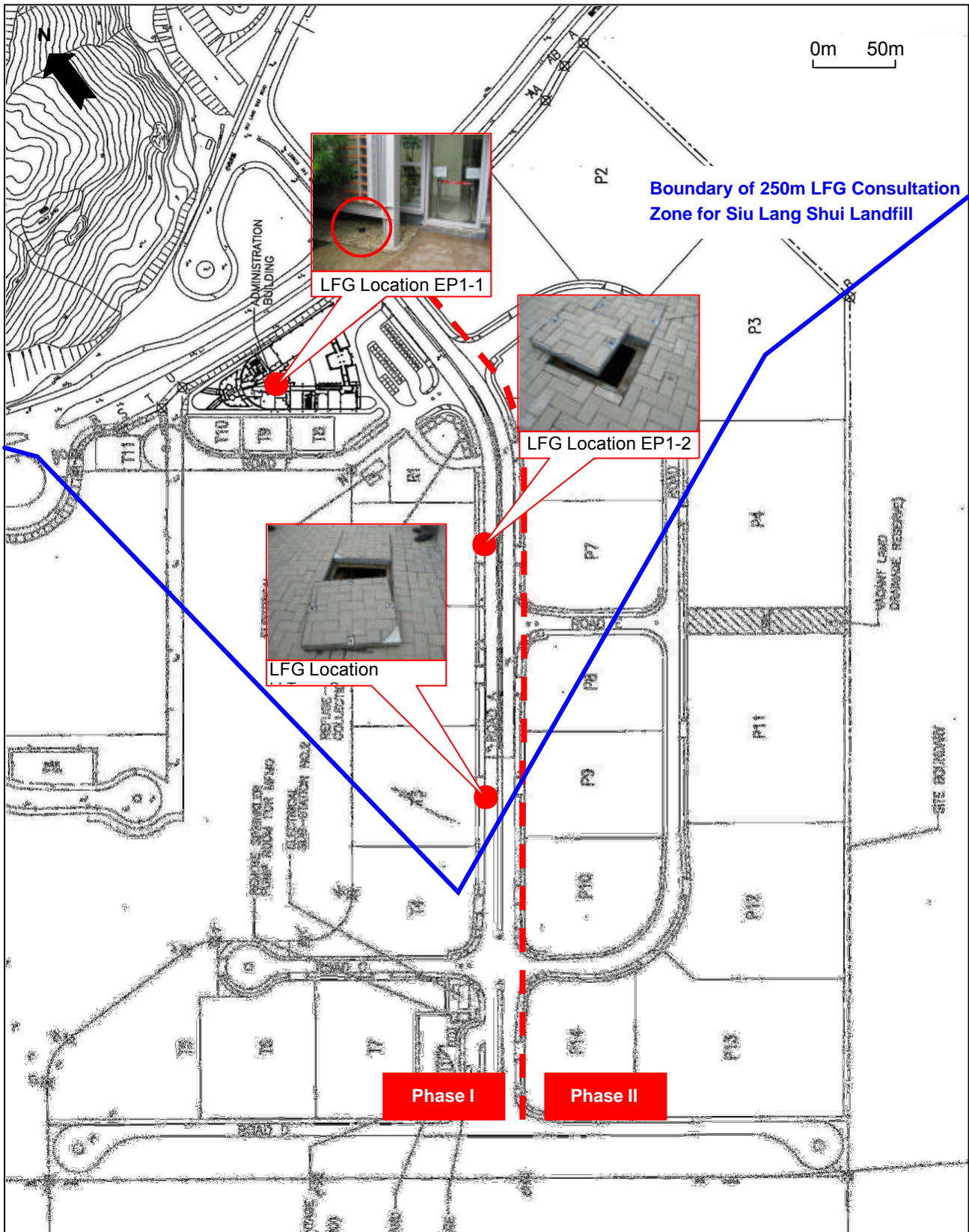
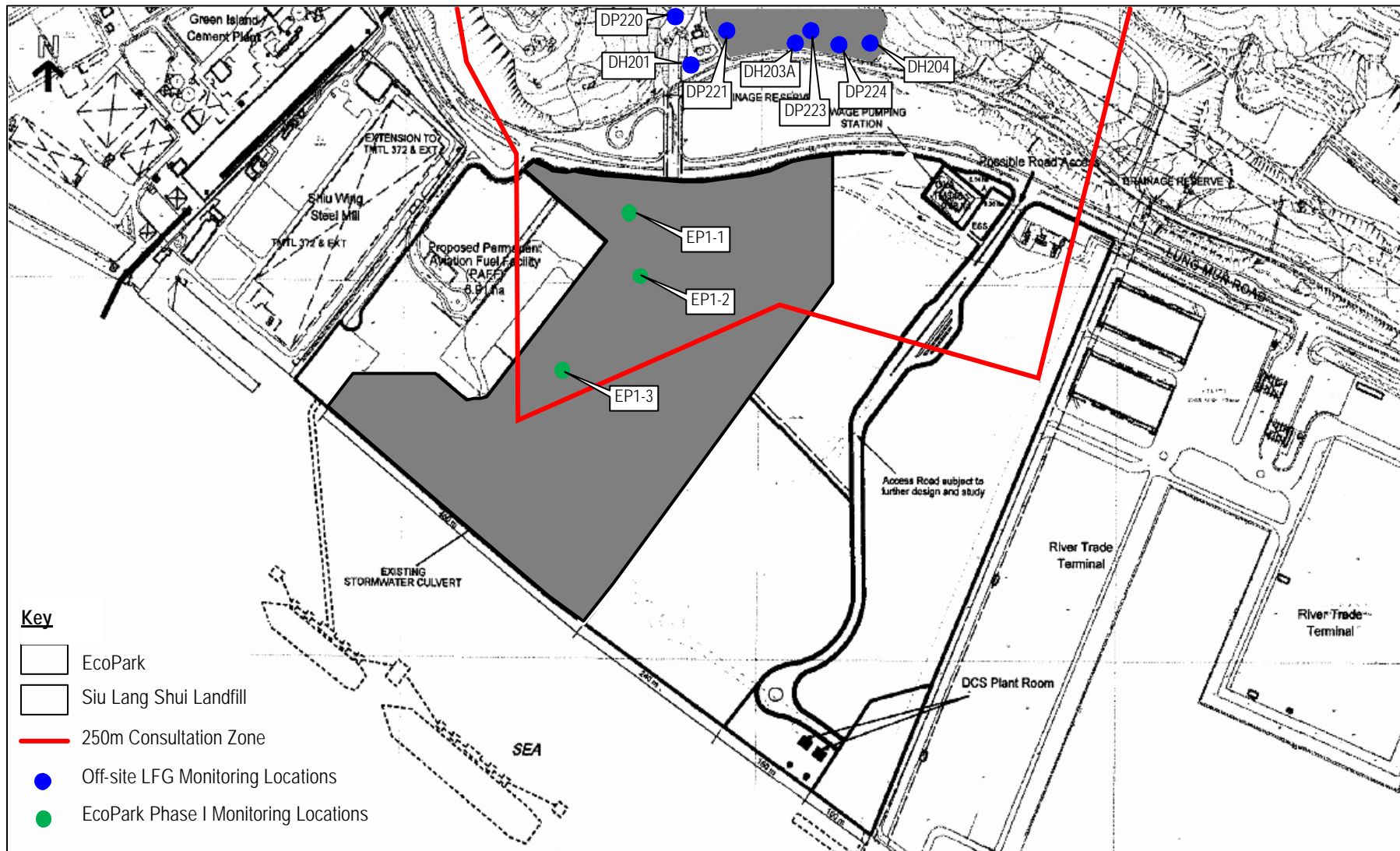


Figure 3-1 LFG Monitoring Locations within EcoPark Phase I



**Figure 3-2 Replacement Figure for EM&A Manual Figure 6.1**



## 4 OPERATION STATUS

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4.0.1 [Figure 4-1](#) shows the location of lots within EcoPark, the tenancy numbers and tenant names.

### 4.1 Tenants and Processes

#### Tenancy EP06-034

- **Lot Size:** Approx. 5,000m<sup>2</sup>
- **Activity:** Recycling of Waste Wood
- **Tenant:** Hong Kong Hung Wai Wooden Board Company

4.1.1 Formal recycling activities have not yet been commenced. Preparatory works within the tenant lot were still in progress. The Drainage Plans were submitted to Drainage Services Department (DSD) and approved on 21 May 2009. Building contractors were invited to submit tenders in June 2009, yet no construction has been carried out by the end of this reporting quarter.

#### Tenancy EP07-02

- **Lot Size:** Approx. 6,500m<sup>2</sup>
- **Activity:** Recycling of WEEE
- **Tenant:** Li Tong Group

4.1.2 Formal recycling activities have not yet been commenced. Phase 1 construction works for foundations commenced on 1 June 2009, and was still ongoing by the end of this reporting quarter. The tenant has amended the drawings in order not to sit on the manhole.

#### Tenancy EP07-03

- **Lot Size:** Approx. 6,000m<sup>2</sup>
- **Activity:** Recycling of Organic Waste (Waste Cooking Oil)
- **Tenant:** Champway Technology Limited

4.1.3 Public notice for the application of Specified Process Licence was published in July 2009 and one public comment related to emission issue was received. The application of Specified Process Licence was approved on 14 September 2009. For the Dangerous Goods Licence, the tenant has supplied the required information to Fire Services Department (FSD). The application is pending and the licence is expected to be available in mid-December 2009.

4.1.4 As of end October 2009, the tenant has not yet commenced formal recycling activities; however, waste cooking oil has been delivered to the lot for simple treatment and treated waste cooking oil was generated. Starting from October 2009, the tenant has stockpiled about 200 tonnes treated waste cooking oil in the reserved area for WWTP of EcoPark for temporary storage.

Trial run and phase 1 operation is expected to take place in mid-November 2009. Details of waste throughout are provided in [Section 4.2](#).

## Tenancy EP08-01

- **Lot Size:** Approx. 5,000m<sup>2</sup>
- **Activity:** Recycling of Waste Plastics
- **Tenant:** Hong Kong Telford Envirotech Group Limited

4.1.5 As of end October 2009, the tenant has commenced preparatory works but has not yet commenced recycling activities. The Building Plans were submitted to Buildings Department (BD) on 12 June 2009 and approved on 10 August 2009. Plastic bags have been stockpiled in the tenant lot since July 2009. Other plastic waste and some recycling equipments could also be found.

## Tenancy EP08-03

- **Lot Size:** Approx. 9,500 m<sup>2</sup>
- **Activity:** Recycling of Waste Metals
- **Tenant:** Shiu Wing Steel Limited

4.1.6 The tenant has nominated a contractor for construction works on 22 September 2009; since then, preparatory works have been commenced. The Drainage Plans were recently revised but not yet approved. The Process Review Checklist is being prepared, pending receipt of further information from the tenant.

## Tenancy EP08-04

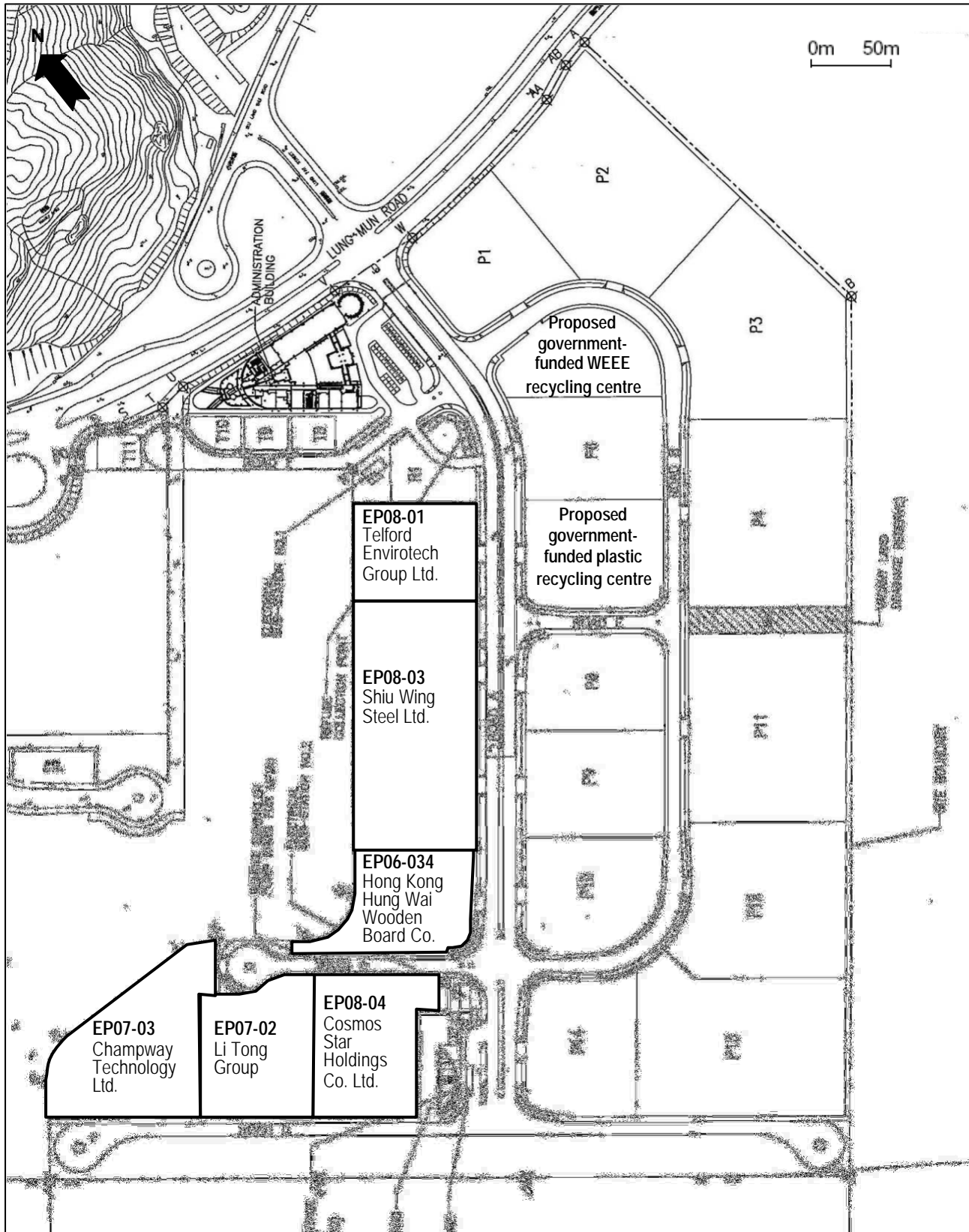
- **Lot Size:** Approx. 4,000 m<sup>2</sup>
- **Activity:** Recycling of materials arising from industrial and commercial activities
- **Tenant:** Cosmos Star Holdings Co., Limited

4.1.7 The lot was handed over to the tenant on 15 August 2009. The building plans were revised but not yet approved by BD. The Process Review Checklist is currently being prepared, and further information from the tenant is required.

## 4.2 Throughput Statistics

4.2.1 As advised by the Operator, no waste wood and plastics was delivered to the tenant lots of Hung Wai and Telford respectively in the reporting quarter. For Champway, 385,326 kg of cooking oil and 424,940 kg of grease trap waste were delivered to the site in the reporting quarter and the output was 753,547 kg of treated cooking oil.

4.2.2 However, as of end October 2009, no tenants have yet commenced formal recycling activities within their lots. Throughput details are shown in **Appendix 3**.



**Figure 4-1 Current Lot Usage Within EcoPark**

## 5 IMPLEMENTATION STATUS OF ENVIRONMENTAL PROTECTION MEASURES

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- 5.1.1 Environmental mitigation measures applicable to the operation phase EM&A as stated in the Implementation Schedule are summarised in **Appendix 1**. Environmental requirements specified in Tenancy Agreements are summarised in **Appendix 2**.
- 5.1.2 As of end October 2009, no tenants have yet commenced formal recycling activities within their lots and so no environmental protection measure is required to be implemented.

## 6 MONITORING RESULTS

### 6.1 Monitoring Date, Time, Frequency and Duration

6.1.1 A set of LFG measurement was conducted on quarterly basis. In this reporting quarter, the measurement was undertaken during the joint IEC site inspection on 21 October 2009. When the LFG monitoring is underway, monitoring data, time, duration for monitoring and the weather condition, are recorded and listed in [Table 6-1](#).

Station ID	Date	Time	Duration	Weather Condition
EP1-1	21-Oct-09	1130 – 1135	5 minutes	Overcast
EP1-2	21-Oct-09	1145 – 1150	5 minutes	Overcast
EP1-3	21-Oct-09	1155 – 1200	5 minutes	Overcast

Table 6-1 Sampling Schedule of LFG Monitoring

### 6.2 Monitoring Methodology, Parameters and Equipments

6.2.1 The LFG monitoring requirement and methodology are stipulated in Section 6 of the EM&A Manual. The LFG monitoring parameters and their measurement ranges are detailed in [Table 6-2](#).

Parameters	Measurement Ranges
Methane (CH <sub>4</sub> )	0-100% LEL & 0-100% v/v
Oxygen (O <sub>2</sub> )	0-25% v/v
Carbon Dioxide (CO <sub>2</sub> )	0-100% v/v
Barometric Pressure	mBar (absolute)

Table 6-2 Parameters and Measurement Ranges of LFG Monitoring

6.2.2 LFG monitoring shall be carried out using intrinsically-safe, portable multi-gas monitoring instruments. The gas monitoring equipment shall:

- Where possible, comply with BS6020 and be approved by BASEEFA as intrinsically safe, suitable for use in a Zone 2 are to BS5345.
- Be capable of continuous monitoring of methane, oxygen and carbon dioxide.
- Be capable of continuous barometric pressure and gas pressure measurements.
- Normally operate in diffusion mode unless required for spot sampling, when it should be capable of operating by means of an aspirator or pump.
- Have low battery, fault and over range indication incorporated.
- Store monitoring data, and shall be capable of being down-loaded directly to a PC.
- Measure in the following ranges:
  - Methane 0-100% LEL & 0-100% v/v
  - Oxygen 0-25% v/v
  - Carbon dioxide 0-100% v/v
  - Barometric pressure mBar (absolute)

6.2.3 The monitoring equipment shall alarm (both audibly and visually) in the event that the concentrations of the following are exceeded:

- Methane – rise to 10% LEL.
- Oxygen – fall to 18% by volume.
- Carbon monoxide – maximum short term (1-hour) exposure of 300ppm with long term average (8-hours) not to exceed 50ppm.

## 6.3 Types of Equipment Used and Calibration Details

6.3.1 Infra Red Gas Analyser as detailed in [Table 63](#) was used. The gas analyser is calibrated every 18 months. **Appendix 4** presents the monitoring equipment calibration records.

Equipment	Model	Serial no.	Qty.
Infra Red Gas Analyser	GA94A	GA3385	1

**Table 6-3 Equipment List of LFG Monitoring**

## 6.4 Results and Graphical Plots of Monitoring Parameters

6.4.1 LFG monitoring results are summarised in [Table 6-4](#) and detailed in **Appendix 5**. Graphical plots of the monitoring results are also provided in **Appendix 5**. No action / limit level exceedance was recorded.

Station ID	Monitoring Results					Action / Limit Level		
	CH <sub>4</sub> (% v/v)	CH <sub>4</sub> (% LEL)	O <sub>2</sub> (% v/v)	CO <sub>2</sub> (% v/v)	Barometric Pressure (mBar)	CH <sub>4</sub> (% LEL)	O <sub>2</sub> (% v/v)	CO <sub>2</sub> (% v/v)
EP1-1	0.0	0.0	20.6	0.2	1015			
EP1-2	0.0	0.0	20.1	0.0	1015	Above	Below	Above
EP1-3	0.0	0.0	20.0	0.0	1013	10 / 20	19 / 18	0.5 / 1.5

Note: (1) Shaded area indicates an exceedance of Limit Level

**Table 6-4 LFG Monitoring Results**

## 7 WASTE GENERATION STATISTICS

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- 7.1.1 As of end October 2009, no tenants have commenced formal recycling activities within their lots. However, Champway conducted a simple treatment for waste cooking oil which generates a total of 56,719 kg of waste including 40,513 kg of organic waste and 16,206 kg of water waste, including semi-solid and slurry, in the reporting quarter.
- 7.1.2 The collected waste cooking oil was heated up and separated into organic waste and cooking oil. No wastewater was discharged but water waste such as semi-solid and slurry were generated from the separation process. These organic waste and water waste were collected by licence collectors, transported to and disposed of at WENT Landfill as general refuse.
- 7.1.3 Waste generation details are shown in **Appendix 3**.



## 8 SUMMARY OF ENVIRONMENTAL AUDIT

### 8.1 August 2009

8.1.1 The environmental audit was carried out by the ET on 21 August 2009. Construction of EcoPark Phase I was ongoing and no tenants were yet carrying out formal recycling activities within EcoPark. As such, there were no processes to be audited. No significant observations were made.

8.1.2 Since mud trail was observed at Champway's lot entrance during the site inspection, the tenant was reminded about providing wheel washing facility at entrance. Additionally, open burning of waste was observed inside Shiu Wing's lot on 20 August 2009 at around 4 pm. SGJV stopped and verbally warned the construction workers immediately. Written reminder as detailed in **Appendix 6** was issued to the tenant on 21 August 2009.

### 8.2 September 2009

8.2.1 The environmental audit was carried out by the ET on 22 September 2009. Construction of EcoPark Phase I was ongoing and no tenants were yet carrying out formal recycling activities within EcoPark. As such, there were no processes to be audited. However, observations displayed in [Table 8-1](#) were noted during the site audit

Tenant	Observation	Advice from ET	Remedial Actions by Tenant
Shiu Wing	1. Soil deposit inside U channels was observed.	1. The tenant was reminded to clean up the deposit.	As the tenant lot was inaccessible during the joint site inspection in Oct 2009, the status shall be followed up in the next monthly site inspection. (Outstanding)
	2. Chemicals without label and drip tray were observed.	2. The tenant was reminded to provide label and drip tray to all the chemicals to prevent ground contamination.	
Li Tong	1. Soil deposit inside U channels was observed.	1. The tenant was reminded to clean up the deposit.	As the tenant lot was inaccessible during the joint site inspection in Oct 2009, the status shall be followed up in the next monthly site inspection. (Outstanding)
	2. Chemicals without drip tray were observed.	2. The tenant was reminded to provide drip tray to all the chemicals to prevent ground contamination, and put them in a proper storage area.	
	3. Stagnant water was found inside safety helmet on site.	3. The tenant was reminded to remove the stagnant water and maintain site tidiness.	

**Table 8-1 Observations made during Environmental Audit on September 2009**

- 8.2.2 Champway was expected to stockpile about 200 tonnes treated waste cooking oil in the reserved area for WWTP of EcoPark for temporary storage, starting from October 2009. Its trial run and phase 1 operation was supposed to take place in mid-November 2009.

## 8.3 October 2009

- 8.3.1 The environmental audit was carried out by the ET and IEC on 21 October 2009. Construction of EcoPark Phase I was complete and no tenants were yet carrying out formal recycling activities within EcoPark. As such, there were no processes to be audited.
- 8.3.2 During the joint site inspection, LFG monitoring was undertaken at the three monitoring locations agreed by the ET, IEC and SGJV in the previous quarter. These three monitoring locations are listed in [Table 3-1](#) and shown in [Figure 3-1](#). The monitoring results are presented in [Section 6.4](#). No action / limit level exceedance was recorded.
- 8.3.3 The site inspection checklist verified by IEC was used to carry out a trial audit at Champway's lot. Two observations were recorded, and the approved checklist is shown in [Appendix 7](#). For the temporary storage of treated waste cooking oil at the reserved area for WWTP, Champway was reminded to place canvas underneath the storage tanks and enhance the monitoring frequency so as to prevent ground contamination. The stagnant water on canvas shall also be removed after raining.
- 8.3.4 Excavation more than 1m depth in the tenant lot of Shiu Wing was observed during the joint site inspection. Since Shiu Wing is located within the LFG consultation zone, LFG monitoring is required when excavation is more than 1m deep. The LFG monitoring results are attached in [Appendix 8](#) for reference.

## 9 COMPLAINTS

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- 9.1.1 As of end October 2009, no tenants have yet commenced formal recycling activities within their lots and no complaints have been received related to recycling activities.

## 10 CONCLUSIONS

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- 10.1.1 As of end October 2009, no tenants have yet commenced formal recycling activities within their lots. No conclusion is therefore drawn relating to the operation phase EM&A programme in this reporting quarter.

## Appendix 1

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# Environmental Mitigation Measures (from the Implementation Schedule)

EIA Ref.	EM&A Ref.	Environmental Protection Measures Identified in the Implementation Schedule that are Applicable to the Operation Phase of EcoPark	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Relevant Legislation and Guidelines
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#### General

5.5.23 to 5.5.25, 10.2.24 & 10.2.37	4.2.5 to 4.2.8	The Operator shall develop and implement an Emergency Response Plan (ERP) that lists the procedures to be followed in case of fire, fuel or chemical spillage or other emergency within the EcoPark.	Throughout the duration of the operation.	Operator	
12.2	7.2	No process shall be allowed to operate within EcoPark without approval from WFBU. Approval will be based on the ten-step Process Review, which may include a Design Audit if deemed to be necessary.	Throughout the duration of the operation.	ET IEC Project Proponent	
	8.1.2	All reports (including Process Review Checklists and any Design Audits) shall be prepared and certified by the ET, verified by the IEC and approved by the Project Proponent.	Throughout the duration of construction works until construction is substantially completed. Throughout the duration of the operation.	ET IEC Project Proponent	
12.3	7.3	The Operator shall prepare and implement an Environmental Management Plan (EMP) to define mechanisms for achieving the environmental requirements specified in the EIA, EP and in statutory regulations.	Throughout the duration of the operation.	Operator	

#### Air Quality

13.2		The Operator shall ensure that the EcoPark "base case" assumptions for air quality shown in Table 13.1 of the Final EIA Report are met by tenants, as a whole.	Throughout the duration of the operation.	Operator	Table 13.1 of the Final EIA Report
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#### Water Quality

5.4.11 & 5.6.7		To minimise the chance of accidental spillage during loading and unloading, and thereby reduce marine water quality impacts, well established cargo handling guidelines should be followed.	Adjacent to EcoPark marine frontage when loading or unloading goods.	Operator Operators of bulk carriers	Sections 5 and 6 of <i>IMO Code of Practice for the Safe Loading/Unloading of Bulk Carriers</i>
5.5.19		Contaminated water collected in the surface drainage systems shall be treated at the WTF or other appropriate treatment facility.	Within EcoPark throughout the life of the facility.	Operator	

EIA Ref.	EM&A Ref.	Environmental Protection Measures Identified in the Implementation Schedule that are Applicable to the Operation Phase of EcoPark	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Relevant Legislation and Guidelines
5.5.23 to 5.5.25	4.2.5 to 4.2.7	An Emergency Response Plan (ERP) will be formulated to address various accident scenarios. The ERP will be certified by the Environmental Team (ET) and verified by the Independent Environmental Checker (IEC) under the operation EM&A programme.	Within EcoPark throughout the life of the facility.	Operator	
5.6.4		For uncovered areas where recovery process identified as causing potentially high level of contamination are located, stop-logs will be installed in the perimeter drainage system to isolate contamination.	Within EcoPark throughout the life of the facility.	Operator	
	4.2.2	The ET should develop an audit checklist, with the agreement of the IEC, to ensure that each mitigation measure is implemented when appropriate and operated correctly when implemented.	Within EcoPark throughout the life of the facility.	ET with IEC	

#### **Waste Management**

6.8.7	5.2.4	The Operator should register with EPD as a chemical waste producer.	Within EcoPark throughout the life of the facility.	Operator	Waste Disposal (Chemical Waste) (General) Regulation
6.8.16		The dust collected by any air pollution control equipment installed by tenants must be tested to ensure compliance for landfill disposal.	Within EcoPark throughout the life of the facility.	Operator	Practice Note for disposal of dusty waste at landfills & Admission Ticket System
6.8.18 & 6.8.22	5.2.4	Sludge will be disposed of at WENT landfill, or at any future dedicated sludge treatment facility. Sludge will be collected by a Licensed collector at regular intervals, as determined by the operation of the WTF	Within EcoPark throughout the life of the facility.	Operator	
6.8.21	5.2.4	Chemical wastes shall be stored in appropriate containers in a covered area. "No Smoking" signs will be clearly displayed to prevent accidental ignition of any flammable materials. Drip trays capable of storing 110% of the volume of the largest container will be used to mitigate possible leakage.	Within EcoPark throughout the life of the facility.	Operator	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
	5.2.3 & 5.2.5	The ET should develop an audit checklist, with the agreement of the IEC, to ensure that each mitigation measure is implemented when appropriate and operated correctly when implemented.	Within EcoPark throughout the life of the facility.	ET with IEC	

EIA Ref.	EM&A Ref.	Environmental Protection Measures Identified in the Implementation Schedule that are Applicable to the Operation Phase of EcoPark	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Relevant Legislation and Guidelines
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**Prevention of Contaminated Land**

7.3.1	5.3.2	Any spillages of contaminating material shall be cleaned up immediately through the use of an absorbent. Any such used material should then be considered chemical waste and disposed of appropriately.	Within EcoPark throughout the life of the facility.	Operator	
7.3.3		Any areas within the lot to be used for recycling processes shall be concrete paved before recycling activities commence.	Within EcoPark throughout the life of the facility.	Operator	
7.3.5	5.3.2	<p>During operation, the greatest risk of land contamination will come from the storage of chemical wastes, therefore the following measures should be followed :</p> <ul style="list-style-type: none"> <li>▪ All chemical storage areas shall be provided with locks and be sited on sealed areas. The storage areas shall be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil and chemicals from contaminating the ground.</li> <li>▪ Management of chemical waste is implemented through the control of waste storage, labelling of waste, transportation and treatment of chemical waste at an appropriate facility.</li> <li>▪ Chemical wastes will be collected, stored and disposed of in accordance with the Regulation. Disposal of other construction waste will be undertaken by Licensed contractors in accordance with applicable statutory requirements in the WDO.</li> <li>▪ Chemical wastes shall be handled according to the relevant code of practice. Spent chemicals shall be stored and collected by an approved operator for disposal at a licensed facility in accordance with the relevant regulation.</li> </ul>	Within EcoPark throughout the life of the facility.	Operator	<p>Waste Disposal (Chemical Waste) (General) Regulation</p> <p>Code of Practice on the Packaging, Labelling and Storage of Chem Wastes &amp; Chemical Waste (General) Regulation</p>



EIA Ref.	EM&A Ref.	Environmental Protection Measures Identified in the Implementation Schedule that are Applicable to the Operation Phase of EcoPark	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Relevant Legislation and Guidelines
	5.3.3	The ET should develop an audit checklist, with the agreement of the IEC, to ensure that each mitigation measure is implemented when appropriate and operated correctly when implemented.	Within EcoPark throughout the life of the facility.	ET with IEC	

#### **Landfill Gas**

8.7.10 & 8.7.11	6.1.2	<ul style="list-style-type: none"> <li>▪ Alert workers and visitors of possible LFG hazards</li> <li>▪ Prohibit smoking and open fires on site</li> <li>▪ Conduct regular (quarterly) LFG monitoring at mobile offices, equipment stores, etc.</li> </ul>	Within EcoPark throughout the life of the facility.	Operator	
	6.4.3	Following construction, routine monthly monitoring may be required at service voids and utility boxes. The monitoring requirement and specific locations of monitoring points shall be established based on the findings of the monitoring carried out during construction (i.e. if no LFG is detected during construction then no routine monitoring is required). The need for continued monitoring shall, however, be reviewed through discussion with EPD.	Within EcoPark throughout the life of the facility.	Operator	

#### **Hazard to Life**

10.4.3		Building height limit within EcoPark shall be applied to structures within which people may work at elevated levels.	Within EcoPark throughout the life of the facility.	Operator	EIA Report Table 10.2
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#### **Landscape and Visual**

9.4.4		It recommended that this commonality be promoted throughout EcoPark by the Operator and adopted by tenants, if practicable.	Within EcoPark throughout the life of the facility.	Operator	
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## Appendix 2

# Environmental Requirements in Tenancy Agreement

## GENERAL ENVIRONMENTAL RESPONSIBILITIES

- 9.1 The Tenant shall at its own cost(s) comply with and shall ensure that the Premises is used, designed, constructed, operated and maintained in accordance with:-
- (a) All relevant Ordinances, by-laws, regulations, statutory technical memorandums, codes of practice, rules, non-statutory guidance notes, schemes and abatement notices for the time being in force in Hong Kong including those relating to the environment and governing the control of any form of pollution (see specific Ordinances mentioned hereinbelow) and licensing requirements under relevant Ordinances and regulations.
  - (b) All information, mitigation measures, prohibitions, restrictions, recommendations and requirements under the Environmental Impact Assessment Report for Development of an EcoPark in Tuen Mun Area 38 with Appendices, i.e. the EIA Report (Register No.: AEIAR-086/2005) dated April 2005, the Final EM&A Manual dated April 2005, the application documents including all attachments (Application No. AEP-226/2005) and other relevant documents in the Register (or in any other places, any internet websites or by any other means as specified by the Director), including the prohibitions and mitigation measures for processes in Table 14.1 and the material throughputs, processes and remarks in Table B.1 of the EIA Report (in so far as applicable).
  - (c) All information, conditions, submissions, mitigation measures, orders, notices, requirements, prohibitions, restrictions and time limits under the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (including updated information about the Permit, any amended permit and any further permit) and all mitigation measures recommended and to be recommended in submissions that shall be deposited with or approved by the Director as a result of permit conditions contained in the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (including updated information about the Permit, any amended permit and any further permit). The Tenant shall refer to, inter alia, Conditions 4.1 to 4.14 (and Annexes A and B) and Conditions 3.7 and 3.8 (and Figures 2 and 3) of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 regarding measures to mitigate air quality impact, measures to mitigate hazard to life impact, measures to prevent land contamination, measures to mitigate landfill gas hazard, maintenance of landscape and visual measures (see also hereinbelow regarding Condition 5 of the Environmental Permit and specified Ordinances).
  - (d) All information, conditions, submissions, mitigation measures, orders, notices and requirements under on going surveillance and monitoring activities during all stages of the Project and during the tenancy under the Tenancy Agreement (e.g. any additional mitigation measures recommended and to be recommended under the Process Review and Design Audit (carried out and to be carried out in accordance with the EM&A Manual) for various environmental impacts including, but not limited to, noise pollution, air quality, hazard to life, landfill gas hazard, landscape and visual measures, waste management and land contamination).
  - (e) All recommendations referred to in the documents of the EIAO Register which are not expressly referred to in Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 and any amended Environmental Permit (unless expressly excluded or impliedly amended in the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 and any amended Environmental Permit).
- 9.2 Further to Condition Nos. 6 and 8 hereinabove, the Tenant shall at its own cost provide relevant environmental monitoring data, information, documents and assistance to the Director and/or the Environmental Protection Department and shall permit authorised representatives of the

Environmental Protection Department to access, inspect, take samples and monitor the Premises and operations for the Process Review and the Design Audit carried out and/or to be carried out pursuant to Conditions 4.1 and 5 of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (and any updated Permit, amended permit and further permit).

- 9.3 If the Tenant's operations (i.e. activities and facilities for recovery and/or recycling and/or reprocessing) are not covered by the EIA Report and/or deviate from the development parameters mentioned in inter alia the EIA Report, the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (including the parameters at Annex A) and/or any environmental licence (e.g. the Water Treatment Facility ("WTF") Discharge Licence), and if additional mitigation measures are not available or are not effective in the opinion of the Director, to ensure compliance with the EIA Report, the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (including any updated Permit, amended permit and further permit) and the relevant environmental licence(s), the Tenant shall comply with any modified parameters and/or the Tenant shall immediately modify its operations in such a way that the findings and requirements of the EIA Report, the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (including any updated Permit, amended permit and further permit) and the environmental licence(s) are complied with and shall immediately cease to continue the offending part of the operations or activity in question.
- 9.4 The Tenant shall at its own cost(s) apply for, obtain, renew, maintain and comply with all the relevant licences related to compliance with all relevant Ordinances, by-laws, regulations, statutory technical memorandums, codes of practice, rules, non-statutory guidance notes, schemes, abatement notices and the environmental permits for the time being in force in Hong Kong (including those relating to the environment and governing the control of any form of pollution). The Tenant shall obtain, renew and comply with all the said licences within the relevant time limits (in any event, within one (1) calendar month of the date of signing and/or execution of the Tenancy Agreement), shall comply with all abatement notices, orders, directions and requests of the relevant authorities and public officers and shall be responsible for paying all relevant fees, costs, fines and penalties.
- 9.5 The Tenant shall not do anything or omit to do anything which would cause, contribute to or involve a breach or potential breach by the Director relating to any of the matters mentioned in Conditions 9.1 to 9.4 hereinabove (and other Conditions hereinbelow).
- 9.6 The Tenant shall fully indemnify the Government and/or the Director for any fees, costs, damages, expenses, fines, penalties, losses and claims arising (a) out of any breach of any of the matters mentioned in inter alia Conditions 9.1 to 9.4 hereinabove (and other Conditions hereinbelow) or (b) from the use of the Premises or (c) out of any works carried out at any time during the term to or at the Premises or (d) out of anything now or during the term attached to or projecting from the Premises or (e) from any neglect or default by the Tenant or by its respective servants or agents or by any express licensee of the Tenant.

## **SPECIFIC ENVIRONMENTAL RESPONSIBILITIES**

### Air Pollution

10. Save with an appropriate exemption under the Air Pollution Control Ordinance (Cap. 311 of the Laws of Hong Kong) any regulations made thereunder and any amending legislation, the Tenant shall not install or permit or suffer to be installed upon the Premises or any part thereof or any building(s) or structure(s) or part of any building(s) or structure(s) erected or to be erected thereon any furnace, oven, chimney or flue or any other combustion equipment or use or permit or suffer to be used any fuel or any method or process of manufacture or treatment that might in any circumstance result in, cause or contribute to the discharge or emission of any pollutant or any noxious, harmful or corrosive matter, whether it be in the form of gas, smoke, liquid, solid or otherwise (including but not limited to

air pollutant as defined in Section 2 of the Air Pollution Control Ordinance (Cap. 311 of the Laws of Hong Kong)), which exists or which is imminent, without the prior written approval of the Director.

11. No alteration to the installation and method of manufacture shall be made without the prior written consent of the Director. In any event, the Tenant shall at its own cost(s) comply with, inter alia, Conditions 4.2 to 4.7 and Annex A of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 regarding design, installation and operation of chimney, location of fresh air intakes and use of ultra-low sulphur or other cleaner fuel(s) as agreed by the Director (and the conditions of any updated Permit, amended permit and further permit regarding measures to mitigate air quality impact), good practices and relevant provisions of the EIA Report and Final EM&A Manual.

#### Noise Pollution

12. The Tenant shall take all necessary measures as may be required by and to the satisfaction of the Director to ensure that the operation of all plant and equipment, installed or used on the Premises or in any building(s) or structure(s) or any part of any building(s) or structure(s) erected or to be erected thereon, will not result, not cause and/or will not contribute any noise (which exists or which is imminent) which disturbs or annoys the residents or occupiers of any adjoining or neighbouring lot or lots or premises, or causes and/or contributes to disturbance to the general public under the Noise Control Ordinance (Cap. 400 of the Laws of Hong Kong) any regulations made thereunder and any amending legislation.
13. The decision of the Director as to whether any such plant and equipment are causing disturbance or annoyance as aforesaid shall be final and binding on the Tenant.

#### Waste Management

14. The Tenant shall not permit, allow or suffer any fuel or chemical and any sewage, waste water or effluent containing sand, cement, silt or any suspended or dissolved material to flow, escape or run from the Premises onto any adjoining land or allow any waste matter which does not form part of the recovery and/or recycling and/or reprocessing operation or is not part of the final product of such operation to be deposited, kept, held or stored anywhere within the Premises and other areas of EcoPark. The Tenant shall at its own cost(s) have all such matters and all waste arising from recycling activities, chemical waste arising from maintenance of plant and equipment, sewage sludge (from WTF) and general daily waste from the operation removed from the Premises or any building(s) or structure(s) or any part of any building(s) or structure(s) erected or to be erected thereon in a proper manner to the satisfaction of the Director.
15. In any event, the Tenant shall at its own cost(s) comply with, inter alia, Conditions 4.11 and 4.12 of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 regarding paving all areas of the Premises with concrete/using concrete hardstanding and siting all fuel tanks and chemical storage areas on the specified sealed areas, respectively (and comply with the conditions of any updated Permit, amended permit and further permit regarding measures to prevent land contamination). The Tenant shall at its own cost(s) comply with relevant provisions of the Waste Disposal Ordinance (Cap.354 of the Laws of Hong Kong) good practices and relevant provisions of the EIA Report and Final EM&A Manual.

#### Water Pollution

16. In the event that the Tenant produces, generates, permits, causes, allows or suffers any discharge which is subject to control under the Water Pollution Control Ordinance (Cap. 358 of the Laws of Hong Kong) any regulations made thereunder and any amending legislation, and is not covered by a WTF Discharge Licence issued under the Water Pollution Control Ordinance (Cap. 358 of the Laws of Hong Kong) the Tenant shall apply to the Director for a licence and comply with the terms and conditions stipulated in the licence and the WTF Discharge Licence at the Tenant's own cost(s). Otherwise, the Tenant is not allowed to discharge directly or indirectly or to produce, generate,

permit, cause, allow or suffer any discharge into any public sewer, storm-water drain, channel, stream-course, sea or any area inside or outside the Premises any trade effluent or foul or contaminated water or cooling or hot water. Subject to the said licence from the Director and WTF Discharge Licence, the Tenant shall at its own cost(s) separate, collect, discharge and send all process or industrial wastewater to the WTF for treatment to the standard required for discharge into a sewer leading to the sewage treatment works at Pillar Point or other treatment works specified in the licence.

17. Subject to obtaining advance written approval of the Director, the Tenant shall at its own cost(s) provide, install, operate and maintain its own waste water pre-treatment plants within the Premises if such process or industrial wastewater could not meet the influent limits / exceeds the maximum influent criteria of the WTF (in accordance with paragraph 7.2.9 of the Final E&MA Manual). The Tenant shall at its own cost(s) separate, collect, discharge and send all domestic wastewater (i.e. other than process or industrial wastewater) to the Pillar Point Sewage Treatment Works directly for treatment or other treatment works specified in the licence.
18. In any event, the Tenant shall prevent any spilled materials from entering the surface water drainage system and prevent contamination of the sea at its own cost(s) by, inter alia, providing, installing, operating and maintaining stop-logs or interceptors in the surface water drainage system and at the marine frontage area, respectively, or as required by the licence. The Tenant shall at its own cost comply with relevant provisions of the Dumping at Sea Ordinance (Cap 466 of the Laws of Hong Kong) good practices and relevant provisions of the EIA Report and Final EM&A Manual.

#### Hazard to Life Impact

19. To mitigate hazard to life impact, the Tenant shall comply with, inter alia, Conditions 4.8 to 4.10 of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (and comply with the conditions of any updated Permit, amended permit and further permit regarding measures to mitigate hazard to life impact) and shall not:-
  - (a) Bring, keep, store or transport chlorine within the Premises and other areas of EcoPark;
  - (b) Bring, keep, store, locate or transport dangerous goods, substances and fuels supporting combustion including oxygen, acetylene, hydrogen peroxide, rubber tyres and diesel within 10 metres from the boundary of the site of EcoPark; and
  - (c) Exceed the building height restrictions for buildings on the Premises which are on/near the western boundary of the site of EcoPark as mentioned in Annex B to the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 (including any updated Permit, amended permit and further permit).

#### Landfill Gas Hazard

20. To mitigate landfill gas hazard, the Tenant shall at its own cost(s) comply with, inter alia, Condition 4.13 of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 regarding raising clear of the ground all buildings and enclosed structures as specified in inter alia Condition 3.7 (and comply with the conditions of any updated Permit, amended permit and further permit regarding measures to mitigate hazard to life impact).

#### Landscape and Visual Impacts

21. To mitigate landscape and visual impacts, the Tenant shall at its own cost(s) comply with, inter alia, Condition 4.14 of the Environmental Permit No. EP-226/2005 as amended by the Variation of Environmental Permit – Application No.VEP-221/2006 regarding maintaining landscape, planting, treatment and mitigation measures as specified in inter alia Condition 3.8 and Figure 3 (and comply with the conditions of any updated Permit, amended permit and further permit regarding measures to mitigate landscape and visual impacts).

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## Appendix 3

# Material and Waste Throughputs

## Throughput of Hong Kong Hung Wai Wooden Board Company (EP06-034)

Date	Waste Input (kg)		Product Output (kg)*		Waste Disposal (kg)*	
	Waste Wood	Cum Total	Wooden Board	Cum Total	General Refuse	Cum Total
Jun-08	21,000	21,000	-	-	-	-
Jul-08	7,000	28,000	-	-	-	-
Aug-08	-	28,000	-	-	-	-
Sep-08	8,000	36,000	-	-	-	-
Oct-08	1,000	37,000	-	-	-	-
Nov-08	1,000	38,000	-	-	-	-
Dec-08	-	38,000	-	-	-	-
Jan-09	60	38,060	-	-	-	-
Feb-09	60	38,120	-	-	-	-
Mar-09	-	38,120	-	-	-	-
Apr-09	-	38,120	-	-	-	-
May-09	-	38,120	-	-	-	-
Jun-09	-	38,120	-	-	-	-
Jul-09	-	38,120	-	-	-	-
Aug-09	-	38,120	-	-	-	-
Sep-09	-	38,120	-	-	-	-
Oct-09	-	38,120	-	-	-	-

**Note:** \* Tenant has not yet commenced formal recycling activities within the lot



## Throughput of Champway Technology Limited (EP07-03)

Date	Waste Input (kg)			Product Output (kg)*				Waste Disposal (kg)*			
	Cooking Oil	Grease Trap Waste	Total	Treated Cooking Oil	Biodiesel	Glycerin	Total	Inorganic Waste	Organic Waste	Water Waste^	Total
Oct-08	120,000	-	120,000	-	-	-	-	-	-	-	-
Nov-08	8,000	-	8,000	-	-	-	-	-	-	-	-
Dec-08	2,000	-	2,000	-	-	-	-	-	-	-	-
Jan-09 <sup>#</sup>	93,454	-	93,454	86,912	-	-	86,912	-	4,673	1,869	6,542
Feb-09	86,855	-	86,855	80,775	-	-	80,775	-	4,343	1,737	6,080
Mar-09	88,883	-	88,883	82,661	-	-	82,661	-	4,444	1,778	6,222
Apr-09	82,530	-	82,530	76,753	-	-	76,753	-	4,127	1,650	5,777
May-09	91,022	-	91,022	84,650	-	-	84,650	-	4,551	1,820	6,371
Jun-09	114,143	-	114,143	106,153	-	-	106,153	-	5,707	2,283	7,990
Jul-09	106,287	-	106,287	98,847	-	-	98,847	-	5,314	2,126	7,440
Aug-09	115,096	58,190	173,286	161,156	-	-	161,156	-	8,664	3,466	12,130
Sep-09	125,091	41,950	167,041	155,348	-	-	155,348	-	8,352	3,341	11,693
Oct-09	145,139	324,800	469,939	437,043	-	-	437,043	-	23,497	9,399	32,896

**Notes:**\* Tenant has not yet commenced formal recycling activities within the lot

<sup>#</sup>Tenant revised the amount of waste cooking oil input in January 2009 from 4,443 kg to 93,454 kg

<sup>^</sup> Water waste includes slurry and semi-solid waste and is disposed of at landfill

## Throughput of Hong Kong Telford Envirotech Group Limited (EP08-01)

Date	Waste Input (kg)		Product Output (kg)*		Waste Disposal (kg)*	
	Waste Plastic	Cum Total	PO, PE, PET, PWC	Cum Total	General Refuse	Cum Total
Jul-09	20,000	20,000	-	-	-	-
Aug-09	-	20,000	-	-	-	-
Sep-09	-	20,000	-	-	-	-
Oct-09	-	20,000	-	-	-	-

**Note:** \* Tenant has not yet commenced formal recycling activities within the lot

## Appendix 4

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# Calibration Certificate of Infra Red Gas Analyser

**FUGRO TECHNICAL SERVICES LIMITED**

MaterialLab Division,  
Fugro Development Centre,  
5 Lok Yi Street, 17 M.S. Castle Peak Road,  
Tai Lam, Tuen Mun, N.T., Hong Kong.

Tel : +852-2450 8233  
Fax : +852-2450 6138  
E-mail : matlab@fugro.com.hk  
Website : www.materiallab.com.hk

**MaterialLab****REPORT ON CALIBRATION OF INFRA RED GAS ANALYSER**

Client : Fugro Technical Services Limited – MaterialLab Division

Sample description : One sample of Infra Red Gas Analyser (GA94A)

Sample identification : E / 084 / 1

Serial number : GA3385

Test required : Calibration

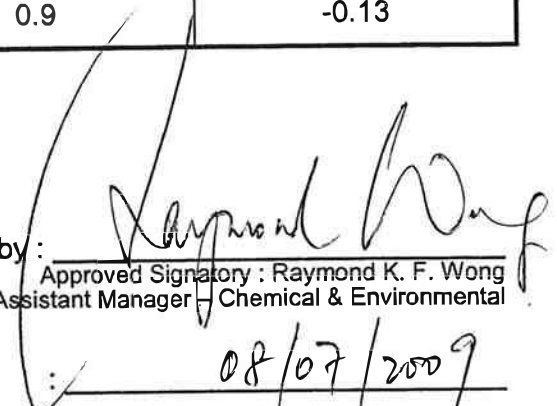
Date of calibration : 08/07/2009

Next calibration date : 08/01/2010

Method used : In-house method (Comparison with Standard Gas)

**Results :**

Parameters	Standard Gas Concentration, % volume	Infra Red Gas Analyser Reading, % volume	Deviation, % volume
Methane (CH <sub>4</sub> )	1.02	1.0	-0.02
Carbon dioxide (CO <sub>2</sub> )	1.01	1.0	-0.01
Oxygen (O <sub>2</sub> )	1.03	0.9	-0.13

Calibrated by : C. F. Leung
 Certified by :   
 Approved Signatory : Raymond K. F. Wong  
 Assistant Manager, Chemical & Environmental
Date : 08/07/2009*Note : This report refers only to the sample(s) tested.*

## Appendix 5

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# LFG Monitoring Results and Graphical Plots of Monitored Parameters

Contract No. EP/SP/53/06

Provision of Management Services for EcoPark in Tuen Mun Area 38

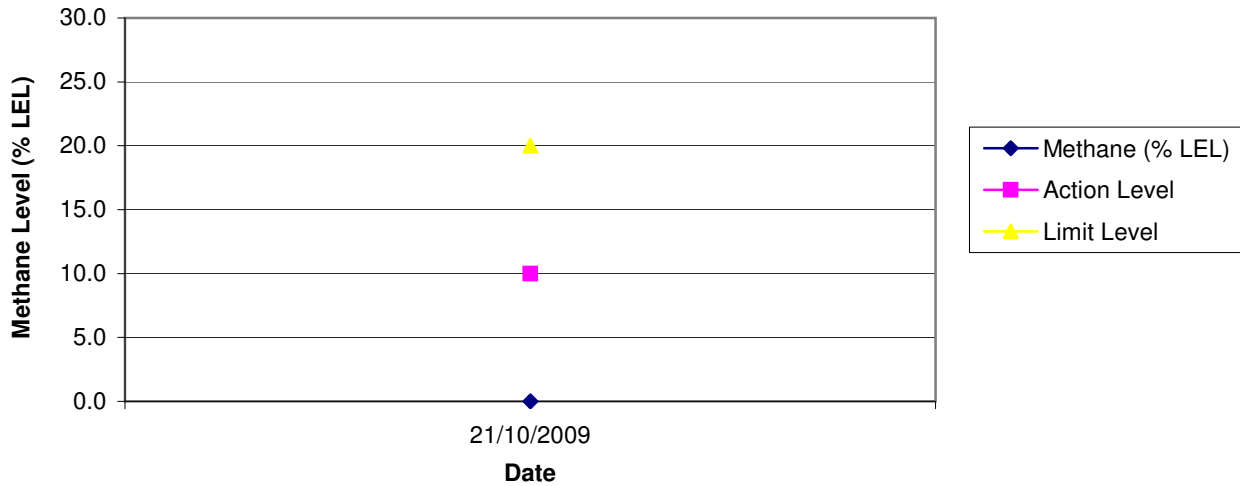
EM&A Services

Landfill Gas Monitoring Results - Oct 2009

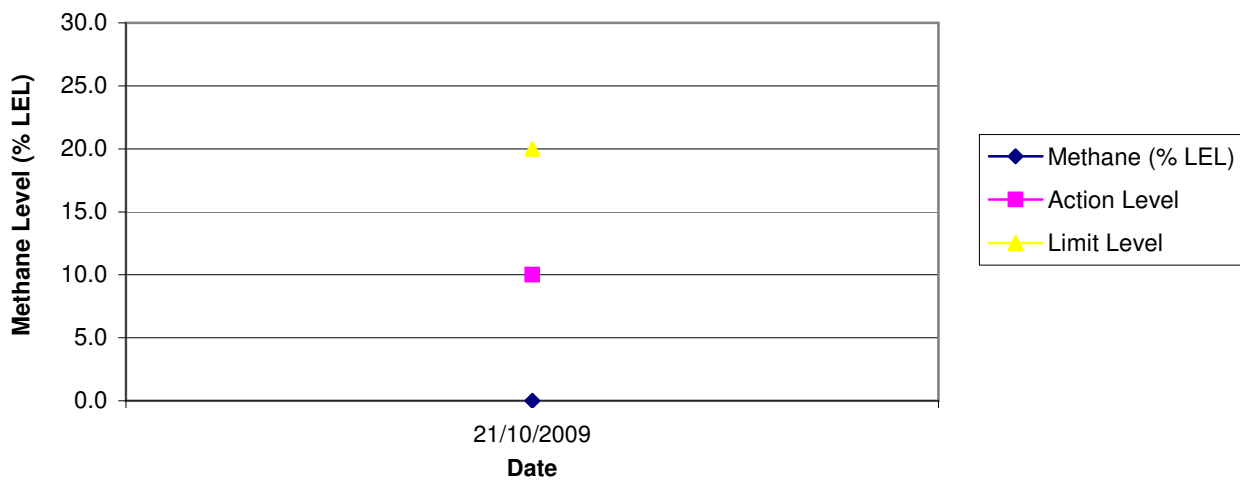
Monitoring Station ID	Monitoring Locations	Date	Weather Conditions	Temperature (degree)	Start Time	End Time	Measurement Results					Action Level			Limit Level			Remarks
							Methane		Oxygen	Carbon Dioxide	Barometric Pressure	Methane	Oxygen	Carbon Dioxide	Methane	Oxygen	Carbon Dioxide	
							% v/v	% LEL	% v/v	% v/v	mBar (absolute)	% LEL	% v/v	% v/v	% LEL	% v/v	% v/v	
EP1-1	Inside the landscaping area of Administration Building	21-Oct-09	Overcast	25	11:30	11:35	0.0	0.0	20.6	0.2	1015	> 10	< 19	> 0.5	> 20	< 18	> 1.5	Nil
EP1-2	PCCW below-ground chamber outside Lot EP08-01				11:45	11:50	0.0	0.0	20.1	0.0	1015							Nil
EP1-3	HGC Broadband below-ground chamber outside Lot EP08-03				11:55	12:00	0.0	0.0	20.0	0.0	1013							Nil

Note: (1) Shaded area indicates an exceedance of Limit Level

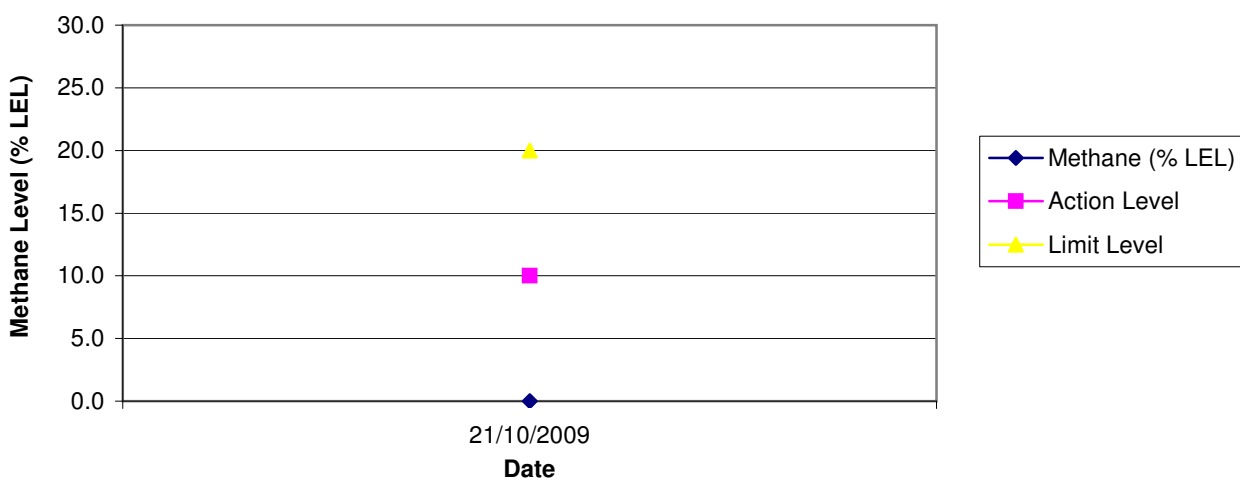
**Measured Methane Level (% LEL) at EP1-1**

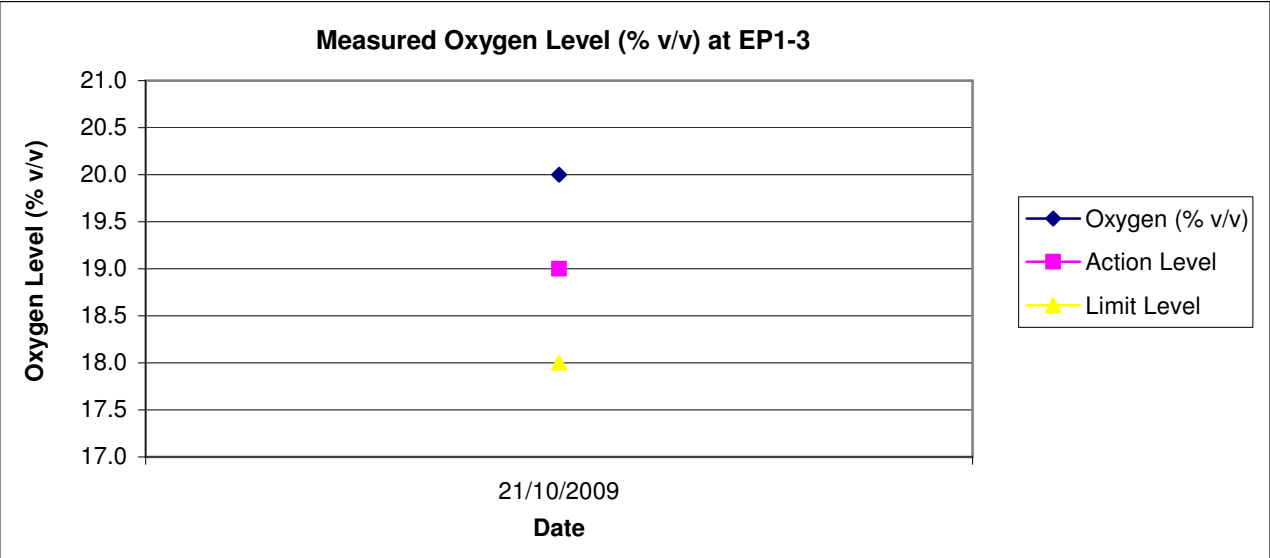
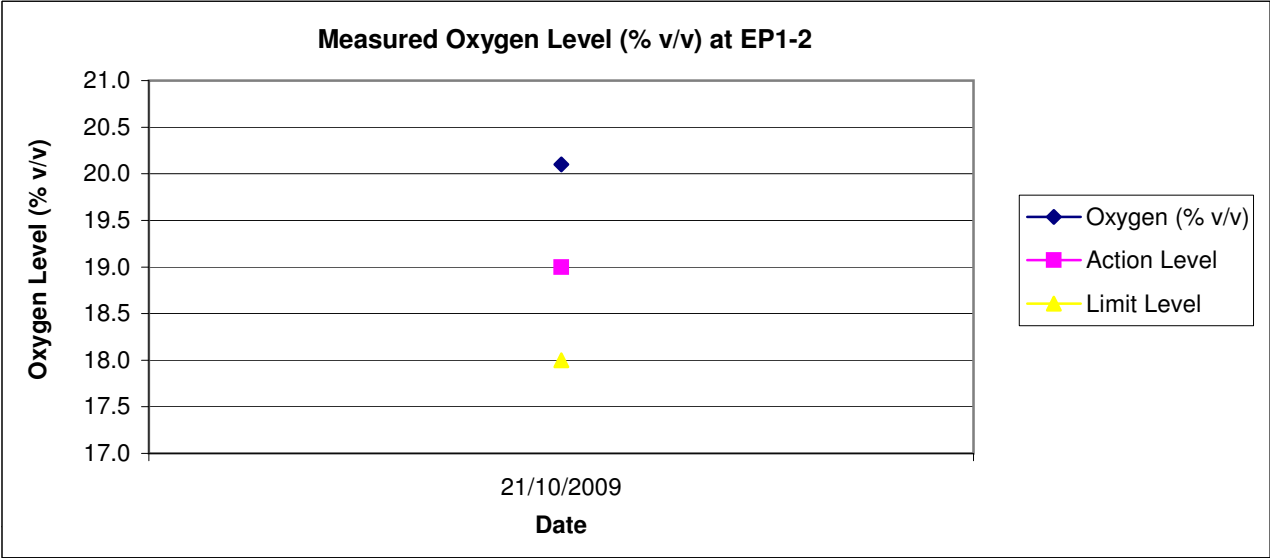
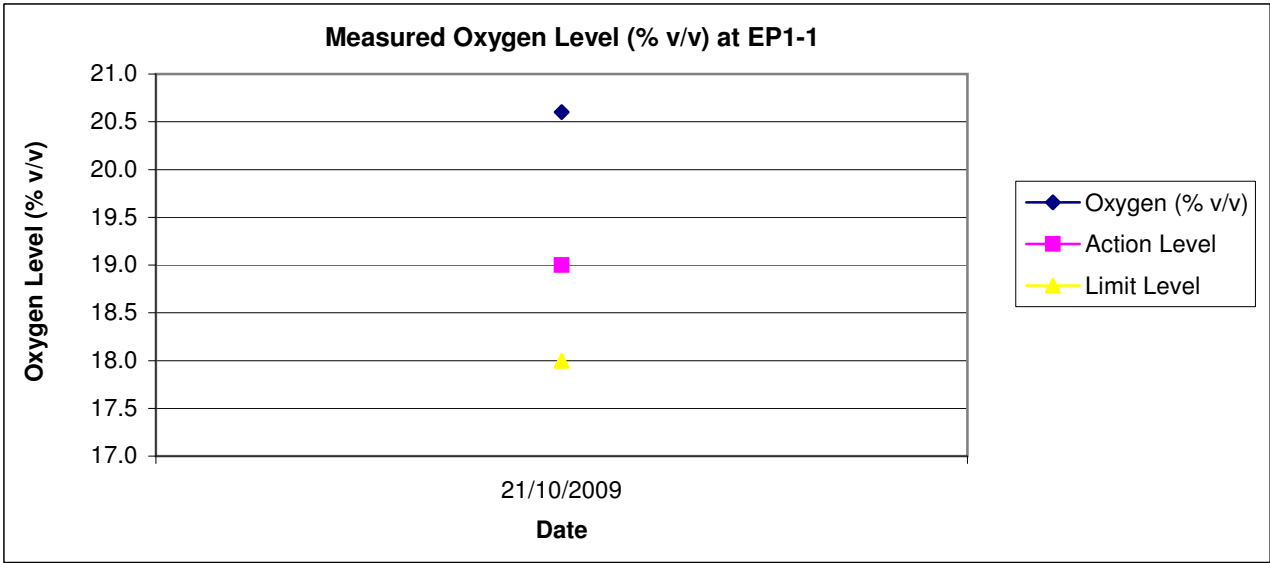


**Measured Methane Level (% LEL) at EP1-2**



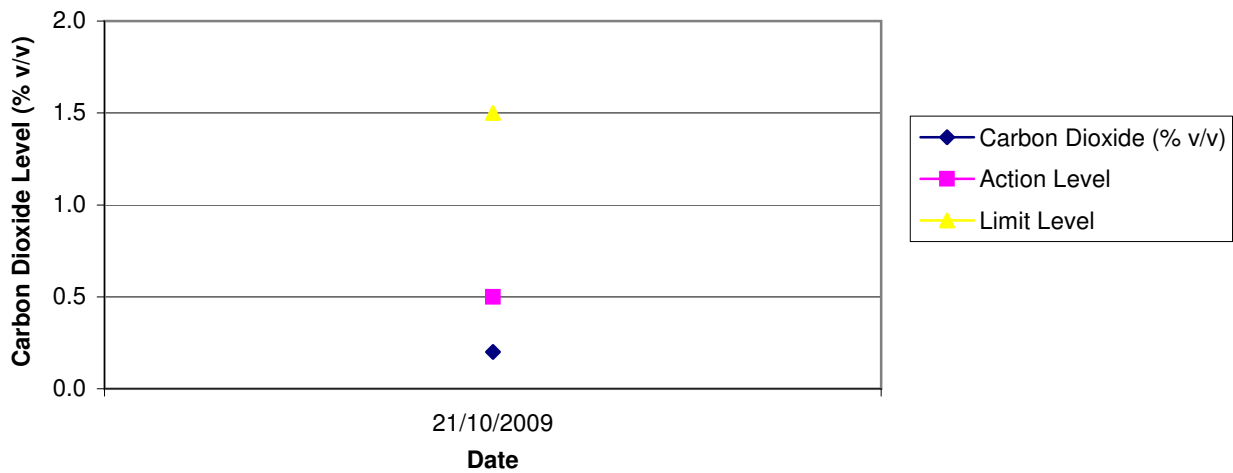
**Measured Methane Level (% LEL) at EP1-3**



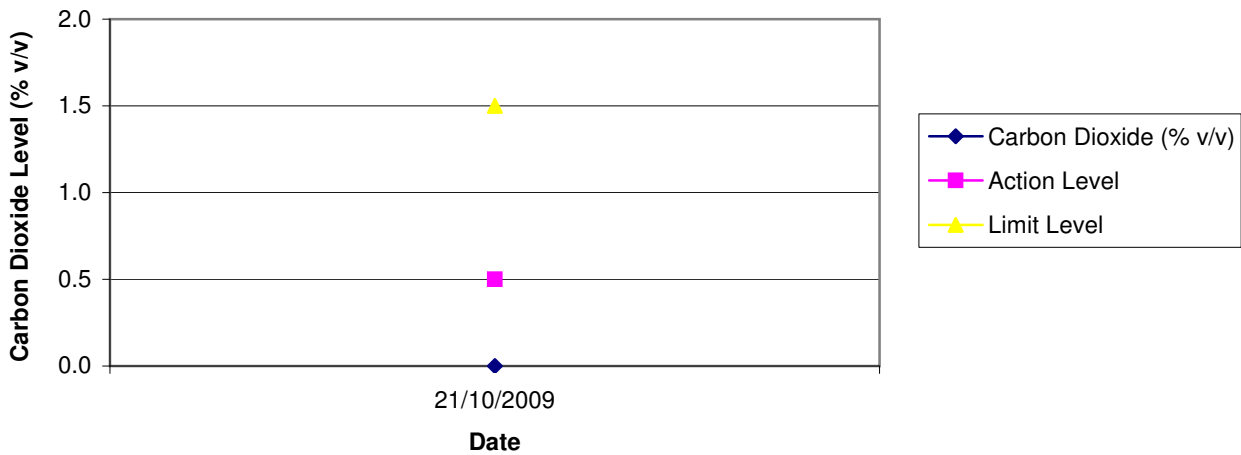




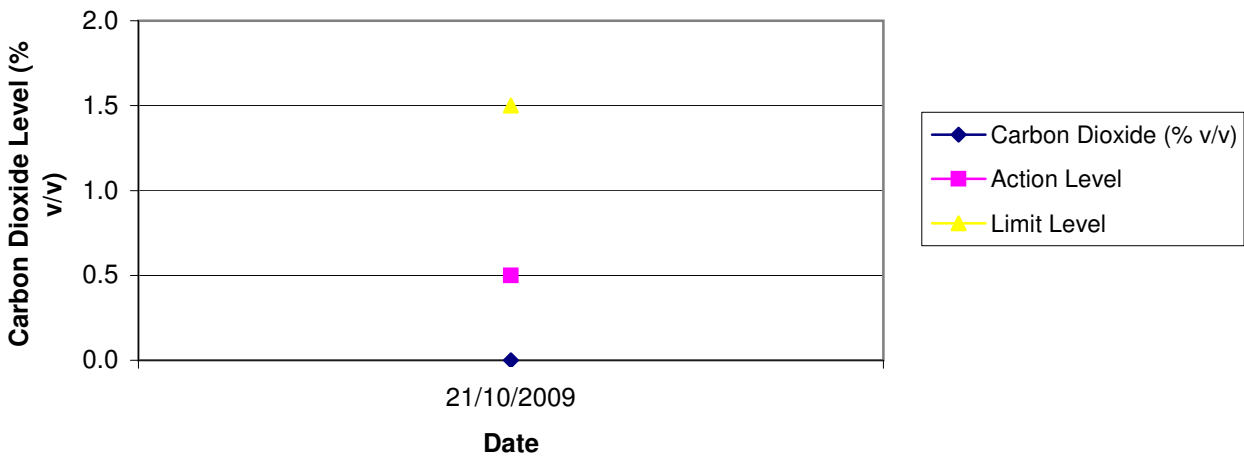
**Measured Carbon Dioxide Level (% v/v) at EP1-1**

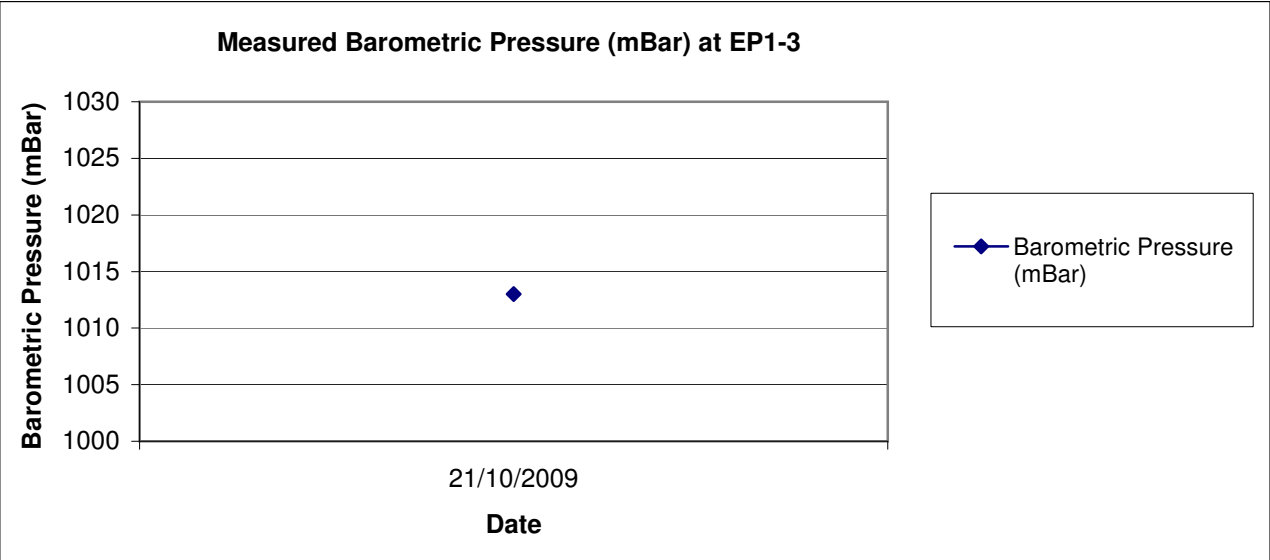
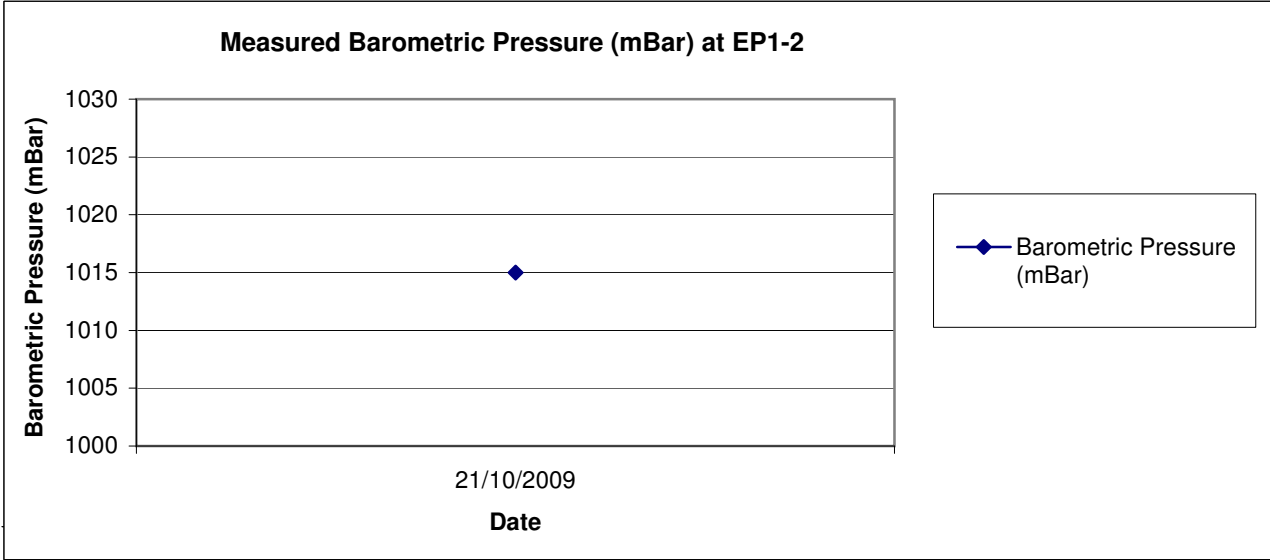
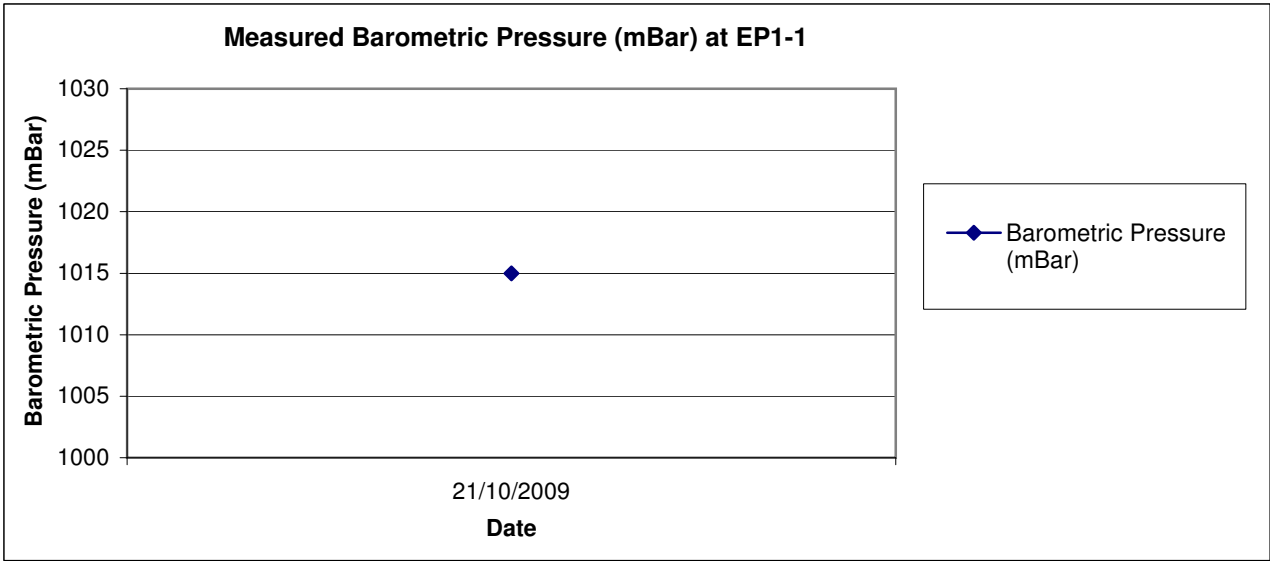


**Measured Carbon Dioxide Level (% v/v) at EP1-2**



**Measured Carbon Dioxide Level (% v/v) at EP1-3**





## Appendix 6

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# Written Reminder to Shiu Wing about Open Burning

本署檔案  
OUR REF : 5306-0505-807(09)  
來函檔案  
YOUR REF:  
電 話  
TEL NO : 2496 7633  
圖文傳真  
FAX NO : 2496 7588  
電子郵件  
E-MAIL :  
網 址  
HOMEPAGE : <http://www.epd.gov.hk/epd/ecopark>

**EcoPark Management  
Office**  
環保園管業處

133, Lung Mun Road,  
Tuen Mun Area 38  
New Territories, Hong Kong

香港新界屯門第 38 區  
龍門路 133 號



Mr. PONG Ka-ye, Daniel,

傳真：2845 9288

紹榮鋼鐵有限公司  
香港中環康樂廣場 1 號  
怡和大廈 3409 室

龐先生：

環保園租用土地 EP08-03

於二零零九年八月二十日，下午約四時許，保安員發現貴公司聘請之地盤工人在貴租用土地 EP08-03 內進行露天焚燒垃圾，發出濃煙及燒膠味。本公司職員即時到場通知工人弄熄火種及讓工人知悉，環保園工地不能進行露天焚燒及租用土地內可能有沼氣危險。

香港政府已於一九九六年立例禁止露天焚燒，煩請通知貴公司合約承判商有關規定並嚴格遵守。隨函附上有關法例指引小冊子以供參閱。

如有任何有關環保園之查詢或需協助，歡迎致電 2496 7633 與本處職員，我們必儘快回覆 閣下。

順祝  
生意興隆 業務蒸蒸日上！

Serco Guardian JV  
環保園 經理

A handwritten signature in black ink, appearing to read "韓贊就".

韓贊就 謹啓  
副本致：環境保護主任 - 蔡永健博士 (電郵)

日期：二零零九年八月二十一日



IMG\_1253



IMG\_1251



IMG\_1254



IMG\_1252

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## 1. 這本小冊子的目的是什麼？

這本小冊子的目的是講述露天焚燒的問題，並解釋空氣污染管制(露天焚燒)規例中管制露天焚燒的規定。該規例可在政府新聞處刊物銷售小組訂購或於網上「政府書店」選購，網址為<http://bookstore.esdlife.com>，另外也可在雙語法例資料系統內查閱，網址是<http://www.legislation.gov.hk>。如對規例有疑問，可向任何一間區域辦事處查詢，它們的地址載於附錄內。

## 2. 何謂露天焚燒？

露天焚燒是指在並無任何圍蔽及沒有煙囪將產生的煙霧妥善排放的情況下，於戶外焚燒任何物料。例如用露天焚燒方法，從電線或輪胎進行金屬回收，及於建造工地及郊野處置廢物，都是一般不當的露天焚燒行為。

## 1. What is the purpose of this guide?

The purpose of this guide is to describe the problems of open burning and explain the provisions for its control under the Air Pollution Control (Open Burning) Regulation. Copies of the regulations are on sale at the Publications Sales Section of the Information Services Department (ISD) and the online Government Bookstore at <http://bookstore.esdlife.com>. Also, they can be found on the website of the Bilingual Laws Information at <http://www.legislation.gov.hk>. Enquiries concerning the Regulation may be made to the Regional Offices and their addresses are given in the Annex.

## 2. What is Open Burning?

Open burning means burning of any materials in the open air without any enclosure nor any chimney to direct the smoke away so generated. For example, recovering metal from used electric wires or tyres, and disposal of wastes in construction sites and countryside by open burning are the common malpractice.

### 3. 它如何影響我們？

露天焚燒廢物會產生過量的污染物，如惡臭的濃煙、塵屑及有毒氣體等。這些排放物往往造成嚴重滋擾，及可能威脅鄰近居民的健康。

### 4. 我們如何處理

這個問題？

空氣污染管制（露天焚燒）規例完全禁止露天焚燒建造廢物、輪胎，以及為回收金屬而進行的露天焚燒。如在非常特殊情況下，其他必需進行的露天焚燒，則受許可證條文的管制。不會造成大量排放物的露天焚燒則不受規例管制。

### 3. How does it affect us?

Open burning of wastes generates excessive emissions of pollutants such as dense and odorous smoke, dust, and toxic fumes. These emissions often cause serious nuisances and may threaten the health of the people in the neighbourhood.

### 4. How do we deal with the problem?

The Air Pollution Control (Open Burning) Regulation is introduced to prohibit open burning of construction waste, tyres, and open burning for the salvage of metal. Under very special circumstances where open burning is absolutely necessary to be carried out, the burning operation will be subjected to the control of a permit. Some open burning activities not causing any substantial emissions are exempted from the control of the Regulation.



5. 我能否仍在指定的  
燒烤地點燒烤？

你仍可以享受燒烤樂。下列的露天焚燒不受規例的管制：

- 為祭祀用途而燃燒香燭冥鏹
- 為康樂用途而用火烹煮食物，如燒烤
- 由政府滅火部隊或機關為防火的測試、訓練及教育而點燃的火
- 純粹為除草、殺滅土地的細菌、防治害蟲而將生長在有關地點的物料作農業焚燒，或為於郊區設置防火帶而進行的焚燒
- 在緊急情況下為確保公眾安全所需的露天焚燒

6. 那種露天焚燒  
被禁止？

為下列用途而進行的露天焚燒被禁止：

- 建造廢物的處置
- 為建造工程作準備而清理工地
- 輪胎的處置
- 金屬的回收

5. **May I still barbecue  
in designated  
barbecue sites?**

Yes, you may still enjoy barbecue. The following open burning activities are exempted from the control of the Regulation:

- burning of incense, candle sticks, joss paper for ritual purposes
- fires for cooking of food such as barbecue for amenity purposes
- fires set for fire testing, training and education by any Government fire fighting force or agency
- agricultural burning of materials grown on site, solely for weeding, land disinfection, pest control, or burning to make firebreaks in the countryside
- open burning required for emergency situations to ensure public safety

6. **What types of open  
burning activities  
are prohibited?**

Open burning activities for the following purposes are prohibited:

- the disposal of construction waste
- the clearance of a site in preparation for construction work
- the disposal of tyres
- the salvage of metal

**7. 在什麼情況下  
可獲發許可證？**

規例的目的是阻止所有露天焚燒。因此，只有當監督完全確信並無其他可行辦法達致同樣目的時，才簽發許可證。如遇此情況，你可向附錄所列載的任何一間區域辦事處索取及呈交申請表格。每項申請的收費是港幣2,250元。

**8. 罰則如何？**

初犯者最高可被罰50,000元，並可就該罪行持續的期間，另處每15分鐘罰款500元；及其後再被定罪，最高可被判罰50,000元及監禁3個月，並可就該罪行持續的期間，另處每15分鐘罰款500元。

**7. Under what  
circumstances can  
I obtain a permit?**

The purpose of the Regulation is to stop all open burning. Therefore, a permit will be granted only if the Authority is fully satisfied that there is no viable alternative to achieve the purpose. If such a case arises, you may obtain the application form and submit it to any of our Regional Offices as listed in the Annex. A fee of \$2,250 will be charged for each application.

**8. What are the  
penalties?**

You will be liable to a maximum fine of \$50,000 on first conviction, plus \$500 for every 15 minutes for which the offence continues. For subsequent conviction, you will be liable to a maximum fine of \$50,000 and 3-month imprisonment, plus \$500 for every 15 minutes for which the offence continues.

## 9. 我如何能協助 保護環境？

作為社會的一分子，你應以身作則不要進行露天焚燒，並勸諭職員及他人遵守規例，協助保護環境。任何廢物應適當棄置在堆填區或在設有廢氣管制設備的循環再造廠進行循環再造。如你發現任何露天焚燒，請立刻向本署的區域辦事處（見附錄）舉報，以便執法人員能根據規例採取所需的法律行動以阻止露天焚燒。

## 9. How can I help protect the environment?

As a member of society, you can help protect the environment by refraining from carrying out prohibited open burning activities, and to advise your staff and others to abide by the regulation. Any waste should be properly disposed of at landfills or recycled at a recycling plant with emission control equipment. If you notice any open burning activities, please report the incident to our Regional Offices (see Annex) immediately so that our enforcement staff can take necessary legal action under the Regulation to stop further burning.

## 區域辦事處 Regional Offices

地區/地址 Districts / Address	電話 / 傳真 Telephone No. / Fascimile No.
環保署總區辦事處 香港灣仔軒尼詩道130號修頓中心28樓  EPD Territorial Control Office 28/F Southorn Centre 130 Hennessy Centre, Wanchai, Hong Kong	電話 Tel. 2835 1018  傳真 Fax 2838 2155
區域辦事處 (東) (西貢、觀塘、黃大仙、九龍城和油尖旺) 九龍九龍灣臨樂街19號南豐商業中心5樓  Regional Office (East) (Kwun Tong, Wong Tai Sin, Sai Kung, Yau Tsim Mong & Kowloon City) 5/F Nan Fung Commercial Centre, 19 Lam Lok Street, Kowloon Bay, Kowloon.	電話 Tel. 2755 5518  傳真 Fax 2756 8588
區域辦事處 (南) (香港島和離島) 香港鯉魚涌海灣街1號華懋交易廣場2樓  Regional Office (South) (Hong Kong Island & Islands) 2/F Chinachem Exchange Square, 1 Hoi Wan Street, Quarry Bay, Hong Kong.	電話 Tel. 2516 1718  傳真 Fax 2960 1760
區域辦事處 (西) (屯門、荃灣、葵青和深水埗) 新界荃灣西樓角路38號荃灣政府合署8樓  Regional Office (West) (Tuen Mun, Tsuen Wan, Kwai Tsing & Sham Shui Po) 8/F Tsuen Wan Government Office, 38 Sai Lau Kok Road, Tsuen Wan, N.T.	電話 Tel. 2417 6116  傳真 Fax 24113073
區域辦事處 (北) (元朗、沙田、大埔和北區) 新界沙田上禾輦路1號沙田政府合署10樓  Regional Office (North) (Yuen Long, Shatin, Tai Po & North) 10/F, Shatin Government office, No. 1 Sheung Wo Che Road, Shatin, N.T.	電話 Tel. 2158 5757  傳真 Fax 2685 1133

## Appendix 7





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# Approved Site Audit Checklist for Champway in October 2009

**AUDIT DETAILS**

<b>Tenant:</b>	Champway Technology Limited		
<b>Ref. No.:</b>	1		
<b>Inspection Date:</b>	21 October 2009	<b>Time :</b>	11:00 am
<b>Lot No:</b>	EP07-03		
<b>Weather Condition:</b>	<del>Sunny / Fine / Hazy / Overcast / Drizzle / Rain</del>	<b>Temperature:</b>	25°C
<b>Wind:</b>	<del>Calm / Light / Breeze / Strong</del>	<b>Humidity:</b>	<del>High / Moderate / Low</del>
<b>IEC Joint Inspection:</b>	Yes / No		

**SIGN-OFF**

<b>ET's Rep.</b>	<b>EcoPark Operator's Rep.</b>	<b>Tenant's Rep.</b>	<b>IEC's Rep. (if joint Inspection)</b>
			
Name: Antony Wong	Name: TC Hon	Name: Hoppy Chan	Name: Eric Lim

**1. GENERAL**

Item	Description	Yes	No	N/A	Remarks
1.1	EP for Tenant displayed on notice boards / at entrance?			✓	EP for EcoPark (EP No.: EP-226/2005/A) displayed at the entrance of EcoPark
1.2	Environmental Policy documented?			✓	Operator's Environmental Policy is documented
1.3	Environmental Management Plan updated?			✓	
1.4	a. Emergency Response Plan (ERP) documented?			✓	Operator's ERP is documented
	b. Drill / training records available?		✓		Tenant did not keep proper record for each activity
1.5	Employee's training record available?		✓		Tenant did not keep proper record for each activity
1.6	Any record of prosecution / complaint?			✓	
1.7	Waste Management Plan?			✓	Operator's Waste Management Plan is documented

## 2. WATER QUALITY

Item	Description	Yes	No	N/A	Remarks
2.1	Valid Effluent Discharge License available?	✓			Licence No.: WT00004430-2009
2.2	Any wastewater treatment facility prior to effluent discharge?		✓		
	If yes, facility is properly maintained and function normally?			✓	Maintained by licensed collectors twice a month
2.3	<b>Effluent Monitoring</b> a. Sampling / Monitoring Record available?		✓		With reference to the discharge licence, self-monitoring shall be performed when required
	b. Monitoring frequency met the license requirement?			✓	No sampling was undertaken
	c. Any exceedance?			✓	No sampling was undertaken
	d. If yes, follow-up action taken?			✓	No sampling was undertaken
2.4	Surface run-off control measures in place and adequately maintained?	✓			Regularly maintained
2.5	Surface run-off discharging into drainage system?	✓			
2.6	All manholes are covered?	✓			
2.7	Foam, oil, grease, litter or other objectionable matters in water of nearby drain / sewer are avoided?	✓			
2.8	Drainage system is well maintained to prevent flooding and overflow?	✓			
2.9	<b>Processes with high Risk of Contamination</b> a. Processes / activities are located under a covered area?	✓			
	b. Stop-logs installed in the perimeter drainage system for uncovered areas?			✓	The stop-logs shall be passed from the Operator to the Tenant, and they shall be placed near the drain
	c. Contaminated water collected in the surface drainage systems is treated at water treatment facility / other appropriate treatment facility?			✓	Not in operation
2.10	Equipment oil and lubrication replacements are performed only in bunded maintenance area?			✓	The replacement of equipment oil and lubrication (required by the heat (oil) transmission system) are carried out at off-site garages. This may be necessary once every ten years or not at all.
2.11	Oil interceptor provided for drainage discharging from maintenance area?	✓			
	If yes, oil and grease removed regularly?			✓	Not in use
	Collected by licenced collector?			✓	Ditto
2.12	<b>Cargo Handling</b> a. Cargo Handling Guideline is available and followed to minimize the chance of accidental spillage during loading and unloading?			✓	Ditto
	b. Materials and bulk cargo are properly packed?			✓	Ditto

### 3. AIR QUALITY

Item	Description	Yes	No	N/A	Remarks
3.1	a. Valid Specified Process License for all specified process available?	✓			SP No. L-25-017 (1)
	b. SP License conditions / monitoring requirements met?			✓	The process is not yet in operation.
3.2	<b>Odour</b>	✓			
	a. Any odour detected?	✓			
	b. If yes, can the source be identified?	✓			From the process
	c. Odorous materials are covered?	✓			
	d. If odour control system is installed, is it operating normally?	✓			
3.3	All dusty materials are sprayed with water or covered by impervious sheeting prior to any loading, unloading or transfer operation?			✓	Not likely to use dusty materials in the tenant lot
3.4	<b>Dust Monitoring</b>			✓	
	a. Monitoring Record available?			✓	
	b. Monitoring frequency met the requirement?			✓	
	c. Any exceedance?			✓	
	d. If yes, follow-up action taken?			✓	
3.5	Enclosures are provided around the main dust-generating activities?			✓	
3.6	Open burning is avoided?	✓			
3.7	Dark smoke emitted from chimney or powered plant is avoided?			✓	No chimney
3.8	Vehicles and equipment are switched off while not in use?	✓			
3.9	<b>Approval certificate issued by the Authority is available for furnace, oven or chimney consuming:</b>			✓	Cert. No.
	a. >25L of conventional liquid fuel per hour			✓	
	b. >35kg of conventional solid fuel per hour			✓	
	c. >1,150 MJ of any gaseous fuel per hour			✓	
3.10	Approval from Authority is available for the use of liquid fuel with a viscosity point of ignition >30 centistokes or an equivalent viscosity?			✓	
3.11	Dust collected by any air pollution control equipment installed by tenants must be tested to ensure compliance for landfill disposal.			✓	
3.12	a. Approval from Authority for the use of controlled refrigerant?			✓	
	b. If yes, record of refrigeration equipment service available?			✓	
3.13	All air pollution control systems are properly maintained and function normally?	✓			
3.14	Only Ultra-Low Sulphur Diesel is used?	✓			Used by all diesel vehicles, fork-lift truck and emergency generator.





#### 4. WASTE / CHEMICAL MANAGEMENT

Item	Description	Yes	No	N/A	Remarks
4.1	Chemical Waste Producer Registration completed?			✓	Reg. No.
4.2	Provision of sufficient waste disposal points/ receptacles?			✓	
4.3	Waste disposed of regularly and properly?	✓			Twice a week
4.4	Sorting of materials on-site for reuse or disposal to designated outlet?		✓		
4.5	Record of quantities of waste generated, recycled and disposed properly kept and easily retrieved for inspection?	✓			
4.6	Sludge is collected by a licensed collector at regular intervals?	✓			
4.7	<b>Packaging of Chemical Waste</b>				
	a. Stored in suitable container?			✓	
	b. Container properly closed or sealed?			✓	
	c. Spillage cleaned up immediately through the use of an absorbent?			✓	
	d. Approval obtained for capacity of containers > 450L?			✓	
4.8	<b>Labelling of Chemical Waste</b>				
	a. Label is securely attached, clean and visible?			✓	
	b. Label is in proper dimension and bilingual?			✓	
	c. Information is accurate and sufficient?			✓	
4.9	<b>Storage of Chemical Waste</b>				
	a. Proper "Chemical Waste" signs are displayed?			✓	
	b. Incompatible wastes separated by an impermeable partition?			✓	
	c. Containers kept in cabinet or receptacle of suitable material and construction ( <i>if quantity &lt; 50L</i> ) <u>or</u> drip trays capable of storing 110% of the volume of the largest ( <i>if quantity &gt; 50L</i> ) ?			✓	
	d. Enclosed on 3 sides with no less than 2m in height or height of tallest container or stack of containers?			✓	
	e. Containers with chemical waste are properly stored and locked at designated area which is clean and dry?			✓	
	f. Adequacy of area ventilation?			✓	
	g. Outdoors storage area should be covered?			✓	
4.10	Chemical wastes are collected by a licensed chemical waste collector? (retention of trip ticket copies for 12 months)			✓	
4.11	<b>Liquid Waste Storage</b>				
	a. Storage area floor/surface permeation-proof?			✓	
	b. Capacity of retention structure sufficient to accommodate contents of the largest container or 20% volume of waste in storage?			✓	
	c. Walls or partitions of stacked container storage area constructed of impermeable material?			✓	

## 5. OTHER ISSUES

Item	Description	Yes	No	N/A	Remarks
5.1	<b>Landfill Gas Hazard (within LFG Consultation Zone)</b>			✓	Outside the LFG consultation zone
	a. Workers and visitors alerted to possible LFG hazards?			✓	
	b. Smoking and open fires prohibited?			✓	
5.2	Security lighting directed downward into the work areas to prevent glare to the surrounding receivers?			✓	
5.3	Good housekeeping?	✓			
5.4	Any areas within the lot to be used for recycling processes are concrete paved?	✓			
5.5	Valid calibration certificate for any monitoring equipment?			✓	
5.6	<b>Dangerous Goods</b>			✓	Licence has been applied, approval is pending
	a. Valid license for manufacturing / storing dangerous goods?			✓	
	b. Storage area in compliance with the approved plan?			✓	
	c. Storage area(s) has been securely locked?			✓	
	d. Total storage capacity in compliance with the relevant statutory requirement?			✓	
	e. Proper Labelling?			✓	
	f. Dangerous goods properly packaged?			✓	
5.7	Potential stagnant pools cleared and mosquito breeding prevented?			✓	

## 6. OBSERVATIONS / FOLLOW UP / PHOTOGRAPHS

No.	Observation (Please include location and recommended remedial action)	Expected Date for Action Taken	Photo Ref. No.
1	<p>The storage of transmission oil near power station may cause potential land contamination. The tenant was reminded to provide drip tray underneath or bund it and label the oil drums.</p> 	13 Nov 2009	1
2	<p>Gaps were found between the bund of oil drums storage area near tenant lot EP07-02. The tenant was reminded to seal the gaps.</p> 	13 Nov 2009	2
No.	Follow-up from Previous Audit Dated _____ (Please state date of previous audit)	Completed / Outstanding?	Photo Ref. No.

[ Photographs Attached ]

## Appendix 8

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# LFG Monitoring Results of Shiu Wing



*New*

安全科技有限公司  
Safetech Limited

Biosystems MultiPro  
Calibration and Final Test Report

Instrument s/n: 47508                      Certificate number: G10085  
Part number: 54-48-314                  Cal. gas lot: 576701 Cyl 85  
Services date: 10 August 2009

Sensor Type	Sensor S/N	Calibration Gas	Span Gas	Max Adjustment	Low Alarm	High Alarm	TWA Alarm	STEL Alarm
O2	32569231	Oxygen	20.9 %	N/A	19.5	23.5	N/A	N/A
LEL	L0903130176	Propane (Equivalent)	50 % LEL	244	10	20	N/A	N/A
CO/H2S	033152	Carbon Monoxide	50 PPM	87	25	100	25	100
CO/H2S	033152	Hydrogen Sulfide	25 PPM	53	10	20	10	15

LCD Display: Good condition                  Accessories: Good condition  
Construction: Good condition  
Sampling Pump: Good condition, flow = 460 ml/min (79973)

**Remark:**

- Calibration gas concentration:  
Oxygen: 18%, Propane (Equivalent): 50% LEL, Carbon monoxide: 50 PPM, Hydrogen sulfide: 25 PPM.
- New purchase.

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**This is to certify that the equipment shown above have been tested and calibrated according to manufacturer's specifications and the results are SATISFACTORY.**

For **SAFETECH LIMITED**



Authorized Signature with Company Chop

## 氣體測試報告

報告編號： CBK/ECP/907/001

測試日期： 23/10/09

項目名稱： Recycling of Waste Metals Project at Eco Park

地點： Sunken RCC Plant Plinth for Scrap Loader

### 大氣測試

儀器型號： Biosystems MultiPro

氧氣 O <sub>2</sub>	可燃氣體 LEL	硫化氫 H <sub>2</sub> S	一氧化碳 CO
19.5% - 23%	0% - 10%	0 - 10 ppm	0 - 25 ppm
20.9	0	0	0

注意：若氣體測試結果超出上列的安全標準，首先用吹風機通風最少 30 分鐘，然後再進測試，若果仍超出安全標準，應立即禁止任何人進入並通知東主、工程監督、管工及有關人員。

批准進入
  危險 - 不准進入
  需清洗後再進行測試

測試員姓名： W.M.Chan

職位： Safety Officer

簽署：

## 氣體測試報告

報告編號： CHK/ECR/ECR/001

測試日期： 24/10/09

項目名稱： Recycling of Waste Metals Project at Eco Park

地點： New Lavatory

### 大氣測試

儀器型號： Biosystems MultiPro

氧氣 O2	可燃氣體 LEL	硫化氫 H2S	一氧化碳 CO
19.5% - 23%	0% - 10%	0 - 10 ppm	0 - 25 ppm
20.4	0	0	0

**注意：**若氣體測試結果超出上列的安全標準，首先用吹風機通風最少 30 分鐘，然後再進測試，若果仍超出安全標準，應立即禁止任何人進入並通知東主、工程監督、管工及有關人員。

批准進入

危險 - 不准進入

需清洗後再進行測試

測試員姓名： W. M. Chan

職位： Safety Officer

簽署： 

## 氣體測試報告

報告編號： CSK/ECP/9CR/003

測試日期： 27/10/09

項目名稱： Recycling of Waste Metals Project at Eco Park

地點： Between Conc. Plinth 3 and Transformer Room.

### 大氣測試

儀器型號： Biosystems MultiPro

氧氣 O2	可燃氣體 LEL	硫化氫 H2S	一氧化碳 CO
19.5% - 23%	0% - 10%	0 - 10 ppm	0 - 25 ppm
20.4	0	0	0

注意：若氣體測試結果超出上列的安全標準，首先用吹風機通風最少 30 分鐘，然後再進測試，若果仍超出安全標準，應立即禁止任何人進入並通知東主、工程監督、管工及有關人員。

批准進入

危險 - 不准進入

需清洗後再進行測試

測試員姓名： W.M. Chan

職位： Safety Officer

簽署： \_\_\_\_\_