China Harbour Engineering Company Limited

Contract No. DC/2009/09 Construction of Tai Po Sewage Treatment Works – Stage V Phase II B

Monthly Environmental Monitoring and Audit Report for August 2012

(Version 2.0)

Certified By	(Environme	htal Team Leader)
REMARKS:		

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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EXECUTIVE SUMMARY

Introduction

- 1. This is the 26th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for DSD Contract no. DC/2009/09 "Construction of Tai Po Sewage Treatment Works – Stage V Phase IIB". This report documents the findings of EM&A Works conducted in August 2012.
- 2. The major site activities undertaken in the reporting month included:
 - Cable ducting works;
 - Construction of Aeration Tanks, Mixed Liquor Channel, Primary Sedimentation Tank no.5, Sludge Draw-off Chamber No. 4, Flow Meter Chamber FMC1B, Cable Draw Pit and Laying Cable Duct, FC8B and FC10B;
 - Construction of concrete plinths for Combined Heat and Power Generator at Stage I/II Works;
 - Excavation for DN900 Sewage Pipe;
 - Excavation for FMC2B;
 - Excavation for Sludge Digestion Tank No. 3;
 - Finishing works at proposed Switch Room, Decanting Chamber and Chemical & Oil Store;
 - Finishing works on existing SAS Thickening House;
 - Gas pipes from Valve Chamber for Bio-gas Holding Tank to Waste Burner and proposed Gas Transfer Station;
 - Installation of DN1500 Air Main;
 - Installation of irrigation system;
 - Installation of Steel Bridges, Open Mesh Flooring, Aluminium Handrailing at Aeration Tanks;
 - Landscaping works;
 - Modification works at Chlorination House and Chemical House; and
 - Pile Load Test at FC9B.

Environmental Monitoring and Audit Works

- 3. Environmental monitoring and audit works for the Project were performed regularly as stipulated in the Final EM&A Manual and the results were checked and reviewed. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
- 4. Summary of the events and action taken in the reporting month is tabulated in **Table I**.

Table I

Summary Table for Events Recorded in the Reporting Month

Davamatar	No. of Exceedance		No. of Events	A ation Takan	
Parameter	Action Level	Limit Level	Due to this Project	Action Taken	
1-hr TSP	0	0	0	N/A	
24-hr TSP	0	0	0	N/A	
Noise	0	0	0	N/A	

5. In the reporting month, excavation works were undertaken within the 250m Consultation Zone of Shuen Wan Landfill. Landfill gas monitoring was performed by the Safety Officer of the Contractor. All the measured results were complied with the Limit Levels.

Environmental Licenses and Permits

6. Environmental related licenses/permits granted to the Project include the Environmental Permit (EP) for the Project, the Discharge Licence, Construction Noise Permit and the Waste Disposal (Chemical Waste) Licence.

Key Information in the Reporting Month

7. Summary of key information in this reporting month is tabulated in **Table II**.

 Table II
 Summary Table for Key Information in the Reporting Month

Event	ŀ	Event Details	Action Taken	Statura	Domonia
Event	Number	Nature	Action Taken	Status	Remark
Complaint received	0		N/A	N/A	
Changes to the assumptions and key construction / operation activities recorded	0		N/A	N/A	
Status of submissions	1	Quarterly EM&A Report (April to June 2012)	Submitted to EPD on 3 rd August 2012 (EP condition 6.6)	N/A	
under EP	I	Monthly EM&A Report (July 2012)	Submitted to EPD on 20 th August 2012 (EP condition 6.6)	N/A	
Notifications of any summons & prosecutions	0		N/A	N/A	

Future Key Issues

- 8. Major site activities for the coming two months will include:
 - Cable ducting works;
 - Construction of concrete plinths for Combined Heat and Power Generator at Stage I/II Works;
 - Construction of DN1000 scum pipe between RAS Pumping Station and FMC2B;
 - Construction of FC10B, MLC and Foam Removal Chamber;
 - Construction of FMC2B, Aeration Tank No. 7 and Sludge Digestion Tank No. 3;
 - Demolition Draw-off Chamber No.3 and Control Room;
 - Drainage and Excavation works;
 - Excavation for FC9B;
 - Finishing works for Gas Transfer House, proposed Switch Room, Decanting Chamber and Chemical & Oil Store;
 - Installation of Cat-ladders, Handrailings and Steel Bridges;
 - Installation of DN1500 air main & DN900 sewage pipeline;
 - Installation of Irrigation System;
 - Landscaping works;
 - Modification works at Chlorination House into Gas Transfer Station;
 - Piling works at MCL & Sludge Draw-off Chamber No. 3;

- Proof drilling at FC9B; and
- Water-tightness test for FC8B and Sludge Draw-off Chamber No. 4.
- 9. The future environmental concerns are air quality, noise impacts, waste management and surface runoff from construction works.

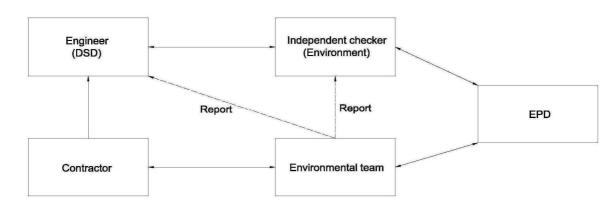
1 INTRODUCTION

Background

- 1.1 Tai Po Sewage Treatment Works (TPSTW) is located within the Tai Po Industrial Estate. It currently comprises four Stages: I, II, IVA and IVB works. The TPSTW - Stage V aims to upgrade the existing STW to provide additional sewage treatment capacity from the present design flow of 88,000 m³/day to 130,000 m³/day to meet the demands of both the existing and future developments, and to meet the revised discharge license requirements.
- 1.2 The TPSTW Stage V, Phase I and Phase II are Designated Projects under the Environmental Impact Assessment Ordinance (Cap. 449) with the same EIAO Register No. AEIAR 081/2004. A study of environmental impact assessment (EIA) was undertaken to evaluate various environmental impacts associated with the works within these two Designed Projects. An EIA Report as well as an Environmental Monitoring and Audit (EM&A) Manual were approved by the Environmental Protection Department (EPD) on 28 October 2004.
- 1.3 The Stage V works will be implemented in 2 phases. The design capacities of Phase I and Phase II works are 100,000 m³/d and 130,000 m³/d respectively. An Environmental Permit (EP) No. EP-265/2007 was issued on 22 March 2007 for the TPSTW Stage V Phase II to the Drainage Services Department (DSD) as the Permit Holder. The project "Tai Po Sewage Treatment Works Stage V Phase IIB" formed part of the Phase II works, includes additional secondary treatment process units (1 primary clarifier; 3 bioreactors and 2 final clarifiers) in TPSTW for its future extended plant design capacity of 120,000 m³/day. A master construction programme of the Project is provided in Appendix N. A site layout plan is provided in Figure 1.1. The construction activities of the Project commenced on 3 July 2010.
- 1.4 Cinotech Consultants Ltd. was commissioned by the Contractor as the Environmental Team (ET) to undertake the EM&A works for the Project. Dr. Priscilla CHOY of Cinotech Consultants Ltd. was appointed as the ET Leader as per the Condition 2.1 of the EP. Ove Arup and Partners Hong Kong Limited. was appointed as the IEC under Condition 2.2 of the EP. This is the 26th monthly EM&A report summarizing the EM&A works for the Project in August 2012.

Project Organizations

- 1.5 Different parties with different levels of involvement in the project organization include:
 - Project Proponent / Engineer's Representative (ER) Drainage Services Department
 - Environmental Team (ET) Cinotech Consultants Ltd.
 - Independent Environmental Checker (IEC) Ove Arup and Partners Hong Kong Limited
 - Contractor China Harbour Engineering Company Ltd.
- 1.6 The responsibilities of respective parties are detailed in Section 1.10 of the Final EM&A Manual of the Project.
- 1.7 The Project Organization during Construction Phase



1.8 The key contacts of the Project are shown in **Table 1.1**.

Party	Role	Name	Position	Phone No.	Fax No.	
		Mr. LAI cheuk-ho	Chief Engineer	2594 7500	2827 8700	
DSD	SP Division	Mr. IP Shu-kuen	Senior Engineer	2594 7502		
		Mr. TSANG Lap-kei	Engineer	2594 7459		
		Dr. Priscilla CHOY	ET Leader	2151 2089		
Cinotech	Environmental Team	Mr. Ken CHENG	Project Coordinator and Audit Team Leader	2151 2077	3107 1388	
		Mr. Henry LEUNG	Monitoring Team Leader	2151 2087		
A mun	Independent Environmental	Mr. Coleman NG	Independent Environmental Checker	2268 3097	2865 6402	
Arup	Checker	Mr. Lawrence KAN	Assistant to Independent Environmental Checker	2268 3212	2865 6493	
		Mr. TK CHEUNG	Project Manager	9863 2954		
CHEC	Civil Contractor	Mr. Aaron AU	Site Agent	6345 0754	2603 6899	
		Mr. Jason TSE	Environmental Officer	9320 3608		

Table 1.1Key Project Contacts

Construction Programme

- 1.9 The site activities undertaken in the reporting month were:
 - Cable ducting works;
 - Construction of Aeration Tanks, Mixed Liquor Channel, Primary Sedimentation Tank no.5, Sludge Draw-off Chamber No. 4, Flow Meter Chamber FMC1B, Cable Draw Pit and Laying Cable Duct, FC8B and FC10B;
 - Construction of concrete plinths for Combined Heat and Power Generator at Stage I/II Works;
 - Excavation for DN900 Sewage Pipe;
 - Excavation for FMC2B;
 - Excavation for Sludge Digestion Tank No. 3;
 - Finishing works at proposed Switch Room, Decanting Chamber and Chemical & Oil Store;
 - Finishing works on existing SAS Thickening House;
 - Gas pipes from Valve Chamber for Bio-gas Holding Tank to Waste Burner and proposed Gas Transfer Station;
 - Installation of DN1500 Air Main;
 - Installation of irrigation system;
 - Installation of Steel Bridges, Open Mesh Flooring, Aluminium Handrailing at

Aeration Tanks;

- Landscaping works;
- Modification works at Chlorination House and Chemical House; and
- Pile Load Test at FC9B.

Summary of EM&A Requirements

- 1.10 The EM&A programme requires construction phase air quality and noise monitoring as well as environmental site audits. The EM&A requirements are described in the following sections, including:
 - All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event / Action Plans;
 - Environmental mitigation measures, as recommended in the project EIA study final report; and
 - Environmental requirements in contract documents.
- 1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 5 of this report.
- 1.12 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters, namely air quality and noise as well as audit works for the Project in the reporting month.

2 AIR QUALITY MONITORING

Monitoring Requirements

- 2.1 Monitoring of 1-hour and 24-hour Total Suspended Particulates (TSP) was conducted to monitor the air quality during construction phase. Appendix A shows the established Action/Limit Levels for the environmental monitoring works.
- 2.2 In accordance with Section 2.30 of the EM&A Manual, a baseline checking of ambient TSP levels shall be carried out every six months at each monitoring station, when no dusty works activities are in operation. The number and location of monitoring stations and parameters shall be reviewed by ET Leader every three months according to section 8.8 of EM&A Manual.

Monitoring Locations

2.3 Impact air quality monitoring was conducted at the 3 monitoring stations, as shown in **Figure 1.2**. **Table 2.1** describes the locations of the air quality monitoring stations.

Monitoring Stations	Description	Location of Measurement
CAM1	Government Staff Quarters	Rooftop
CAM2	Hung Hing Printing Centre	On the site boundary just next to the Hung Hing Printing Centre
CAM3	Talcon Industrial Ltd.	On the site boundary just next to Talcon Industrial Ltd.

Table 2.1Locations for Air Quality Monitoring

Monitoring Equipment

2.4 **Table 2.2** summarizes the equipment used for the air quality monitoring.

Table 2.2Air Quality Monitoring Equipment

Equipment	Model and Make	Qty.
	Graseby GMW 2310 HVS, Model GS-2310105-1, Serial no. 10239 and 0810	2
HVS	Tisch Environmental, Inc.; Model no. TE-5170, Serial no. 1704	1
Calibrator	Thermo Andersen.; Model no. G25A Serial no. 1536	1

Monitoring Parameters, Frequency and Duration

2.5 **Table 2.3** summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period.

Monitoring Stations	Parameter	Duration	Period	Frequency
CAM1, CAM2 and CAM3	1-hour TSP	1 hour	During daytime period	3 times / 6-day
	24-hour TSP	24 hours	24 hours	Once / 6-day

 Table 2.3
 Impact Dust Monitoring Parameters, Frequency and Duration

Monitoring Methodology and QA/QC Procedure

Instrumentation

2.6 High Volume Samplers (HVS) connected with appropriate sampling inlets were employed for air quality monitoring. Each sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

HVS Installation

- 2.7 The following guidelines were adopted during the installation of HVS:
 - Sufficient support was provided to secure the samplers against gusty wind.
 - No two samplers were placed less than 2 meters apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
 - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
 - No furnaces or incineration flues were nearby.
 - Airflow around the sampler was unrestricted.
 - The samplers were more than 20 meters from the drip line.
 - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

Filters Preparation

- 2.8 Fiberglass filters were used which have a collection efficiency of larger than 99% for particles of 0.3 μm diameter. A HOKLAS accredited laboratory, Wellab Ltd., was responsible for the preparation of pre-weighed filter papers for Cinotech's monitoring team.
- 2.9 All filters, which were prepared by Wellab Ltd., were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than \pm 3 °C; the relative humidity (RH) was < 50% and not variable by more than \pm 5%. A convenient working RH was 40%.
- 2.10 Wellab Ltd. has a comprehensive quality assurance and quality control programmes.

Operating/Analytical Procedures

2.11 Operating/analytical procedures for the TSP monitoring were highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the air quality monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts to avoid air leakage at the edges.
- The shelter lid was closed and secured with the aluminum strip.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- The flow rate of the HVS sampler would be verified to be constant and recorded on the data sheet after sampling.
- After sampling, the filter was removed and sent to the Wellab Ltd. for weighing. The elapsed time was also recorded.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment should be between 25°C and 30°C and not vary by more than ± 3 °C; the relative humidity (RH) should be < 50% and not vary by more than $\pm 5\%$. A convenient working RH is 40%. Weighing results were returned to Cinotech for further analysis of TSP concentrations collected by each filter.

Maintenance/Calibration

- 2.12 The following maintenance/calibration was required for the HVS:
 - The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
 - Calibration of the HVS (five point calibration) using Calibration Kit was carried out every two months. Copies of calibration certificates are attached in **Appendix B**.
 - The HVS calibration orifice will be calibrated annually.

Results and Observations

- 2.13 In the reporting month, 1-hr TSP monitoring was carried out as schedule at each designated monitoring station on 13 occasions. 24-hr TSP monitoring was carried out as scheduled at each designated monitoring station on 5 occasions. The monitoring schedule was updated and is shown in **Appendix C**. The weather during the monitoring sessions was mainly sunny and cloudy.
- 2.14 All measured 1-hr and 24-hr TSP levels were below the Action/Limit Levels. No exceedance was recorded in the reporting month.
- 2.15 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices D** and **E**, respectively.

	report	ing month			
Paramete r	Minimum µg/m ³	Maximum μg/m ³	Average μg/m ³	Action Level, μg/m ³	Limit Level, µg/m ³
1-hr TSP (CAM1)	51	157	100	315	500
24-hr TSP (CAM1)	35	59	49	171	260
1-hr TSP (CAM2)	57	220	132	336	500
24-hr TSP (CAM2)	48	76	65	177	260
1-hr TSP (CAM3)	81	257	144	344	500
24-hr TSP (CAM3)	43	79	67	192	260

Table 2.4Summary Table of Air Quality Monitoring Results during the
reporting month

2.16 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Station	Major Pollution Source
CAM1 – Government Staff Quarters	Road Traffic Dust
CAM2 – Hung Hing Printing Centre	Road Traffic Dust and Excavation
CAM3 – Talcon Industrial Ltd.	Road Traffic Dust and Excavation

3 NOISE MONITORING

Monitoring Requirements

- 3.1 Noise monitoring was conducted in accordance with the EM&A Manual. Appendix A shows the established Action and Limit Levels for the environmental monitoring works.
- 3.2 The number and location of monitoring stations and parameters shall be reviewed by ET Leader every three months according to section 8.8 of EM&A Manual.

Monitoring Locations

3.3 Noise monitoring was conducted at one designated monitoring station as presented in **Table 3.1**. **Figure 1.2** shows the locations of the monitoring station.

Table 3.1Location of Noise Monitoring Station

Monitoring Station	Description	Location of Measurement
NM1	Government Staff Quarters	The corridor at the first floor.

Monitoring Equipment

3.4 **Table 3.2** summarizes the noise monitoring equipment model being used.

Table 3.2Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	SVANTEK - SVAN 957	2
Calibrator	SVANTEK - SV30A	2
Wind Speed Anemometer	Vane Anemometer, Model AZ8904 (Serial no. 974835)	1

Monitoring Parameters, Frequency and Duration

3.5 **Table 3.3** summarizes the monitoring parameters, frequency and total duration of monitoring.

Table 3.3Noise Monitoring Parameters, Frequency and Duration

Station	Parameter	Period	Frequency
NM1	$L_{eq}(30 \text{ min.})$ (L ₁₀ and L ₉₀ were also recorded as supplementary information)	0700-1900 hrs. on normal weekdays	Once a week

3.6 If construction works are extended to include works during the hours of 1900 - 0700, additional weekly impact monitoring would be carried out during evening and night-time works. Applicable permits under NCO have been obtained by the Contractor. The details of the Construction Noise Permit can be referred to **Table 5.1**.

Monitoring Methodology and QA/QC Procedures

Field Monitoring

- 3.7 The monitoring procedures are as follows:
 - The microphone head of the sound level meter was positioned 1m exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
 - The battery condition was checked to ensure good functioning of the meter.
 - Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - measurement time : 30 minutes
 - Prior to and after noise measurement, the meter was calibrated using the calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement was required after re-calibration or repair of the equipment.
 - The wind speed at the monitoring station was checked with the portable wind meter. Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.
 - Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
 - At the end of the monitoring period, the L_{eq} , L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.

Maintenance and Calibration

- 3.8 Maintenance and Calibration procedures were as follows:
 - The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
 - The sound level meter and calibrator were checked and calibrated at yearly intervals. Copies of calibration certificates are attached in **Appendix B**.

Results and Observations

- 3.9 In the reporting month, noise monitoring during non-restricted hours was conducted as scheduled at the designated location on 4 occasions. As advised by the Contractor, no construction activities will be undertaken during restricted hours as such noise monitoring during restricted hours was omitted. The noise monitoring schedule is provided in **Appendix C**.
- 3.10 The details of the monitoring results and graphical presentations are shown in **Appendix F**. The weather during the monitoring sessions was mainly sunny and fine.
- 3.11 No Action/Limit Level exceedance for construction noise monitoring was recorded in

the reporting month.

Table 3.4	Summary Table of Noise N	Monitoring Results during the Reporting Month
	, , , , , , , , , , , , , , , , , , ,	

Parameter	Minimum L _{eq} (30min) dB(A)	Maximum L _{eq} (30min) dB(A)	Average L _{eq} (30min) dB (A)	Action Level	Limit Level
NM1	59.6	70.3	66.8	When one documented complaint is received	75dB(A)

3.12 According to our field observations, the major noise source identified at the designated air quality monitoring stations are as follows:

Station	Major Noise Source
NM1 – Government Staff Quarters	Road Traffic
	Construction of Main Site

4 LANDFILL GAS MONITORING

Monitoring Requirements

4.1 In accordance with Section 6 of the EM&A Manual, monitoring of landfill gas is required for construction works within the 250m Consultation Zone of Shuen Wan Landfill (the Consultation Zone). This Section reports the results of landfill gas measurements performed by the Safety Officer of the Contractor. Appendix A shows the Limit Levels for the monitoring works.

Monitoring Parameters and Frequency

- 4.2 The parameters for Landfill gas monitoring include Percentage of Combustible Gas (Methane), Carbon dioxide and Oxygen.
- 4.3 The Landfill gas monitoring is carried out before the entry of concern zone by the Contractor in the morning and afternoon.

Monitoring Locations

- 4.4 Monitoring of oxygen, methane and carbon dioxide was performed for excavations at 1m depth or more within the Consultation Zone. In this reporting month, the area required to be monitored for landfill gas are shown below and **Figure 1.3** shows the landfill gas monitoring locations.
 - Aeration Tank;
 - DN 900 Sewage Pipe;
 - DN1500 Airmain;
 - FC10B;
 - FC8B;
 - FC9B;
 - FMC1B; and
 - FMC2B.

Remark:

Excavation works of 1m depth or more at FC7B, FC11B&12B, Dewatering House, Pipe 300, 600 and 900 Excavation Trench has been completed.

Monitoring Equipment

4.5 **Table 4.1** summarizes the equipment employed by the Contractor for the landfill gas monitoring.

Table 4.1Landfill Gas Monitoring Equipment

Equipment	Model and Make	Quantity
Intrinsically safe, portable gas detector	Crowcon Custodian CDL Portable Gas Detector (Serial No. 24800 37076)	1

Results

4.6 In the reporting month, landfill gas monitoring was carried out by the Contractor at the aforesaid locations on total 432 occasions. No Action/Limit Level exceedance for Landfill gas monitoring was recorded in the reporting month. The monitoring results are provided in **Appendix G**. Copies of calibration certificates are attached in **Appendix B**.

5 ENVIRONMENTAL AUDIT

Site Audits

- 5.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix H**.
- 5.2 Site audits were conducted on 2nd, 10th, 16th, 24th and 30th August by ET. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 10th August 2012. No site inspection was conducted by EPD during the reporting month. The details of observations during site audit can refer to **Table 5.2**.

Review of Environmental Monitoring Procedures

5.3 The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

Air Quality Monitoring

- The monitoring team recorded all observations around the monitoring stations within and outside the construction site.
- The monitoring team recorded the temperature and weather conditions on the monitoring days.

Noise Monitoring

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
- Major noise sources were identified and recorded. Other intrusive noise attributing to the result was trimmed off by pausing the monitoring temporarily.

Landfill Gas Monitoring

• The Contractor has checked the condition of the equipment before monitoring to ensure the reliability.

Status of Environmental Licensing and Permitting

5.4 All permits/licenses obtained for the Project are summarized in **Table 5.1**.

Тя	ble	5.1
1 a	υι	J.1

Summary of Environmental Licensing and Permit Status

Valid Period		D.4-3.	Status	
From	То	Details	Status	
it (EP)				
22/3/2007	N/A	 Expansion and upgrading of existing <u>Tai Po Sewage Treatment Works from</u> <u>100,000 m³/day to 130,000 m³/day:</u> (a) additional secondary treatment process units(1 primary clarified; 3 bioreactors and 2 final clarifiers); (b) reconstruction of 4 existing final clarified; (c) provision of ultraviolet disinfection facilities; (d) additional sludge treatment facilities; and (e) ancillary works to existing treatment facilities. 	Valid	
rmit (CNP)				
01/07/11	30/12/11	Use of powered mechanical equipment for carrying out construction work at 7 Dai Kwai Street, Tai Po Industrial Estate, Tai Po, N.T. during 0000 – 2400 hours on general holidays (including Sundays), 0000 – 0700 hours and 1900 – 2400 hours on any day not being a general holiday	Expired	
01/01/12	30/06/12	Use of powered mechanical equipment for carrying out construction work at 7 Dai Kwai Street, Tai Po Industrial Estate, Tai Po, N.T. during 0000 – 2400 hours on general holidays (including Sundays), 0000 – 0700 hours and 1900 – 2400 hours on any	Expired	
01/07/12	30/12/12	Use of powered mechanical equipment for carrying out construction work at 7 Dai Kwai Street, Tai Po Industrial Estate, Tai Po, N.T. during 0000 – 2400 hours on general holidays (including Sundays), 0000 – 0700 hours and 1900 – 2400 hours on any day not being a general holiday.	Valid	
25/10/10	21/10/17		T 7 1' 1	
	31/10/15	Discharge of industrial trade effluent: <i>Water Control Zone</i> : Tolo Harbour and Channel <i>Discharge Points</i> : Communal drain for the carriage of surface drainage water	Valid	
,				
09/07/10	End of Project	Disposal of Chemical Waste including spent oil, lubricating oil, diesel oil and methanol, surplus paint, thinner	Valid	
	From t (EP) 22/3/2007 22/3/2007 rmit (CNP) 01/07/11 01/07/11 01/07/12 01/07/12 25/10/10 nical Waste)	From To t (EP) 22/3/2007 N/A 22/3/2007 N/A ////////////////////////////////////	FromToDetails22/3/2007N/AExpansion and upgrading of existing Tai Po Sewage Treatment Works from 100.000 m²/day to 130.000 m²/day: (a) additional secondary treatment process units(1 primary clarified; 3 bioreactors and 2 final clarifiers); (b) reconstruction of 4 existing final clarified; (c) provision of ultraviolet disinfection facilities; and (e) ancillary works to existing treatment facilities.mit (CNP)01/07/1130/12/11Use of powered mechanical equipment for carrying out construction work at 7 Dai Kwai Street, Tai Po Industrial Estate, Tai Po, N.T. during 0000 – 2400 hours on general holiday.01/01/1230/06/12Use of powered mechanical equipment for carrying out construction work at 7 Dai Kwai Street, Tai Po Industrial Estate, Tai Po, N.T. during 0000 – 2400 hours on general holiday.01/01/1230/06/12Use of powered mechanical equipment for carrying out construction work at 7 Dai Kwai Street, Tai Po Industrial Estate, Tai Po, N.T. during 0000 – 2400 hours on general holiday.01/07/1230/12/12Use of powered mechanical equipment for carrying out construction work at 7 Dai Kwai Street, Tai Po Industrial Estate, Tai Po, N.T. during 0000 – 2400 hours on general holiday.01/07/1230/12/12Use of powered mechanical equipment for carrying out construction work at 7 Dai Kwai Street, Tai Po Industrial Estate, Tai Po, N.T. during 0000 – 2400 hours on general holiday.01/07/1230/12/12Use of powered mechanical equipment for carrying out construction work at 7 Dai Kwai Street, Tai Po Industrial Estate, Tai Po, N.T. during 0000 – 2400 hours on general holiday.01/07/1230/12/	

Status of Waste Management

5.5 The Construction and Demolition (C&D) materials generated in the reporting month were mainly inert C&D waste and C&D waste. The quantities of waste generated in this reporting month are summarized in **Appendix L**. No chemical waste was generated in the reporting month.

Implementation Status of Environmental Mitigation Measures

- 5.6 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the EMIS is provided in **Appendix K**.
- 5.7 During site inspections in the reporting month, no non-conformance was identified. In particular, no major environmental deficiency was observed the site inspection on 24 August 2012. The observations and recommendations made during the audit sessions are summarized in **Table 5.2**.

Parameters	Date	Observations and Recommendations	Follow-up
	4 Jul 2012	Reminder: Wheel washing bay near FC12B should be cleaned.	The situation was observed to be rectified by the Contractor during the audit session on 10 Aug 2012.
10 Aug 2012 Water Quality 16 Aug 2012		<u>Reminder:</u> The stagnant water at Air Main 1500 should be removed and pumped out into appropriate watercourse before discharging.	The situation was observed to be rectified by the Contractor during the audit session on 16 Aug 2012.
		The stockpile near FMC2B should be properly managed (e.g. keep away from the drainage or by other means) to avoid mud and sands directly discharged into drainage during rainstorms.	The situation was observed to be rectified by the Contractor during the audit session on 24 Aug 2012.
	30 Aug 2012	Stagnant water at the concrete pit near DSD site office should be pumped out.	The situation was observed to be rectified by the Contractor during the audit session on 6 Sep 2012.
30 Aug 2012		<u>Reminder:</u> Water at wheel washing bay was observed silty.	Follow-up action is needed in the next reporting month. The water quality of wheel washing bay shall be improved by regularly remove sand and silt in the water.
Air Quality			
Noise			
	2 Aug 2012	Reminder: Drip tray at FC7B should be properly managed.	The situation was observed to be rectified by the Contractor during the audit session on 10 Aug 2012.
Waste / Chemical Management	2 Aug 2012	<u>Reminder:</u> Drip tray should be provided for storage of chemicals at chemical storage room.	The situation was observed to be rectified by the Contractor during the audit session on 10 Aug 2012.
	2 Aug 2012	Reminder: Stagnant water on drip tray should be removed.	The situation was observed to be rectified by the Contractor during the audit session on 10 Aug 2012.

Table 5.2Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
	2 Aug 2012	<u>Reminder:</u> Debris near UV disinfection room should be properly cleared.	The situation was observed to be rectified by the Contractor during the audit session on 10 Aug 2012.
	10 Aug 2012	<u>Reminder:</u> The debris at FC6B should be properly disposed.	The situation was observed to be rectified by the Contractor during the audit session on 16 Aug 2012.
	10 Aug 2012	Reminder: The chemical wastes and container near the newly-built shelter should be properly managed.	The situation was observed to be rectified by the Contractor during the audit session on 24 Aug 2012.
	16 Aug 2012	<u>Reminder:</u> The drip tray should be well maintained to avoid accumulation of stagnant water.	The situation was observed to be rectified by the Contractor during the audit session on 24 Aug 2012.
	16 Aug 2012	<u>Reminder:</u> The debris and litter at FC6B should be properly disposed.	The situation was observed to be rectified by the Contractor during the audit session on 24 Aug 2012.
	30 Aug 2012	<u>Reminder:</u> Dusty debris at Chemical House should be properly disposed.	Follow-up action is needed in the next reporting month.
	30 Aug 2012	<u>Reminder:</u> Litter and rubbish near wheel washing bay should be properly disposed.	The situation was observed to be improved by the Contractor during the audit session on 6 Sep 2012.

Summary of Exceedances

5.8 No exceedance of monitoring results was recorded in the reporting month. Summary of exceedance is provided in **Appendix H**.

Implementation Status of Event Action Plans

5.9 The Event Action Plans for air quality, construction noise and landfill gas monitoring are presented in **Appendix J**. No exceedance was recorded and thus no action was required to be implemented.

Summary of Complaint and Prosecution

- 5.10 No environmental related complaint, prosecution or notification of summons was received in the reporting month.
- 5.11 There was no environmental complaint, prosecution or notification of summons received since the Project commencement. The Complaint Log is attached in Appendix M.

6 FUTURE KEY ISSUES

- 6.1 Key issues to be considered in the coming month include:
 - Effluent discharge generated from surface runoff;
 - Dust generated from excavation works, backfilling works and stockpile of dusty materials;
 - Maintenance of de-silting facilities and drainage system, such as U-channels;
 - Accumulation of stagnant water in the site areas; and
 - Accumulation of C&D waste and general waste on site.

Monitoring Schedule for the Next Month

6.2 The tentative environmental monitoring schedule for the next month is shown in **Appendix C**.

Construction Program for the Next Month

- 6.3 A tentative construction programme is provided in **Appendix N**. The major construction activities in the coming month will include:
 - Cable ducting works;
 - Construction of concrete plinths for Combined Heat and Power Generator at Stage I/II Works;
 - Construction of DN1000 scum pipe between RAS Pumping Station and FMC2B;
 - Construction of FC10B, MLC and Foam Removal Chamber;
 - Construction of FMC2B, Aeration Tank No. 7 and Sludge Digestion Tank No. 3;
 - Demolition Draw-off Chamber No.3 and Control Room;
 - Drainage and Excavation works;
 - Excavation for FC9B;
 - Finishing works for Gas Transfer House, proposed Switch Room, Decanting Chamber and Chemical & Oil Store;
 - Installation of Cat-ladders, Handrailings and Steel Bridges;
 - Installation of DN1500 air main & DN900 sewage pipeline;
 - Installation of Irrigation System;
 - Landscaping works;
 - Modification works at Chlorination House into Gas Transfer Station;
 - Piling works at MCL & Sludge Draw-off Chamber No. 3;
 - Proof drilling at FC9B; and
 - Water-tightness test for FC8B and Sludge Draw-off Chamber No. 4.

7 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 7.1 Environmental monitoring and audit works were conducted in the reporting month. Site inspections were conducted on a weekly basis. The results were reviewed and checked.
- 7.2 No exceedance of monitoring results was recorded in the reporting month.
- 7.3 There was no environmental complaint, prosecution or notification of summons received.

Recommendations

7.4 According to the environmental audit performed in the reporting month, the following recommendations were made:

Water Impact

- Avoid accumulation of stagnant water on site.
- Avoid blockage of gully inlets and ensure proper protection of the gully from ingress of sandy water.
- Ensure proper use and maintenance of the de-silting facilities.
- Maintain sand bags placed along the u-channel at good condition and replace the broken bags.
- Provide sediment tank for settling runoff prior to disposal.
- Remove and settle out sand and silt at wheel washing facilities regularly.

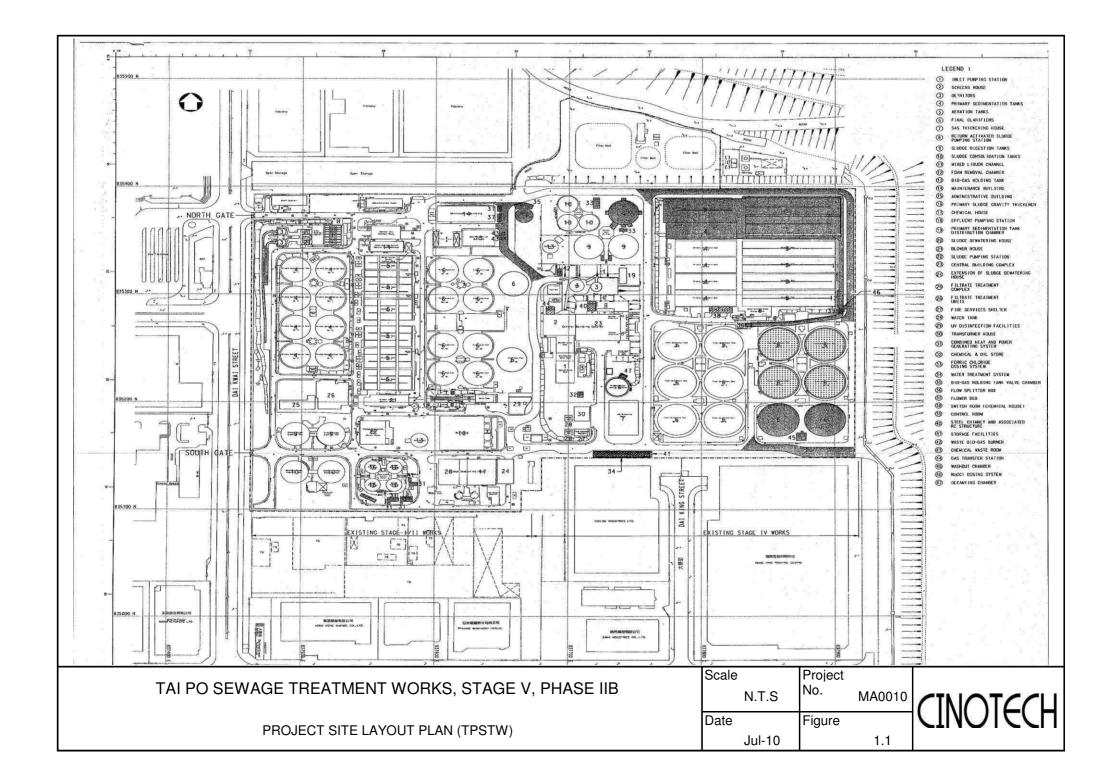
Dust Impact

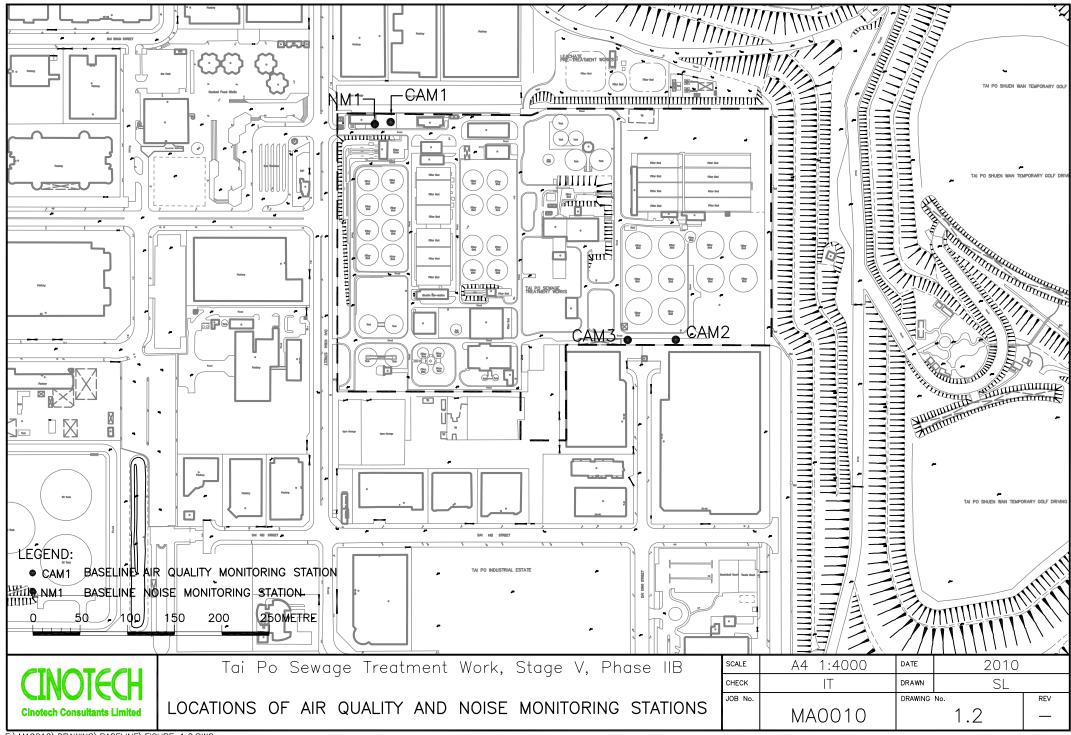
- Cover the excavated dusty materials or stockpile of dusty materials by impervious sheeting, or spray water on the dusty materials so as to maintain entire surface wet.
- Remove fugitive dusty material on the haul road periodically.
- Spray with water on the surface of concrete breaking and dry dust haul road.

Waste / Chemical Management

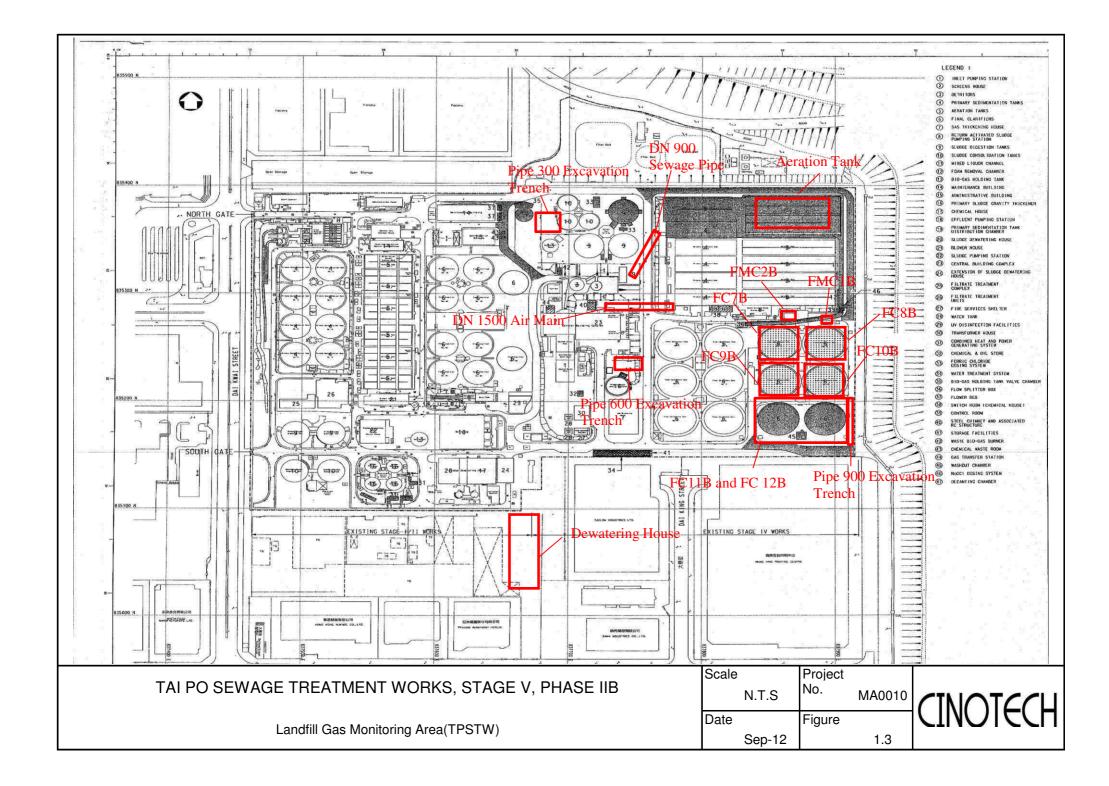
- Avoid and check for any accumulation of waste materials or rubbish on site.
- Avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment.
- Provide drip tray with adequate capacity and maintain well for equipment and chemical waste.
- Provide proper rubbish bins / skips for waste collection.

FIGURES





F:\MA0010\DRAWING\BASELINE\FIGURE 1.2.DWG



APPENDIX A ACTION AND LIMIT LEVELS

APPENDIX A – Action and Limit Levels

<u>1-Hour TSP</u>

Location	Action Level, μg/m ³	Limit Level, µg/m ³
CAM1	315	
CAM2	336	500
CAM3	344	

24-Hour TSP

Location	Action Level, μg/m ³	Limit Level, µg/m ³
CAM1	171	
CAM2	177	260
CAM3	192	

Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays		75 dB(A)
0700-2300 hrs on holidays; and 1900- 2300 hrs on all other days	When one documented complaint is received	70* dB(A)
2300-0700 hrs of next day		55* dB(A)

Notes:

* The Area Sensitivity Rating for Station NM1 is taken as C, due to the nearby industrial area, according to Table 1 of EPD's Technical Memorandum on Noise from Construction Work other than Percussive Piling.

<u>Landfill Gas</u>

Parameter Limit Level		Action	
	<19%	Ventilate to restore oxygen to >19%	
Oxygen	<18%	Stop works Evacuate personnel / prohibit entry Increase ventilation to restore oxygen to >19%	
Methane	>10% LEL (i.e. >0.5% by volume)	Post "No Smoking" signs Prohibit hot works Ventilate to restore methane to <10% LEL	
	>20% LEL (i.e. >1% by volume)	Stop works Evacuate personnel / prohibit entry Increase ventilation to restore methane to $<10\%$	
	>0.5%	Ventilate to restore carbon dioxide to <0.5%	
Carbon Dioxide	>1.5%	Stop works Evacuate personnel / prohibit entry Increase ventilation to restore carbon dioxide to <0.5%	

APPENDIX B COPIES OF CALIBRATION CERTIFCATES

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA0010/37/0045

Station	CAM1 - Govern	ment Staff Quarter	Operator: _ Next Due Date: _ Serial No				
Date:	9-Jul-12						_
Equipment No.:	A-01-37						-
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Tomporatu		205.9		Condition	T		N 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Temperatu	ne, 1a (K)	305.8	Pressure, Pa	i (mmHg)]	757.7	
		Orifi	ce Transfer St	andard Inform	ation		
Equipme	ent No.;	A-04-01	Slope, mc	0.0568	Intercept, bc		-0.0432
Last Calibr	ation Date:	9-Oct-11		mc x Qstd + l	be = [∆H x (Pa/76	50) x (298/Ta	a)] ^{1/2}
Next Calibr	ation Date:	8-Oct-12		Qstd = {[∆H	x (Pa/760) x (298	/Ta)] ^{{/2} -bc}	/ mc
		•					
- dina cinding and a si	한 11 년 19		Calibration of	TSP Sampler		Enelected (S	
Calibration		Orfice	9			HVS	
Point	ΔH (orifice), in. of water	[ΔH x (Pa/760) :	x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	∆W (HVS), in. of oil	[ΔW x (Pa/	760) x (298/Ta)] ^{1/2} Y- axis
1	11.9	3.4()	60.62	8.4		2.86
2	9.7	3.02	7	54.81	6.8		2.57
3	7.6	2.72	2	48.60	5.1		2.23
4	5.2	2.25	5	40.33	3.2		1.76
5	3.4	1.82		32.76	2.0		1.39
Slope , mw = Correlation c	oefficient* =	0.999), check and recalib	1	Intercept, bw [,]	-0.360	2	
	laika gertavit tastan	enge geer	Set Point C	alculation	eg kerendi bi dere der	e ne el el el el	verilee beel of
From the TSP Fi	eld Calibration Cu	irve, take Qstd = 43	CFM				
From the Regress	sion Equation, the	"Y" value accordir	ig to				
			1.1 (133)		oo m 1/2		
		mw x Qste	$d + bw = [\Delta W]$	x (Pa/760) x (2	98/Ta)]		
Therefore, Se	et Point; W = (my	w x Qstd + bw) ² x (760 / Pa) x (1	fa / 298) =	3.82		
Remarks:							
Conducted by: Checked by:	· · · · · · · · · · · · · · · · · · ·	Signature:	Vino	ŭ		Date: Date:	917/1V 9 July Dela

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA0010/A40/0045

Station	CAM2 - Hung H	Hing Printing Centre Operato		WK		,	
Date:	9-Jul-12			– Next Due Date:			
Equipment No.:	A-01-40			Serial No. 102		9	
	in an an Angeler an Ang Angeler an Angeler an An	yang sanaka	Ambiant	Condition	unte Ballabada		Ne han e tre tre se en
Temperatu	re. Ta (K)	305.8	Pressure, Pa		T	757.7	
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		Or	ifice Transfer St	andard Inforn	nation		ig sei Propietione coir
Equipme	ent No.:	A-04-01	Slope, mc	0.0568	Intercep		-0,0432
Last Calibra	ation Date:	9-Oct-11		mc x Qstd +	bc = [ΔH x (Pa/76	i0) x (298/Ta)] ^{1/2}
Next Calibra	ation Date:	8-Oct-12		Qstd = {[AH	x (Pa/760) x (298	/Ta)] ^{1/2} -bc} /	me
		•					
an estre al es	n de set set filse		Calibration of	TSP Sampler	- Helen and State	utin tente fi	
Calibration		Orf	īce			HVS	
Point	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	[ΔW x (Pa/7)	50) x (298/Ta)] ^{1/2} Y- axis
1	11.8	3	.39	60.37	8.2		2.82
2	9.7	3	.07	54.81	6.4		2.49
3	7.5	2	70	48.28	5.0		2.20
4	5.2	2	25	40.33	3,2		1.76
5	3.1	1.74		31.31	1.9		1.36
By Linear Regr Slope , mw =				Intercept, bw :	-0.235	4	
Correlation co	oefficient* =	0.99	90	_			
*If Correlation C	oefficient < 0.990), check and recal	ibrate.				
		de trak datar	Set Point C	alculation	te to este a tradição de la c		
From the TSP Fig	eld Calibration Cu	urve, take Qstd =	43 CFM				
From the Regress	sion Equation, the	"Y" value accord	ding to				
					an (T) \\1/2		
		mw x Q	std + bw = $[\Delta W]$	x (Pa/760) x (2	98/Ta)]		
Therefore, Se	t Point; W = (mv	$x x Qstd + bw)^2$	x (760 / Pa) x (1	Γa / 298) =	3.82	<u> </u>	
<u>.</u>							
Remarks:							
Conducted by: <u>[</u> Checked by: _	ت <u>ر</u> •	Signature:	Kino	~		Date: Date:	917/12 9 July world

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High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA0010/35/0045

9 July Dold

Station	CAM3 - Talcon	Industrial Ltd	ustrial Ltd Operator: Next Due Date:		WK	
Date:	9-Jul-12				8-Sep-	12
Equipment No.	: <u>A-01-35</u>			Serial No	0810	
	NA PARA ANA ANA ANA ANA ANA ANA ANA ANA ANA					
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	an a	Or	ifice Transfer St	andard Inforn	ation	
Equipm	ient No.:	A-04-01	Slope, mc	0.0568	Intercep	i, bc -0.0432
Last Calibi	ration Date:	9-Oct-11		mc x Qstd +	bc = [ΔH x (Pa/76	i0) x (298/Ta)] ^{1/2}
Next Calib	ration Date:	8-Oct-12		Qstd = {[ΔH	x (Pa/760) x (298	/Ta)] ^{1/2} -bc} / mc
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		Orí	Calibration of	TSP Sampler	gegegene en	TING
Calibration Point	ΔH (orifice), in. of water	1)) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	HVS [ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y- axis
1	12.4	3	.47	61.87	8.6	2,89
2	9.7	3	.07	54.81	6.7	2.55
3	8.2	2	.82	50.45	5.3	2.27
4	4.9	2	.18	39.17	3.3	1.79
5	3.3	1.79		32.28	1.9	1.36
Slope , mw = Correlation o	coefficient* =	0.99	81	Intercept, bw [,]	-0.253	8
*If Correlation (Coefficient < 0.990), check and recal	ibrate.			
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From the TSP F	ield Calibration C	urve, take Qstd =		· · ·		
From the Regres	ssion Equation, the	"Y" value accore	ting to			
		mw x O	std + bw = ΔW	x (Pa/760) x (2	98/Ta)1 ^{1/2}	
		-	•		, , , , , , , , , , , , , , , , , , ,	
Therefore, Se	et Point; W = (my	$\mathbf{v} \mathbf{x} \mathbf{Q} \mathbf{s} \mathbf{t} \mathbf{d} + \mathbf{b} \mathbf{w} \mathbf{v}^2$	x (760 / Pa) x (1	ra / 298) =	3.84	
Remarks:	<u></u>					
Conducted by: Checked by:		Signature:	Ywa	<u> </u>		Date: <u>917112</u> Date: <u>9. July Ooly</u>



WELLAB LIMITED Rms 816, 1516 & 1701, Technology Park, 18 On Lai Street, Shatin, N.T, Hong Kong. Tel: 2898 7388 Fax: 2898 7076 Website: www.wellab.com.hk

2013-05-01

1 of 1

TEST RÉPORT

APPLICANT:	Cinotech Consultants Limited Room 1710, Technology Park,	Test Report No.: Date of Issue:	C/12/120501 2012-05-02
		Date Received:	2012-05-01
		Date Tested:	2012-05-01
		Date Completed:	2012-05-02

Next Due Date:

Page:

ATTN:

Mr. W.K Tang

Certificate of Calibration

Item for calibration:

I	Description	: RS232 Integral Vane Digital Anemometer
Ν	Manufacturer	: AZ Instrument
N	Model No.	: AZ8904
S	Serial No.	: 974835
E	Equipment No.	: A-03-03
nditio	ns:	
F	Room Temperature	: 23 degree Celsius
		

Test conditions:

Room Temperature	: 23 degree Celsi
Relative Humidity	: 67%
Pressure	: 101.2 kPa

Methodology:

The anemometer has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

	Reference Set Point	Instrument Readings
Measuring Air Velocity, m/s	2.00	2.00
Temperature, °C	21.0	21.0

PREPARED AND CHECKED BY: For and On Behalf of WELLAB Ltd.

PATRICK TSE Laboratory Manager

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TEST REPORT

DescriptionCalibration OrificeSerial No.1536Model No.G25ADate9 October 2011

Manufacturer Temperature,Ta (K) Pressure, Pa (mmHg) Thermo Andersen 298 762.3

Plate	Diff.Vol (m ³)	Diff.Time (min)	Diff.Hg (mm)	Diff.H ₂ O (in.)
1	1.00	1.3760	3.4	2.00
2	1.00	0.9740	6.4	4.00
3	1.00	0.8730	7.9	5.00
4	1.00	0.8320	8.6	5.50
5	1.00	0.6890	12.8	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9985	0.7257	1.4163
0.9946	1.0211	2.0030
0.9926	1.1370	2.2394
0.9917	1.1919	2.3487
0.9861	1.4313	2.8326
Y axis= SQR	T[H ₂ O(Pa/760))(298/Ta)]

Qstd Slope (m) = <u>2.00766</u> Intercept (b) = <u>-0.04318</u>

Coefficient(r) = 0.99999

Va	(X axis) Qa	(Y axis)
0.9955	0.7235	0.8842
0.9916	1.0181	1.2505
0.9896	1.1336	1.3981
0.9887	1.1884	1.4664
0.9832	1.4270	1.7685
Y axis= SQR	TIH ₂ O(Ta/Pa)]

 $AXIS = SQRT[H_2O(Ta/Pa)]$ Oa Slope (m) = 1.25716

va Siope (m)	= <u>1.25716</u>
Intercept(b)	= <u>-0.02696</u>
Coefficient (r)	= <u>0.99999</u>

CALCULATIONS

Vstd=Diff. Vol[(Pa-Diff.Hg)/760](298/Ta) Qstd=Vstd/Time Va=Diff.Vol[(Pa-Diff.Hg)/Pa] Qa=Va/Time

For subsequent flow rate calculations: Qstd=l/m{[SQRT($H_2O(Pa/760)(298/Ta))$]-b} Qa=l/m{[SQRT $H_2O(Ta/Pa)$]-b}

> PREPARED AND CHECKED BY: For and On Behalf of WELLAB Ltd.

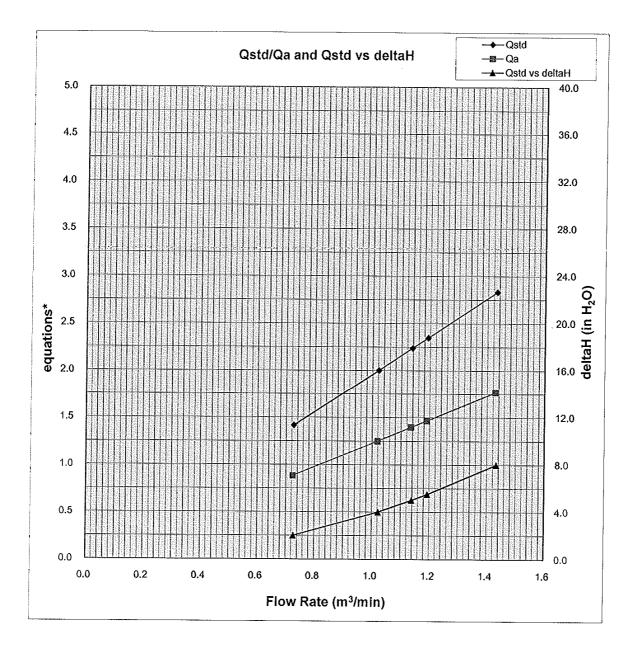
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PATRICK TSE Laboratory Manager

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TEST REPORT



Y-axis equations:

Qstd series: SQRT[△H(Pa/Pstd)(Tstd/Ta)]

Qa series: SQRT[Δ H(Ta/Pa)]

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TEST REPORT APPLICANT: Cinotech Consultants Limited Test Report No.: C/N/110906/1 Room 1710, Technology Park, Date of Issue: 2011-09-07 Date Received: 18 On Lai Street. 2011-09-06 Shatin, NT, Hong Kong Date Tested: 2011-09-06 Date Completed: 2011-09-07 Next Due Date: 2012-09-06 ATTN: Mr. Henry Leung Page: 1 of 1 **Certificate of Calibration** Item for calibration: Description : 'SVANTEK' Integrating Sound Level Meter Manufacturer : SVANTEK Model No. : SVAN 957 Serial No. : 21455 Microphone No. : 43730 Equipment No. : N-08-07 **Test conditions:** Room Temperatre : 22 degree Celsius **Relative Humidity** : 66% **Test Specifications:** Performance checking at 94 and 114 dB Methodology: In-house method, according to manufacturer instruction manual **Results:** Reference Set Point, dB Instrument Readings, dB 94 94.0 114 114.0 PREPARED AND CHECKED BY: For and On Behalf of WELLAB Ltd. Thak **PATRICK TSE**

Laboratory Manager

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TEST REPORT APPLICANT: Cinotech Consultants Limited Test Report No.: C/N/111010/2 Room 1710, Technology Park, Date of Issue: 2011-10-11 18 On Lai Street, Date Received: 2011-10-10 Shatin, NT, Hong Kong Date Tested: 2011-10-10 Date Completed: 2011-10-11 Next Due Date: 2012-10-10 ATTN: Mr. Henry Leung Page: 1 of 1 **Certificate of Calibration** Item for calibration: Description : 'SVANTEK' Integrating Sound Level Meter Manufacturer : SVANTEK Model No. : SVAN 957 Serial No. : 23851 Microphone No. : 48532 Equipment No. : N-08-12 **Test conditions: Room Temperatre** : 25 degree Celsius **Relative Humidity** : 59% **Test Specifications:** Performance checking at 94 and 114 dB Methodology: In-house method, according to manufacturer instruction manual **Results:** Reference Set Point, dB Instrument Readings, dB 94 94.0 114 114.0

PREPARED AND CHECKED BY: For and On Behalf of WELLAB Ltd.

PATRICK TSE Laboratory Manager



TEST REPORT Cinotech Consultants Limited Test Report No.: C/N/110923/2 **APPLICANT:** Date of Issue: Room 1710, Technology Park, 2011-09-24 Date Received: 18 On Lai Street, 2011-09-23 2011-09-23 Shatin, NT, Hong Kong Date Tested: Date Completed: 2011-09-24 Next Due Date: 2012-09-23 ATTN: Mr. Henry Leung Page: 1 of 1 Item for calibration: Description : Acoustical Calibrator Manufacturer : SVANTEK Model No. : SV30A Serial No. : 10929 Equipment No. : N-09-01 **Test conditions:** Room Temperatre : 23 degree Celsius **Relative Humidity** : 59% Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

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P^IATRICK TSE Laboratory Manager

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TEST REPORT Cinotech Consultants Limited APPLICANT: Test Report No.: C/N/111104/1 Room 1710, Technology Park, Date of Issue: 2011-11-05 18 On Lai Street, Date Received: 2011-11-04 Shatin, NT, Hong Kong Date Tested: 2011-11-04 Date Completed: 2011-11-05 Next Due Date: 2012-11-04 ATTN: Mr. Henry Leung Page: 1 of 1 Item for calibration: Description : Acoustical Calibrator Manufacturer : SVANTEK Model No. : SV30A Serial No. : 10965 Equipment No. : N-09-02 **Test conditions: Room Temperatre** : 23 degree Celsius **Relative Humidity** : 60%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	$114.0 \pm 0.1 dB$

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PATRICK TSE Laboratory Manager

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APPENDIX C ENVIRONMENTAL MONITORING SCHEDULE

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Aug	2-Aug	3-Aug	4-Aug
				1 hr TSP		
						24 hr TSP
5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	10-Aug	11-Aug
	1 hr TSP Noise		1 hr TSP		1 hr TSP	
	Noise				24 hr TSP	
12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug
	1 hr TSP Noise	1 hr TSP		1 hr TSP		
	TOBE			24 hr TSP		
19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug
	1 hr TSP Noise	1 hr TSP			1 hr TSP	
	1,0100		24 hr TSP			
26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep
	1 hr TSP Noise		1 hr TSP	1 hr TSP		
		24 hr TSP				

Contract No. DC/2009/09 - Construction of Tai Po Sewage Treatment Works - Stage 5 Phase 2B Impact Air Quality and Noise Monitoring Schedule for August 2012

Contract No. DC/2009/09 - Construction of Tai Po Sewage Treatment Works - Stage 5 Phase 2B Tentative Impact Air Quality and Noise Monitoring Schedule for September 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep
	24 hr TSP		1 hr TSP Noise	1 hr TSP	1 hr TSP	24 hr TSP
9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep
	1 hr TSP	1 hr TSP		1 hr TSP Noise	24 hr TSP	
16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep
	1 hr TSP Noise	1 hr TSP		24 hr TSP	1 hr TSP	
23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep
	1 hr TSP Noise	1 hr TSP	24 hr TSP		1 hr TSP	
30-Sep	1-Oct	2-Oct	3-Oct	4-Oct	5-Oct	6-Oct
		24 hr TSP				

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

APPENDIX D 1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix D - 1-hour TSP Monitoring Results

Station CAM1 Government Staff Quarters

Date	Sampling	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
Dale	Time	Condition	Temp. (K)	Pressure (Pa)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
2-Aug-12	09:00	Sunny	304.3	750.7	3.2692	3.2736	0.0044	17922.1	17923.1	1.0	1.21	1.21	1.21	72.7	61
6-Aug-12	09:00	Cloudy	299.9	754.7	3.1567	3.1606	0.0039	17947.1	17948.1	1.0	1.22	1.22	1.22	73.3	53
8-Aug-12	13:00	Sunny	303.9	752.5	3.1764	3.1852	0.0088	17948.1	17949.1	1.0	1.21	1.21	1.21	72.8	121
10-Aug-12	09:00	Cloudy	302.1	754.7	3.3124	3.3239	0.0115	17949.1	17950.1	1.0	1.22	1.22	1.22	73.1	157
13-Aug-12	17:00	Sunny	302.1	754.5	3.3200	3.3237	0.0037	17974.1	17975.1	1.0	1.22	1.22	1.22	73.1	51
14-Aug-12	09:00	Cloudy	301.9	756.3	3.2855	3.2907	0.0052	17975.1	17976.1	1.0	1.22	1.22	1.22	73.2	71
16-Aug-12	14:00	Cloudy	303.5	752.4	3.2970	3.3078	0.0108	17976.1	17977.1	1.0	1.21	1.21	1.21	72.8	148
16-Aug-12	10:00	Cloudy	302.7	757.3	3.1926	3.2007	0.0081	18001.1	18002.1	1.0	1.22	1.22	1.22	73.1	111
21-Aug-12	15:00	Sunny	300.3	756.5	3.1876	3.1920	0.0044	18002.1	18003.1	1.0	1.22	1.22	1.22	73.3	60
24-Aug-12	10:30	Sunny	303.4	756.5	3.2382	3.2490	0.0108	18027.1	18028.1	1.0	1.22	1.22	1.22	73.0	148
27-Aug-12	14:28	Sunny	307.1	752.4	3.1614	3.1660	0.0046	18028.1	18029.1	1.0	1.21	1.21	1.21	72.5	63
29-Aug-12	11:00	Sunny	302.5	758.2	3.1482	3.1594	0.0112	18053.1	18054.1	1.0	1.22	1.22	1.22	73.2	153
30-Aug-12	13:00	Sunny	298.5	757.7	3.1731	3.1805	0.0074	18054.1	18055.1	1.0	1.23	1.23	1.23	73.6	101
														Min	51
															4

Max 157 Average 100

Station CAM2

Heng Hing Printing Centre

Date	Sampling	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
Dale	Time	Condition	Temp. (K)	Pressure (Pa)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
2-Aug-12	09:00	Sunny	304.3	750.7	3.1623	3.1699	0.0076	27096.2	27097.2	1.0	1.21	1.21	1.21	72.7	105
6-Aug-12	09:00	Cloudy	299.9	754.7	3.1467	3.1520	0.0053	27121.2	27122.2	1.0	1.22	1.22	1.22	73.3	72
8-Aug-12	13:00	Sunny	303.9	752.5	3.2368	3.2465	0.0097	27122.2	27123.2	1.0	1.21	1.21	1.21	72.8	133
10-Aug-12	09:00	Cloudy	302.1	754.7	3.2312	3.2455	0.0143	27123.2	27124.2	1.0	1.22	1.22	1.22	73.1	196
13-Aug-12	17:00	Sunny	302.1	754.5	3.2171	3.2213	0.0042	27148.2	27149.2	1.0	1.22	1.22	1.22	73.1	57
14-Aug-12	09:00	Cloudy	301.9	756.3	3.3263	3.3330	0.0067	27149.2	27150.2	1.0	1.22	1.22	1.22	73.2	92
16-Aug-12	14:00	Cloudy	303.5	752.4	3.2578	3.2714	0.0136	27150.2	27151.2	1.0	1.21	1.21	1.21	72.8	187
20-Aug-12	10:00	Cloudy	302.7	757.3	3.2392	3.2553	0.0161	27175.2	27176.2	1.0	1.22	1.22	1.22	73.1	220
21-Aug-12	15:00	Sunny	300.3	756.5	3.2782	3.2846	0.0064	27176.2	27177.2	1.0	1.22	1.22	1.22	73.3	87
24-Aug-12	10:30	Sunny	303.4	756.5	3.2616	3.2741	0.0125	27201.2	27202.2	1.0	1.22	1.22	1.22	73.0	171
27-Aug-12	14:30	Sunny	307.1	752.4	3.1422	3.1500	0.0078	27202.2	27203.2	1.0	1.21	1.21	1.21	72.4	108
29-Aug-12	11:00	Sunny	302.5	758.2	3.1576	3.1698	0.0122	27227.2	27228.2	1.0	1.22	1.22	1.22	73.2	167
30-Aug-12	13:00	Sunny	298.5	757.7	3.1574	3.1659	0.0085	27228.2	27229.2	1.0	1.23	1.23	1.23	73.6	115
														Min	57
														Max	220

132

Average

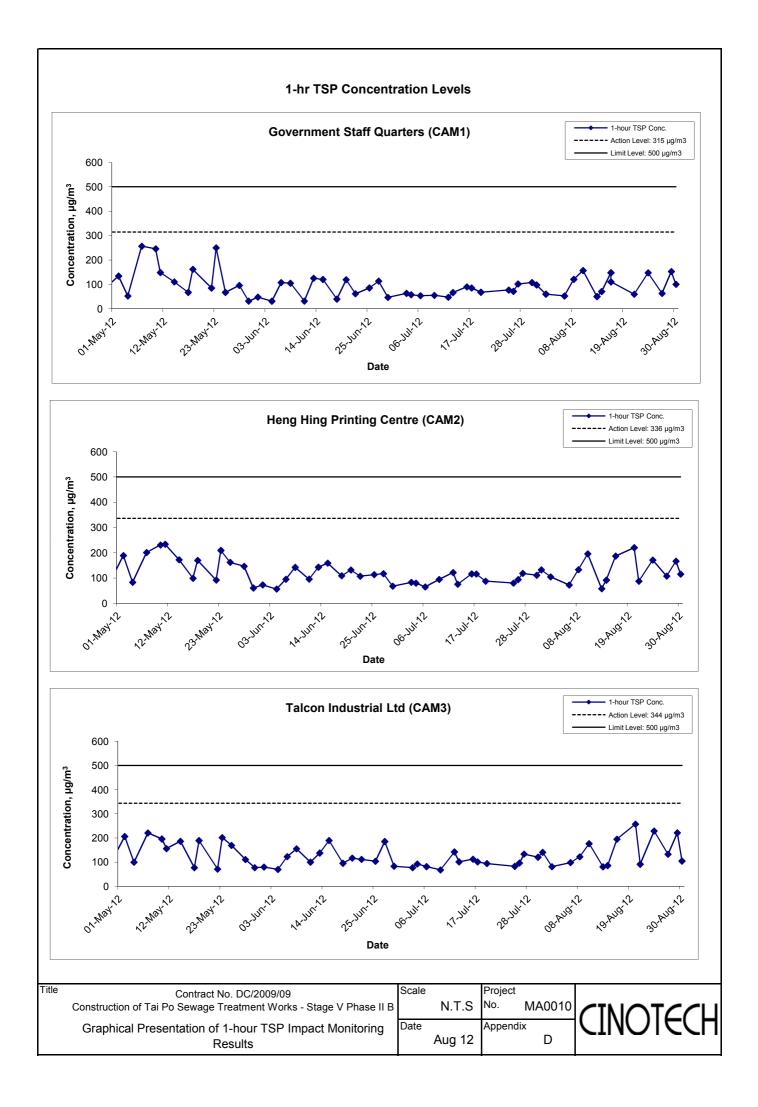
Appendix D - 1-hour TSP Monitoring Results

Station CAM3

Talcon Industrial Ltd

Date	Sampling	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
Dale	Time	Condition	Temp. (K)	Pressure (Pa)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
2-Aug-12	09:00	Sunny	304.3	750.7	3.1519	3.1578	0.0059	20337.9	20338.9	1.0	1.21	1.21	1.21	72.6	81
6-Aug-12	09:00	Cloudy	299.9	754.7	3.1531	3.1603	0.0072	20362.9	20363.9	1.0	1.22	1.22	1.22	73.2	98
8-Aug-12	13:00	Sunny	303.9	752.5	3.1935	3.2024	0.0089	20363.9	20364.9	1.0	1.21	1.21	1.21	72.7	122
10-Aug-12	09:00	Cloudy	302.1	754.7	3.2186	3.2315	0.0129	20364.9	20365.9	1.0	1.22	1.22	1.22	73.0	177
13-Aug-12	17:00	Sunny	302.1	754.5	3.2290	3.2349	0.0059	20389.9	20390.9	1.0	1.22	1.22	1.22	73.0	81
14-Aug-12	09:00	Cloudy	301.9	756.3	3.3317	3.3380	0.0063	20390.9	20391.9	1.0	1.22	1.22	1.22	73.1	86
16-Aug-12	14:00	Cloudy	303.5	752.4	3.2554	3.2696	0.0142	20391.9	20392.9	1.0	1.21	1.21	1.21	72.7	195
20-Aug-12	10:00	Cloudy	302.7	757.3	3.2896	3.3084	0.0188	20416.9	20417.9	1.0	1.22	1.22	1.22	73.0	257
21-Aug-12	15:00	Sunny	300.3	756.5	3.2500	3.2567	0.0067	20417.9	20418.9	1.0	1.22	1.22	1.22	73.2	91
24-Aug-12	10:30	Sunny	303.4	756.5	3.2743	3.2910	0.0167	20442.9	20443.9	1.0	1.22	1.21	1.22	72.9	229
27-Aug-12	14:30	Sunny	307.1	752.4	3.1571	3.1667	0.0096	20443.9	20444.9	1.0	1.21	1.21	1.21	72.3	133
29-Aug-12	11:00	Sunny	302.5	758.2	3.1607	3.1769	0.0162	20468.9	20469.9	1.0	1.22	1.22	1.22	73.1	222
30-Aug-12	13:00	Sunny	298.5	757.7	3.1803	3.1880	0.0077	20469.9	20470.9	1.0	1.23	1.22	1.22	73.5	105
														Min	81

Min81Max257Average144



APPENDIX E 24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix E - 24-hour TSP Monitoring Results

Station CAM1 Government Staff Quarters

Start Date	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
Start Date	Condition	Temp. (K)	Pressure (Pa)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
4-Aug-12	Sunny	302.8	751.3	3.1527	3.2278	0.0751	17923.1	17947.1	24.0	1.21	1.21	1.21	1748.8	43
10-Aug-12	Sunny	302.5	754.4	3.2844	3.3552	0.0708	17950.1	17974.1	24.0	1.22	1.22	1.22	1752.5	40
16-Aug-12	Cloudy	303.1	752.1	3.2220	3.3259	0.1039	17977.1	18001.1	24.0	1.21	1.21	1.21	1748.9	59
22-Aug-12	Sunny	301.3	757.7	3.1857	3.2472	0.0615	18003.1	18027.1	24.0	1.22	1.22	1.22	1758.7	35
28-Aug-12	Sunny	303.5	755.7	3.1517	3.2504	0.0987	18029.1	18053.1	24.0	1.22	1.22	1.22	1751.4	56
													Min	35
													Max	59
													Average	47

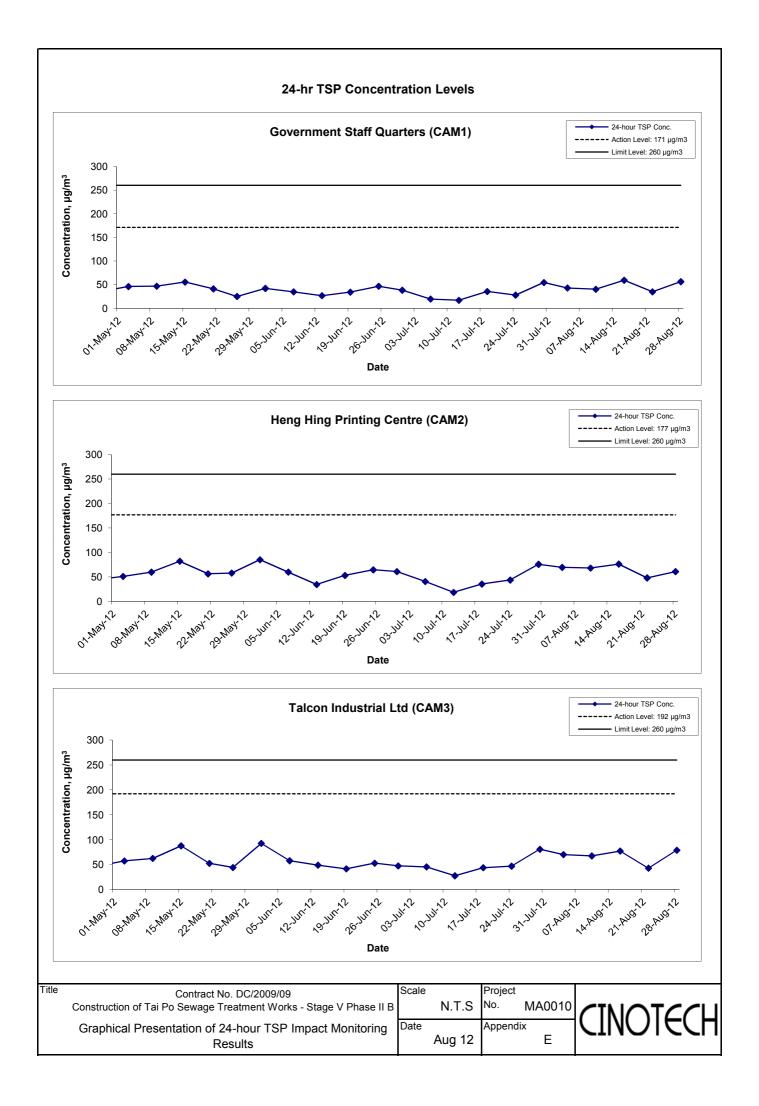
Station CAM2 Heng Hing Printing Centre

Start Date	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
Start Date	Condition	Temp. (K)	Pressure (Pa)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
4-Aug-12	Sunny	302.8	751.3	3.1536	3.2753	0.1217	27097.2	27121.2	24.0	1.21	1.21	1.21	1748.5	70
10-Aug-12	Sunny	302.5	754.4	3.2301	3.3496	0.1195	27124.2	27148.2	24.0	1.22	1.22	1.22	1752.4	68
16-Aug-12	Cloudy	303.1	752.1	3.2594	3.3927	0.1333	27151.2	27175.2	24.0	1.21	1.21	1.21	1748.7	76
22-Aug-12	Sunny	301.3	757.7	3.2511	3.3356	0.0845	27177.2	27201.2	24.0	1.22	1.22	1.22	1758.9	48
28-Aug-12	Sunny	303.5	755.7	3.1486	3.2553	0.1067	27203.2	27227.2	24.0	1.22	1.22	1.22	1751.2	61
													Min	48
													Max	76
													Average	65

Station CAM3

Talcon Industrial Ltd

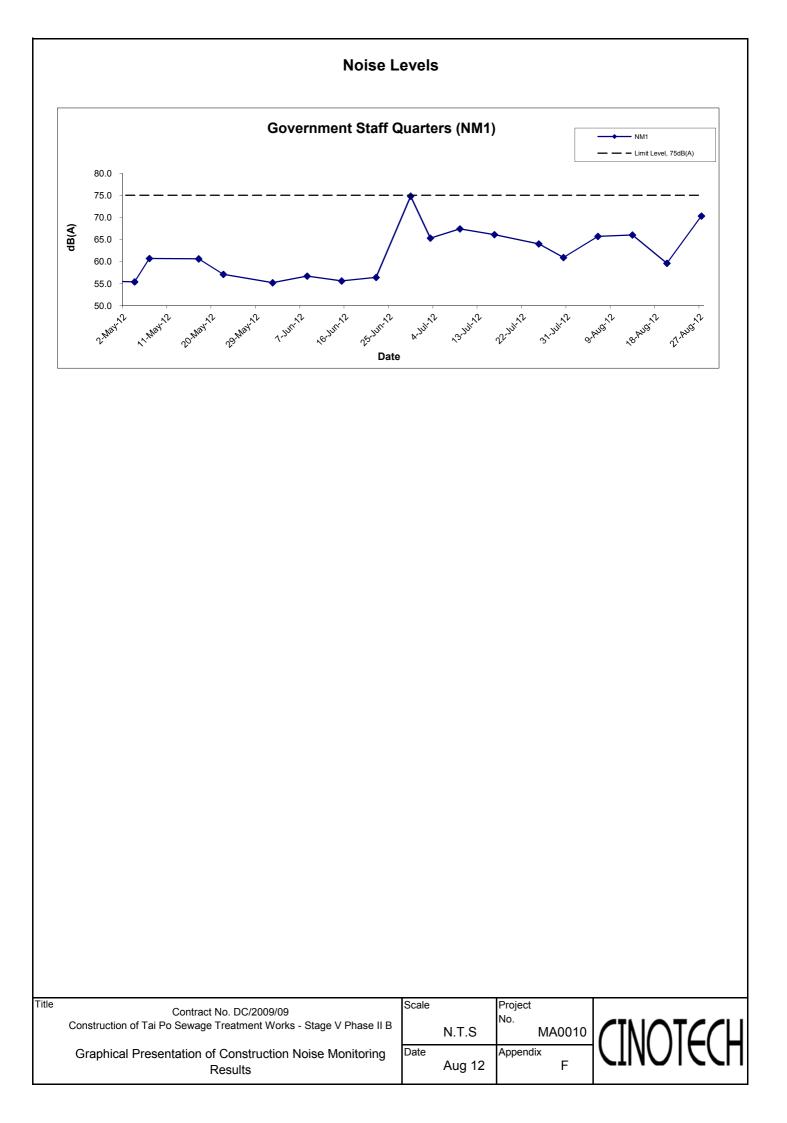
Start Date	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
Start Date	Condition	Temp. (K)	Pressure (Pa)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
4-Aug-12	Sunny	302.8	751.3	3.1292	3.2514	0.1222	20338.9	20362.9	24.0	1.21	1.21	1.21	1746.0	70
10-Aug-12	Sunny	302.5	754.4	3.2363	3.3541	0.1178	20365.9	20389.9	24.0	1.22	1.21	1.22	1749.9	67
16-Aug-12	Cloudy	303.1	752.1	3.2838	3.4184	0.1346	20392.9	20416.9	24.0	1.21	1.21	1.21	1746.2	77
22-Aug-12	Sunny	301.3	757.7	3.2576	3.3324	0.0748	20418.9	20442.9	24.0	1.22	1.22	1.22	1756.4	43
28-Aug-12	Sunny	303.5	755.7	3.1684	3.3062	0.1378	20444.9	20468.9	24.0	1.21	1.21	1.21	1748.8	79
-				-		-			-				Min	43
													Max	79



APPENDIX F NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - Noise Monitoring Results

Location NM1	Location NM1 - Government Staff Quarters										
Dete	Time	Weather	dE	dB (A) (30-min)							
Date	Date Time		L _{eq}	L ₁₀	L ₉₀						
6-Aug-12	10:15	Cloudy	65.7	68.3	61.0						
13-Aug-12	17:00	Sunny	66.0	67.6	64.1						
20-Aug-12	10:00	Cloudy	59.6	65.2	57.9						
27-Aug-12	14:30	Sunny	70.3	72.8	68.5						
		Average	66.8	68.5	62.9						
		Minimum	59.6	65.2	57.9						
		Maximum	70.3	72.8	68.5						



APPENDIX G - RECORDS OF LANDFILL GA	AS MEASUREMENT BY THE CONTRACTOR
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Date of Measurement	Sampling time	Balance gas (%)	Combustible Gas (Methane) (% LEL)	Carbon dioxide (%)	Oxygen (%)
1-Aug-12	8:45 AM	79.1	0	0	20.9
1-Aug-12	1:45 PM	79.1	0	0	20.9
2-Aug-12	8:45 AM	79.1	0	0	20.9
2-Aug-12	1:45 PM	79.1	0	0	20.9
3-Aug-12	8:45 AM	79.1	0	0	20.9
		79.1	0	0	20.9
				0	20.9
				0	20.9
					20.9
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					20.9
51-Aug-12	8:45 AM	/9.1	0	0	20.9
	1-Aug-12 1-Aug-12 2-Aug-12 2-Aug-12	1-Aug-12 8:45 AM 1-Aug-12 1:45 PM 2-Aug-12 8:45 AM 2-Aug-12 1:45 PM 3-Aug-12 1:45 PM 3-Aug-12 1:45 PM 4-Aug-12 1:45 PM 4-Aug-12 8:45 AM 6-Aug-12 8:45 AM 6-Aug-12 8:45 AM 6-Aug-12 8:45 AM 7-Aug-12 8:45 AM 7-Aug-12 8:45 AM 9-Aug-12 8:45 AM 9-Aug-12 8:45 AM 9-Aug-12 8:45 AM 9-Aug-12 8:45 AM 10-Aug-12 8:45 AM 10-Aug-12 8:45 AM 11-Aug-12 8:45 AM 15-Aug-12 8:45 AM	1-Aug-12 8:45 AM 79.1 1-Aug-12 1:45 PM 79.1 2-Aug-12 8:45 AM 79.1 3-Aug-12 1:45 PM 79.1 3-Aug-12 1:45 PM 79.1 3-Aug-12 8:45 AM 79.1 4-Aug-12 1:45 PM 79.1 4-Aug-12 1:45 PM 79.1 6-Aug-12 1:45 PM 79.1 6-Aug-12 1:45 PM 79.1 6-Aug-12 1:45 PM 79.1 7-Aug-12 1:45 PM 79.1 8-Aug-12 1:45 PM 79.1 8-Aug-12 1:45 PM 79.1 9-Aug-12 1:45 PM 79.1 9-Aug-12 1:45 PM 79.1 10-Aug-12 1:45 PM 79.1 10-Aug-12 1:45 PM 79.1 11-Aug-12 8:45 AM 79.1 13-Aug-12 1:45 PM 79.1 14-Aug-12 1:45 PM 79.1 13-Aug-12 1:45 PM 79.1		I-Aug-I2 845 AM 79.1 0 0 I-Aug-I2 145 PM 79.1 0 0 2-Aug-I2 845 AM 79.1 0 0 3-Aug-I2 145 PM 79.1 0 0 3-Aug-I2 845 AM 79.1 0 0 4-Aug-I2 145 PM 79.1 0 0 4-Aug-I2 845 AM 79.1 0 0 6-Aug-I2 845 AM 79.1 0 0 6-Aug-I2 845 AM 79.1 0 0 7-Aug-I2 145 PM 79.1 0 0 7-Aug-I2 145 PM 79.1 0 0 8-Aug-I2 145 PM 79.1 0 0 9-Aug-I2 145 PM 79.1 0 0 9-Aug-I2 145 PM 79.1 0 0 10-Aug-I2 145 PM 79.1 0 0 11-Aug-I2 145 PM 79.1 0

Location	Date of Measurement	Sampling time	Balance gas (%)	Combustible Gas (Methane) (% LEL)	Carbon dioxide (%)	Oxygen (%)
FC9B	1-Aug-12	9:00 AM	79.1	0	0	20.9
	1-Aug-12	2:00 PM	79.1	0	0	20.9
	2-Aug-12	9:00 AM	79.1	0	0	20.9
	2-Aug-12	2:00 PM	79.1	0	0	20.9
	3-Aug-12	9:00 AM	79.1	0	0	20.9
	3-Aug-12	2:00 PM	79.1	0	0	20.9
	4-Aug-12	9:00 AM	79.1	0	0	20.9
	4-Aug-12	2:00 PM	79.1	0	0	20.9
	6-Aug-12	9:00 AM	79.1	0	0	20.9
	6-Aug-12	2:00 PM	79.1	0	0	20.9
	7-Aug-12	9:00 AM	79.1	0	0	20.9
	7-Aug-12	2:00 PM	79.1	0	0	20.9
	8-Aug-12	9:00 AM	79.1	0	0	20.9
	8-Aug-12	2:00 PM	79.1	0	0	20.9
	9-Aug-12	9:00 AM	79.1	0	0	20.9
	9-Aug-12	2:00 PM	79.1	0	0	20.9
	10-Aug-12	9:00 AM	79.1	0	0	20.9
	10-Aug-12	2:00 PM	79.1	0	0	20.9
	11-Aug-12	9:00 AM	79.1	0	0	20.9
	11-Aug-12	2:00 PM	79.1	0	0	20.9
	13-Aug-12	9:00 AM	79.1	0	0	20.9
	13-Aug-12	2:00 PM	79.1	0	0	20.9
	14-Aug-12	9:00 AM	79.1	0	0	20.9
	14-Aug-12	2:00 PM	79.1	0	0	20.9
	15-Aug-12	9:00 AM	79.1	0	0	20.9
	15-Aug-12	2:00 PM	79.1	0	0	20.9
	16-Aug-12	9:00 AM	79.1	0	0	20.9
	16-Aug-12	2:00 PM	79.1	0	0	20.9
	17-Aug-12	9:00 AM	79.1	0	0	20.9
	17-Aug-12	2:00 PM	79.1	0	0	20.9
	18-Aug-12	9:00 AM	79.1	0	0	20.9
	18-Aug-12	2:00 PM	79.1	0	0	20.9
	20-Aug-12	9:00 AM	79.1	0	0	20.9
	20-Aug-12	2:00 PM	79.1	0	0	20.9
	21-Aug-12	9:00 AM	79.1	0	0	20.9
	21-Aug-12	2:00 PM	79.1	0	0	20.9
	22-Aug-12	9:00 AM	79.1	0	0	20.9
	22-Aug-12	2:00 PM	79.1	0	0	20.9
	23-Aug-12	9:00 AM	79.1	0	0	20.9
<u> </u>	23-Aug-12	2:00 PM	79.1	0	0	20.9
<u> </u>	24-Aug-12	9:00 AM	79.1	0	0	20.9
	24-Aug-12 24-Aug-12	2:00 PM	79.1	0	0	20.9
<u></u>	25-Aug-12	9:00 AM	79.1	0	0	20.9
	25-Aug-12 25-Aug-12	2:00 PM	79.1	0	0	20.9
	25-Aug-12 27-Aug-12	9:00 AM	79.1	0	0	20.9
	27-Aug-12 27-Aug-12	2:00 PM	79.1	0	0	20.9
	27-Aug-12 28-Aug-12	9:00 AM	79.1	0	0	20.9
	28-Aug-12 28-Aug-12	2:00 PM	79.1	0	0	20.9
	28-Aug-12 29-Aug-12	9:00 AM	79.1	0	0	20.9
	29-Aug-12 29-Aug-12	2:00 PM	79.1	0	0	20.9
	30-Aug-12	9:00 AM	79.1	0	0	20.9
			79.1	0	0	20.9
	30-Aug-12	2:00 PM	79.1			20.9
	31-Aug-12	9:00 AM		0	0	20.9
	31-Aug-12	2:00 PM	79.1	U	U	20.9

Location	Date of Measurement	Sampling time	Balance gas (%)	Combustible Gas (Methane) (% LEL)	Carbon dioxide (%)	Oxygen (%)
FC10B	1-Aug-12	9:15 AM	79.1	0	0	20.9
	1-Aug-12	2:15 PM	79.1	0	0	20.9
	2-Aug-12	9:15 AM	79.1	0	0	20.9
	2-Aug-12	2:15 PM	79.1	0	0	20.9
	3-Aug-12	9:15 AM	79.1	0	0	20.9
	3-Aug-12	2:15 PM	79.1	0	0	20.9
	4-Aug-12	9:15 AM	79.1	0	0	20.9
	4-Aug-12	2:15 PM	79.1	0	0	20.9
	6-Aug-12	9:15 AM	79.1	0	0	20.9
	6-Aug-12	2:15 PM	79.1	0	0	20.9
	7-Aug-12	9:15 AM	79.1	0	0	20.9
	7-Aug-12	2:15 PM	79.1	0	0	20.9
	8-Aug-12	9:15 AM	79.1	0	0	20.9
	8-Aug-12	2:15 PM	79.1	0	0	20.9
	9-Aug-12	9:15 AM	79.1	0	0	20.9
	9-Aug-12	2:15 PM	79.1	0	0	20.9
	10-Aug-12	9:15 AM	79.1	0	0	20.9
	10-Aug-12	2:15 PM	79.1	0	0	20.9
	11-Aug-12	9:15 AM	79.1	0	0	20.9
	11-Aug-12	2:15 PM	79.1	0	0	20.9
	13-Aug-12	9:15 AM	79.1	0	0	20.9
	13-Aug-12	2:15 PM	79.1	0	0	20.9
	14-Aug-12	9:15 AM	79.1	0	0	20.9
	14-Aug-12	2:15 PM	79.1	0	0	20.9
	15-Aug-12	9:15 AM	79.1	0	0	20.9
	15-Aug-12	2:15 PM	79.1	0	0	20.9
	16-Aug-12	9:15 AM	79.1	0	0	20.9
	16-Aug-12 16-Aug-12	2:15 PM	79.1	0	0	20.9
	17-Aug-12	9:15 AM	79.1	0	0	20.9
	17-Aug-12	2:15 PM	79.1	0	0	20.9
	18-Aug-12	9:15 AM	79.1	0	0	20.9
	18-Aug-12 18-Aug-12	2:15 PM	79.1	0	0	20.9
	20-Aug-12	9:15 AM	79.1	0	0	20.9
	20-Aug-12 20-Aug-12	2:15 PM	79.1	0	0	20.9
-	20-Aug-12 21-Aug-12	9:15 AM	79.1	0	0	20.9
	21-Aug-12 21-Aug-12	2:15 PM	79.1	0	0	20.9
		9:15 AM	79.1	0	0	20.9
	22-Aug-12 22-Aug-12	2:15 PM	79.1	0	0	20.9
			79.1	0	0	20.9
	23-Aug-12	9:15 AM 2:15 PM		0	0	
	23-Aug-12		79.1 79.1	0	0	20.9 20.9
	24-Aug-12	9:15 AM				
	24-Aug-12	2:15 PM	79.1	0	0	20.9
	25-Aug-12	9:15 AM	79.1	0	0	20.9
	25-Aug-12	2:15 PM	79.1	0	0	20.9
	27-Aug-12	9:15 AM	79.1	0	0	20.9
	27-Aug-12	2:15 PM	79.1	0	0	20.9
	28-Aug-12	9:15 AM	79.1	0	0	20.9
	28-Aug-12	2:15 PM	79.1	0	0	20.9
	29-Aug-12	9:15 AM	79.1	0	0	20.9
	29-Aug-12	2:15 PM	79.1	0	0	20.9
	30-Aug-12	9:15 AM	79.1	0	0	20.9
	30-Aug-12	2:15 PM	79.1	0	0	20.9
	31-Aug-12	9:15 AM	79.1	0	0	20.9
	31-Aug-12	2:15 PM	79.1	0	0	20.9

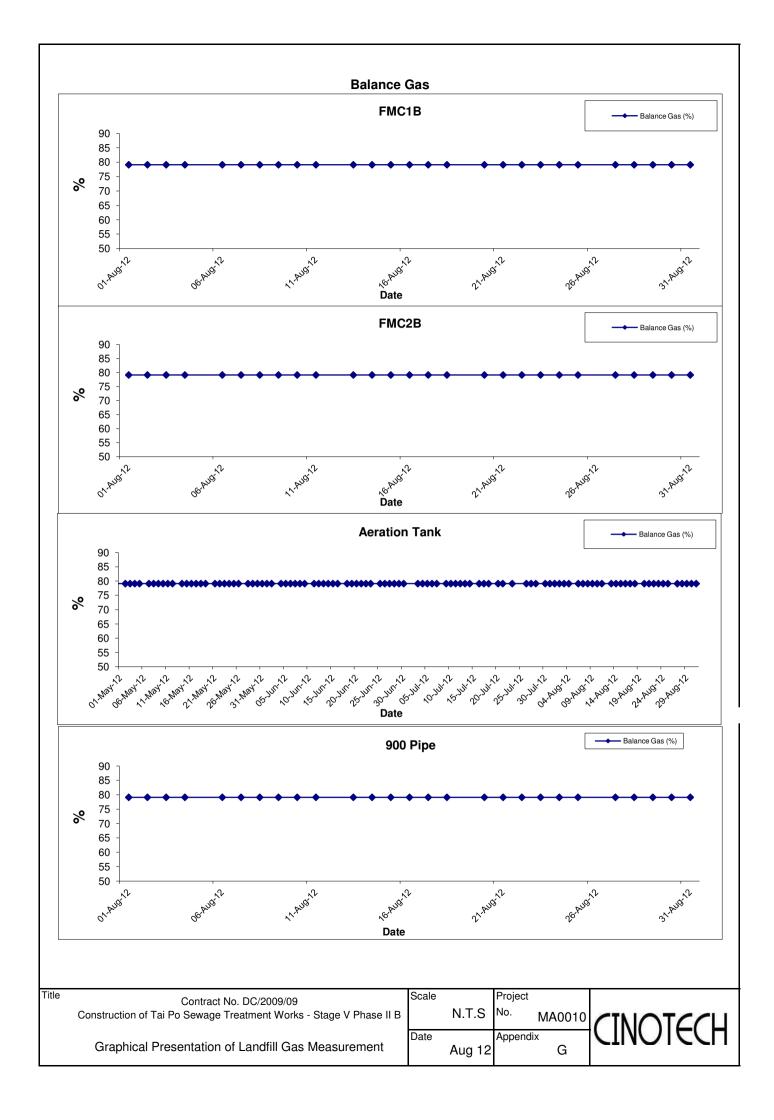
Location	Date of Measurement	Sampling time	Balance gas (%)	Combustible Gas (Methane) (% LEL)	Carbon dioxide (%)	Oxygen (%)
Aeration Tank	1-Aug-12	8:00 AM	79.1	0	0	20.9
	1-Aug-12	1:00 PM	79.1	0	0	20.9
	2-Aug-12	8:00 AM	79.1	0	0	20.9
	2-Aug-12	1:00 PM	79.1	0	0	20.9
	3-Aug-12	8:00 AM	79.1	0	0	20.9
	3-Aug-12	1:00 PM	79.1	0	0	20.9
	4-Aug-12	8:00 AM	79.1	0	0	20.9
	4-Aug-12	1:00 PM	79.1	0	0	20.9
	6-Aug-12	8:00 AM	79.1	0	0	20.9
	6-Aug-12	1:00 PM	79.1	0	0	20.9
	7-Aug-12	8:00 AM	79.1	0	0	20.9
	7-Aug-12	1:00 PM	79.1	0	0	20.9
	8-Aug-12	8:00 AM	79.1	0	0	20.9
	8-Aug-12	1:00 PM	79.1	0	0	20.9
	9-Aug-12	8:00 AM	79.1	0	0	20.9
	9-Aug-12	1:00 PM	79.1	0	0	20.9
	10-Aug-12	8:00 AM	79.1	0	0	20.9
	10-Aug-12	1:00 PM	79.1	0	0	20.9
	11-Aug-12	8:00 AM	79.1	0	0	20.9
	11-Aug-12	1:00 PM	79.1	0	0	20.9
	13-Aug-12	8:00 AM	79.1	0	0	20.9
	13-Aug-12	1:00 PM	79.1	0	0	20.9
	14-Aug-12	8:00 AM	79.1	0	0	20.9
	14-Aug-12	1:00 PM	79.1	0	0	20.9
	15-Aug-12	8:00 AM	79.1	0	0	20.9
	15-Aug-12	1:00 PM	79.1	0	0	20.9
	16-Aug-12	8:00 AM	79.1	0	0	20.9
	16-Aug-12	1:00 PM	79.1	0	0	20.9
	17-Aug-12	8:00 AM	79.1	0	0	20.9
	17-Aug-12	1:00 PM	79.1	0	0	20.9
	18-Aug-12	8:00 AM	79.1	0	0	20.9
	18-Aug-12	1:00 PM	79.1	0	0	20.9
	20-Aug-12	8:00 AM	79.1	0	0	20.9
	20-Aug-12	1:00 PM	79.1	0	0	20.9
	20 Aug 12 21-Aug-12	8:00 AM	79.1	0	0	20.9
	21-Aug-12 21-Aug-12	1:00 PM	79.1	0	0	20.9
	22-Aug-12	8:00 AM	79.1	0	0	20.9
	22-Aug-12 22-Aug-12	1:00 PM	79.1	0	0	20.9
	22-Aug-12 23-Aug-12	8:00 AM	79.1	0	0	20.9
	23-Aug-12 23-Aug-12	1:00 PM	79.1	0	0	20.9
	23-Aug-12 24-Aug-12	8:00 AM	79.1	0	0	20.9
	24-Aug-12 24-Aug-12	1:00 PM	79.1	0	0	20.9
	24-Aug-12 25-Aug-12	8:00 AM	79.1	0	0	20.9
	25-Aug-12 25-Aug-12	1:00 PM	79.1	0	0	20.9
	25-Aug-12 27-Aug-12	8:00 AM	79.1	0	0	20.9
	27-Aug-12 27-Aug-12	1:00 PM	79.1	0	0	20.9
	27-Aug-12 28-Aug-12	8:00 AM	79.1	0	0	20.9
	28-Aug-12 28-Aug-12	1:00 PM	79.1	0	0	20.9
	28-Aug-12 29-Aug-12	8:00 AM	79.1	0	0	20.9
	29-Aug-12 29-Aug-12	1:00 PM	79.1	0	0	20.9
	30-Aug-12	8:00 AM	79.1	0	0	20.9
	30-Aug-12 30-Aug-12	1:00 PM	79.1	0	0	20.9
	30-Aug-12 31-Aug-12	8:00 AM	79.1	0	0	20.9
	31-Aug-12 31-Aug-12	8:00 AM 1:00 PM	79.1	0	0	20.9

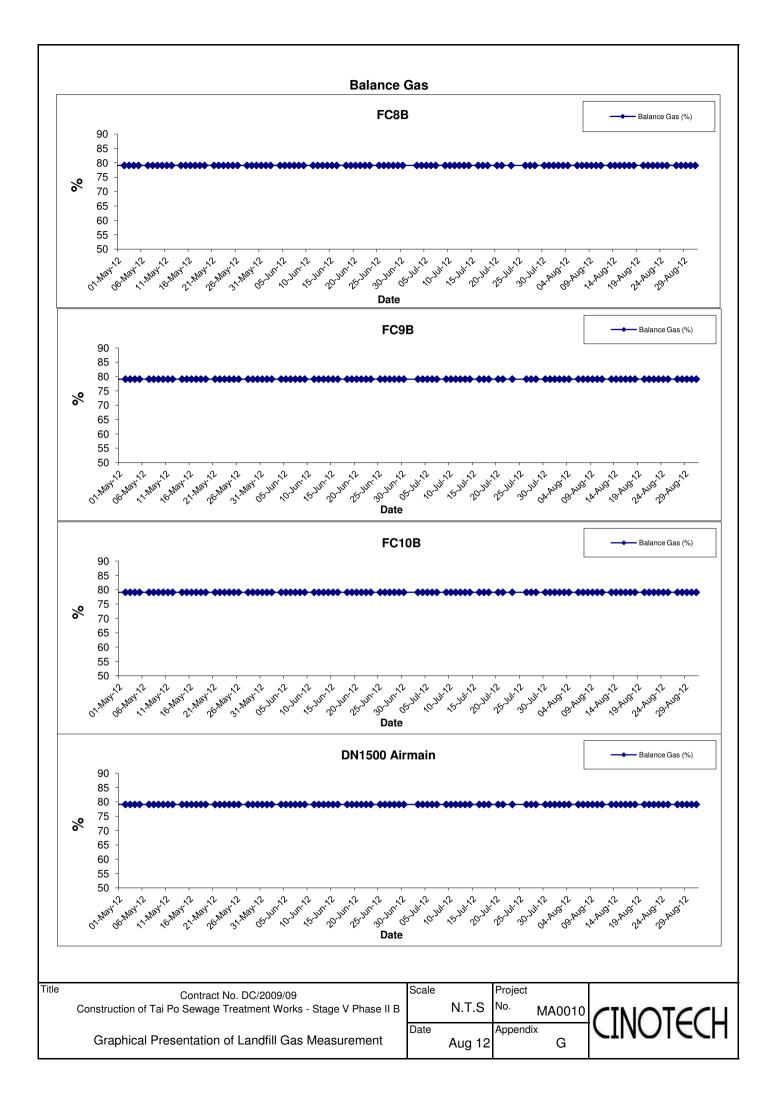
900 Pipe 1-Aug-12 2-Aug-12 2-Aug-12 2-Aug-12 3-Aug-12 3-Aug-12 3-Aug-12 4-Aug-12 4-Aug-12 6-Aug-12 6-Aug-12 7-Aug-12 7-Aug-12 8-Aug-12 7-Aug-12 9-Aug-12 7-Aug-12 10-Aug-12 8-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 <t< th=""><th>8:30 AM 1:30 PM 8:30 AM 1:30 PM 8:30 AM 1:30 PM 8:30 AM 1:30 PM 0.30 PM</th><th>79.1 79.1 79.1 79.1 79.1 79.1 79.1 79.1</th><th>0 0 0 0</th><th>0 0 0</th><th>20.9 20.9</th></t<>	8:30 AM 1:30 PM 8:30 AM 1:30 PM 8:30 AM 1:30 PM 8:30 AM 1:30 PM 0.30 PM	79.1 79.1 79.1 79.1 79.1 79.1 79.1 79.1	0 0 0 0	0 0 0	20.9 20.9
1-Aug-12 2-Aug-12 2-Aug-12 3-Aug-12 3-Aug-12 3-Aug-12 4-Aug-12 4-Aug-12 6-Aug-12 6-Aug-12 7-Aug-12 8-Aug-12 9-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 12-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 19-Aug-12	8:30 AM 1:30 PM 8:30 AM 1:30 PM 8:30 AM 1:30 PM	79.1 79.1 79.1 79.1 79.1	0		20.9
2-Aug-12 3-Aug-12 3-Aug-12 4-Aug-12 4-Aug-12 6-Aug-12 6-Aug-12 7-Aug-12 7-Aug-12 8-Aug-12 9-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 <td>1:30 PM 8:30 AM 1:30 PM 8:30 AM 1:30 PM</td> <td>79.1 79.1 79.1</td> <td></td> <td>0</td> <td></td>	1:30 PM 8:30 AM 1:30 PM 8:30 AM 1:30 PM	79.1 79.1 79.1		0	
3-Aug-12 3-Aug-12 4-Aug-12 4-Aug-12 6-Aug-12 6-Aug-12 7-Aug-12 7-Aug-12 8-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 12-Aug-12 13-Aug-12 14-Aug-12 12-Aug-12<	8:30 AM 1:30 PM 8:30 AM 1:30 PM	79.1 79.1	0	0	20.9
3-Aug-12 4-Aug-12 4-Aug-12 6-Aug-12 6-Aug-12 7-Aug-12 7-Aug-12 8-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 20-Aug-12 21-Aug-12	1:30 PM 8:30 AM 1:30 PM	79.1		0	20.9
4-Aug-12 4-Aug-12 6-Aug-12 6-Aug-12 7-Aug-12 7-Aug-12 8-Aug-12 8-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 17-Aug-12 18-Aug-12 17-Aug-12 18-Aug-12 11-Aug-12 11-Aug-12 12-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 19-Aug-12 20-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12	8:30 AM 1:30 PM		0	0	20.9
4-Aug-12 6-Aug-12 6-Aug-12 7-Aug-12 7-Aug-12 8-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-	1:30 PM		0	0	20.9
6-Aug-12 6-Aug-12 7-Aug-12 7-Aug-12 8-Aug-12 8-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 17-Aug-12 17-Aug-12 18-Aug-12 17-Aug-12 17-Aug-12 17-Aug-12 17-Aug-12 17-Aug-12 18-Aug-12 19-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 22-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12		79.1	0	0	20.9
6-Aug-12 7-Aug-12 7-Aug-12 8-Aug-12 8-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 19-Aug-12 19-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 12-Aug-12 12-Aug-12 13-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-Aug-12 12-A	0.00	79.1	0	0	20.9
7-Aug-12 7-Aug-12 8-Aug-12 8-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
7-Aug-12 8-Aug-12 8-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 19-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 14-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
8-Aug-12 8-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 19-Aug-12 11-Aug-12 11-	8:30 AM	79.1	0	0	20.9
8-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 14-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 12-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
8-Aug-12 9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 13-Aug-12 13-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 12-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
9-Aug-12 9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 17-Aug-12 18-Aug-12 17-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 22-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
9-Aug-12 10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
10-Aug-12 10-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 14-Aug-12 15-Aug-12 16-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
10-Aug-12 11-Aug-12 11-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 14-Aug-12 15-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 17-Aug-12 17-Aug-12 17-Aug-12 17-Aug-12 17-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
11-Aug-12 11-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 14-Aug-12 15-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 19-Aug-12	1:30 PM	79.1	0	0	20.9
11-Aug-12 13-Aug-12 13-Aug-12 14-Aug-12 14-Aug-12 15-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 19-Aug-12	8:30 AM	79.1	0	0	20.9
13-Aug-12 13-Aug-12 14-Aug-12 14-Aug-12 15-Aug-12 15-Aug-12 16-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
13-Aug-12 14-Aug-12 14-Aug-12 15-Aug-12 15-Aug-12 16-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
14-Aug-12 14-Aug-12 15-Aug-12 15-Aug-12 16-Aug-12 16-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 22-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
14-Aug-12 15-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
15-Aug-12 15-Aug-12 16-Aug-12 17-Aug-12 17-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
15-Aug-12 16-Aug-12 17-Aug-12 17-Aug-12 18-Aug-12 20-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
16-Aug-12 16-Aug-12 17-Aug-12 17-Aug-12 18-Aug-12 20-Aug-12 20-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
16-Aug-12 17-Aug-12 17-Aug-12 18-Aug-12 20-Aug-12 20-Aug-12 21-Aug-12 22-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
17-Aug-12 17-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
17-Aug-12 18-Aug-12 18-Aug-12 20-Aug-12 20-Aug-12 21-Aug-12 22-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
18-Aug-12 18-Aug-12 20-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
18-Aug-12 20-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
20-Aug-12 20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
20-Aug-12 21-Aug-12 21-Aug-12 22-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
21-Aug-12 21-Aug-12 22-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
21-Aug-12 22-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
22-Aug-12 22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
22-Aug-12 23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
23-Aug-12 23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
23-Aug-12 24-Aug-12 24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
24-Aug-12 24-Aug-12 25-Aug-12	1:30 PM	79.1	0	0	20.9
24-Aug-12 25-Aug-12	8:30 AM	79.1	0	0	20.9
25-Aug-12	1:30 PM	79.1	0	0	20.9
	8:30 AM	79.1	0	0	20.9
25-Aug-12	1:30 PM	79.1	0	0	20.9
25-Aug-12 27-Aug-12	8:30 AM	79.1	0	0	20.9
27-Aug-12 27-Aug-12	1:30 PM	79.1	0	0	20.9
27-Aug-12 28-Aug-12	8:30 AM	79.1	0	0	20.9
28-Aug-12 28-Aug-12	1:30 PM	79.1	0	0	20.9
28-Aug-12 29-Aug-12	8:30 AM	79.1	0	0	20.9
29-Aug-12 29-Aug-12	1:30 PM	79.1	0	0	20.9
29-Aug-12 30-Aug-12	8:30 AM	79.1	0	0	20.9
30-Aug-12 30-Aug-12	8:30 AM 1:30 PM	79.1	0	0	20.9
×		79.1		0	20.9
31-Aug-12 31-Aug-12	8:30 AM 1:30 PM	79.1	0 0	0	20.9

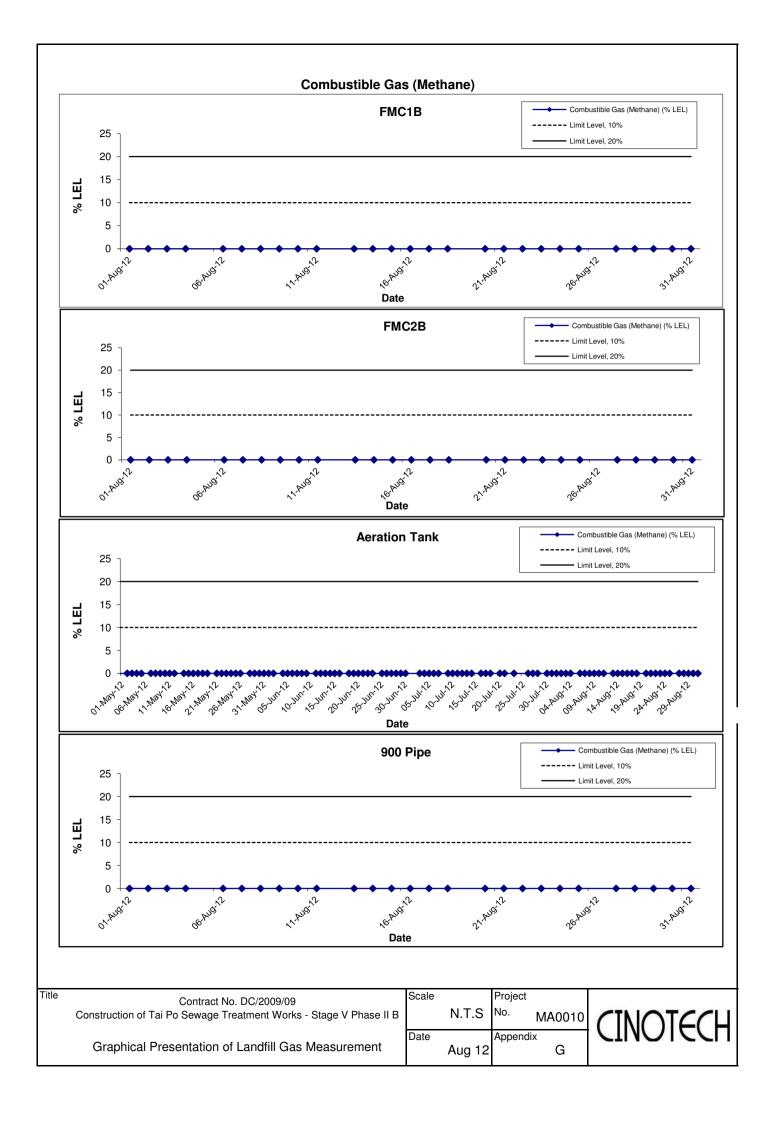
Location	Date of Measurement	Sampling time	Balance gas (%)	Combustible Gas (Methane) (% LEL)	Carbon dioxide (%)	Oxygen (%)
DN 1500 Air Main	1-Aug-12	8:15 AM	79.1	0	0	20.9
Div 1500 Ali Mali	1-Aug-12	1:15 PM	79.1	0	0	20.9
	2-Aug-12	8:15 AM	79.1	0	0	20.9
	2-Aug-12	1:15 PM	79.1	0	0	20.9
	3-Aug-12	8:15 AM	79.1	0	0	20.9
	3-Aug-12	1:15 PM	79.1	0	0	20.9
	4-Aug-12	8:15 AM	79.1	0	0	20.9
	4-Aug-12	1:15 PM	79.1	0	0	20.9
	6-Aug-12	8:15 AM	79.1	0	0	20.9
	6-Aug-12	1:15 PM	79.1	0	0	20.9
	7-Aug-12	8:15 AM	79.1	0	0	20.9
	7-Aug-12	1:15 PM	79.1	0	0	20.9
	8-Aug-12	8:15 AM	79.1	0	0	20.9
	8-Aug-12	1:15 PM	79.1	0	0	20.9
	9-Aug-12	8:15 AM	79.1	0	0	20.9
	9-Aug-12	1:15 PM	79.1	0	0	20.9
	10-Aug-12	8:15 AM	79.1	0	0	20.9
	10-Aug-12	1:15 PM	79.1	0	0	20.9
	11-Aug-12	8:15 AM	79.1	0	0	20.9
	11-Aug-12	1:15 PM	79.1	0	0	20.9
	13-Aug-12	8:15 AM	79.1	0	0	20.9
	13-Aug-12	1:15 PM	79.1	0	0	20.9
	14-Aug-12	8:15 AM	79.1	0	0	20.9
	14-Aug-12	1:15 PM	79.1	0	0	20.9
	15-Aug-12	8:15 AM	79.1	0	0	20.9
	15-Aug-12	1:15 PM	79.1	0	0	20.9
	16-Aug-12	8:15 AM	79.1	0	0	20.9
	16-Aug-12	1:15 PM	79.1	0	0	20.9
	17-Aug-12	8:15 AM	79.1	0	0	20.9
	17-Aug-12	1:15 PM	79.1	0	0	20.9
	18-Aug-12	8:15 AM	79.1	0	0	20.9
	18-Aug-12	1:15 PM	79.1	0	0	20.9
	20-Aug-12	8:15 AM	79.1	0	0	20.9
	20-Aug-12	1:15 PM	79.1	0	0	20.9
	21-Aug-12	8:15 AM	79.1	0	0	20.9
	21-Aug-12	1:15 PM	79.1	0	0	20.9
	22-Aug-12	8:15 AM	79.1	0	0	20.9
	22-Aug-12	1:15 PM	79.1	0	0	20.9
	23-Aug-12	8:15 AM	79.1	0	0	20.9
	23-Aug-12	1:15 PM	79.1	0	0	20.9
	24-Aug-12	8:15 AM	79.1	0	0	20.9
	24-Aug-12	1:15 PM	79.1	0	0	20.9
	25-Aug-12	8:15 AM	79.1	0	0	20.9
	25-Aug-12	1:15 PM	79.1	0	0	20.9
	27-Aug-12	8:15 AM	79.1	0	0	20.9
	27-Aug-12	1:15 PM	79.1	0	0	20.9
	28-Aug-12	8:15 AM	79.1	0	0	20.9
	28-Aug-12	1:15 PM	79.1	0	0	20.9
	29-Aug-12	8:15 AM	79.1	0	0	20.9
	29-Aug-12	1:15 PM	79.1	0	0	20.9
	30-Aug-12	8:15 AM	79.1	0	0	20.9
	30-Aug-12	1:15 PM	79.1	0	0	20.9
	31-Aug-12	8:15 AM	79.1	0	0	20.9
	31-Aug-12	1:15 PM	79.1	0	0	20.9

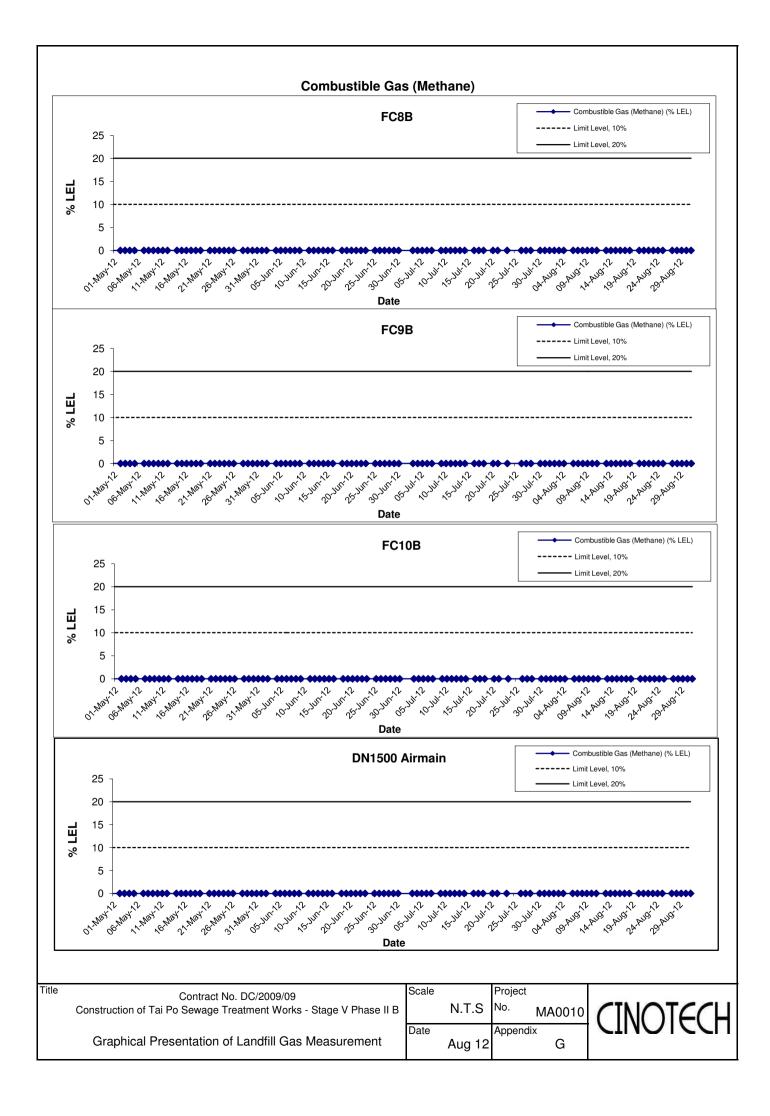
Location	Date of Measurement	Sampling time	Balance gas (%)	Combustible Gas (Methane) (% LEL)	Carbon dioxide (%)	Oxygen (%)
FMC 1B	1-Aug-12	9:30 AM	79.1	0	0	20.9
T MC ID	1-Aug-12	2:30 PM	79.1	0	0	20.9
	2-Aug-12	9:30 AM	79.1	0	0	20.9
	2-Aug-12	2:30 PM	79.1	0	0	20.9
	3-Aug-12	9:30 AM	79.1	0	0	20.9
	3-Aug-12	2:30 PM	79.1	0	0	20.9
	4-Aug-12	9:30 AM	79.1	0	0	20.9
	4-Aug-12	2:30 PM	79.1	0	0	20.9
	6-Aug-12	9:30 AM	79.1	0	0	20.9
	6-Aug-12	2:30 PM	79.1	0	0	20.9
	7-Aug-12	9:30 AM	79.1	0	0	20.9
	7-Aug-12	2:30 PM	79.1	0	0	20.9
	8-Aug-12	9:30 AM	79.1	0	0	20.9
	8-Aug-12	2:30 PM	79.1	0	0	20.9
	9-Aug-12	9:30 AM	79.1	0	0	20.9
	9-Aug-12	2:30 PM	79.1	0	0	20.9
	10-Aug-12	9:30 AM	79.1	0	0	20.9
	10-Aug-12	2:30 PM	79.1	0	0	20.9
	11-Aug-12	9:30 AM	79.1	0	0	20.9
	11-Aug-12	2:30 PM	79.1	0	0	20.9
	13-Aug-12	9:30 AM	79.1	0	0	20.9
	13-Aug-12	2:30 PM	79.1	0	0	20.9
	14-Aug-12	9:30 AM	79.1	0	0	20.9
	14-Aug-12	2:30 PM	79.1	0	0	20.9
	15-Aug-12	9:30 AM	79.1	0	0	20.9
	15-Aug-12	2:30 PM	79.1	0	0	20.9
	16-Aug-12	9:30 AM	79.1	0	0	20.9
	16-Aug-12	2:30 PM	79.1	0	0	20.9
	17-Aug-12	9:30 AM	79.1	0	0	20.9
	17-Aug-12	2:30 PM	79.1	0	0	20.9
	18-Aug-12	9:30 AM	79.1	0	0	20.9
	18-Aug-12	2:30 PM	79.1	0	0	20.9
	20-Aug-12	9:30 AM	79.1	0	0	20.9
	20-Aug-12	2:30 PM	79.1	0	0	20.9
	21-Aug-12	9:30 AM	79.1	0	0	20.9
	21-Aug-12	2:30 PM	79.1	0	0	20.9
	22-Aug-12	9:30 AM	79.1	0	0	20.9
	22-Aug-12 22-Aug-12	2:30 PM	79.1	0	0	20.9
	22-Aug-12 23-Aug-12	9:30 AM	79.1	0	0	20.9
				0	0	
	23-Aug-12	2:30 PM 9:30 AM	79.1 79.1	0		20.9 20.9
	24-Aug-12				0	
	24-Aug-12	2:30 PM	79.1	0	0	20.9
	25-Aug-12	9:30 AM	79.1	0	0	20.9
	25-Aug-12	2:30 PM	79.1	0	0	20.9
	27-Aug-12	9:30 AM	79.1	0	0	20.9
	27-Aug-12	2:30 PM	79.1	0	0	20.9
	28-Aug-12	9:30 AM	79.1	0	0	20.9
	28-Aug-12	2:30 PM	79.1	0	0	20.9
	29-Aug-12	9:30 AM	79.1	0	0	20.9
	29-Aug-12	2:30 PM	79.1	0	0	20.9
	30-Aug-12	9:30 AM	79.1	0	0	20.9
	30-Aug-12	2:30 PM	79.1	0	0	20.9
	31-Aug-12	9:30 AM	79.1	0	0	20.9
	31-Aug-12	2:30 PM	79.1	0	0	20.9

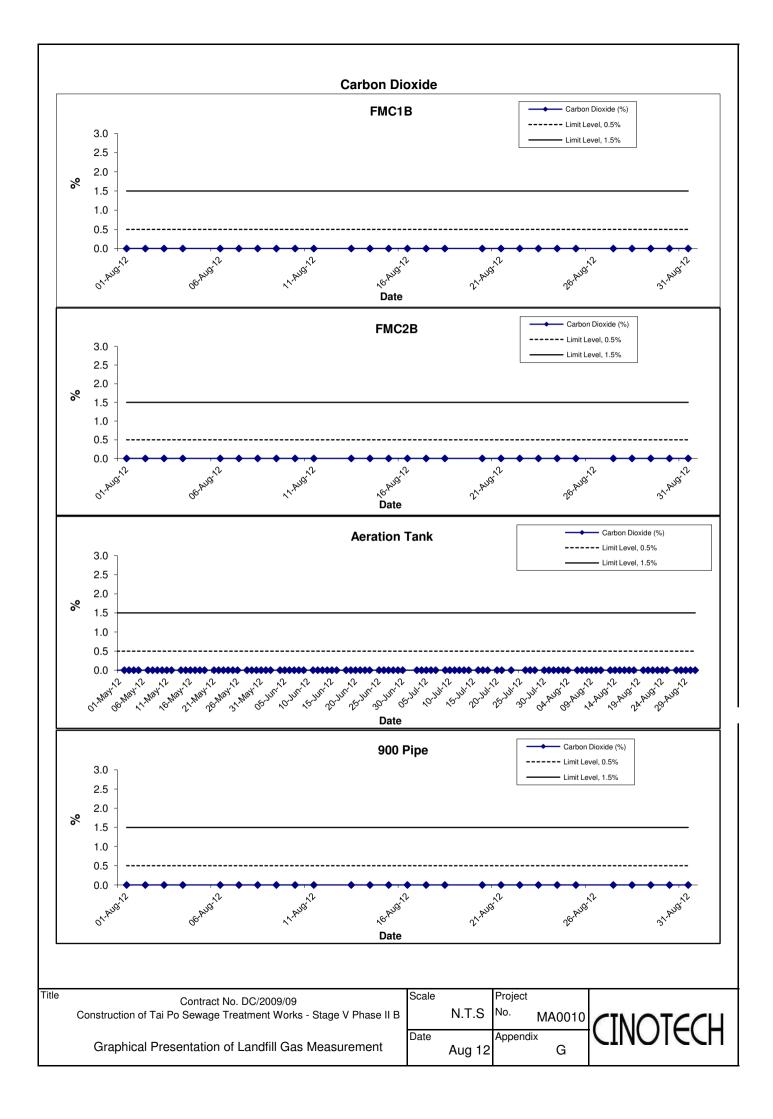
Location	Date of Measurement	Sampling time	Balance gas (%)	Combustible Gas (Methane) (% LEL)	Carbon dioxide (%)	Oxygen (%)
FMC 2B	1-Aug-12	9:45 AM	79.1	0	0	20.9
TMC 2D	1-Aug-12	2:45 PM	79.1	0	0	20.9
	2-Aug-12	9:45 AM	79.1	0	0	20.9
	2-Aug-12	2:45 PM	79.1	0	0	20.9
	3-Aug-12	9:45 AM	79.1	0	0	20.9
	3-Aug-12	2:45 PM	79.1	0	0	20.9
	4-Aug-12	9:45 AM	79.1	0	0	20.9
	4-Aug-12	2:45 PM	79.1	0	0	20.9
	6-Aug-12	9:45 AM	79.1	0	0	20.9
	6-Aug-12	2:45 PM	79.1	0	0	20.9
	7-Aug-12	9:45 AM	79.1	0	0	20.9
	7-Aug-12	2:45 PM	79.1	0	0	20.9
	8-Aug-12	9:45 AM	79.1	0	0	20.9
	8-Aug-12	2:45 PM	79.1	0	0	20.9
	9-Aug-12	9:45 AM	79.1	0	0	20.9
	9-Aug-12	2:45 PM	79.1	0	0	20.9
	10-Aug-12	9:45 AM	79.1	0	0	20.9
	10-Aug-12	2:45 PM	79.1	0	0	20.9
	11-Aug-12	9:45 AM	79.1	0	0	20.9
	11-Aug-12	2:45 PM	79.1	0	0	20.9
	13-Aug-12	9:45 AM	79.1	0	0	20.9
	13-Aug-12	2:45 PM	79.1	0	0	20.9
	14-Aug-12	9:45 AM	79.1	0	0	20.9
	14-Aug-12	2:45 PM	79.1	0	0	20.9
	15-Aug-12	9:45 AM	79.1	0	0	20.9
	15-Aug-12	2:45 PM	79.1	0	0	20.9
	16-Aug-12	9:45 AM	79.1	0	0	20.9
	16-Aug-12	2:45 PM	79.1	0	0	20.9
	17-Aug-12	9:45 AM	79.1	0	0	20.9
	17-Aug-12	2:45 PM	79.1	0	0	20.9
	18-Aug-12	9:45 AM	79.1	0	0	20.9
	18-Aug-12	2:45 PM	79.1	0	0	20.9
	20-Aug-12	9:45 AM	79.1	0	0	20.9
	20-Aug-12	2:45 PM	79.1	0	0	20.9
	21-Aug-12	9:45 AM	79.1	0	0	20.9
	21-Aug-12	2:45 PM	79.1	0	0	20.9
	22-Aug-12	9:45 AM	79.1	0	0	20.9
	22-Aug-12	2:45 PM	79.1	0	0	20.9
	23-Aug-12	9:45 AM	79.1	0	0	20.9
	23-Aug-12	2:45 PM	79.1	0	0	20.9
	24-Aug-12	9:45 AM	79.1	0	0	20.9
	24-Aug-12	2:45 PM	79.1	0	0	20.9
	25-Aug-12	9:45 AM	79.1	0	0	20.9
	25-Aug-12	2:45 PM	79.1	0	0	20.9
	27-Aug-12	9:45 AM	79.1	0	0	20.9
	27-Aug-12	2:45 PM	79.1	0	0	20.9
	28-Aug-12	9:45 AM	79.1	0	0	20.9
	28-Aug-12	2:45 PM	79.1	0	0	20.9
	29-Aug-12	9:45 AM	79.1	0	0	20.9
	29-Aug-12	2:45 PM	79.1	0	0	20.9
	30-Aug-12	9:45 AM	79.1	0	0	20.9
	30-Aug-12	2:45 PM	79.1	0	0	20.9
	31-Aug-12	9:45 AM	79.1	0	0	20.9
	31-Aug-12	2:45 PM	79.1	0	0	20.9

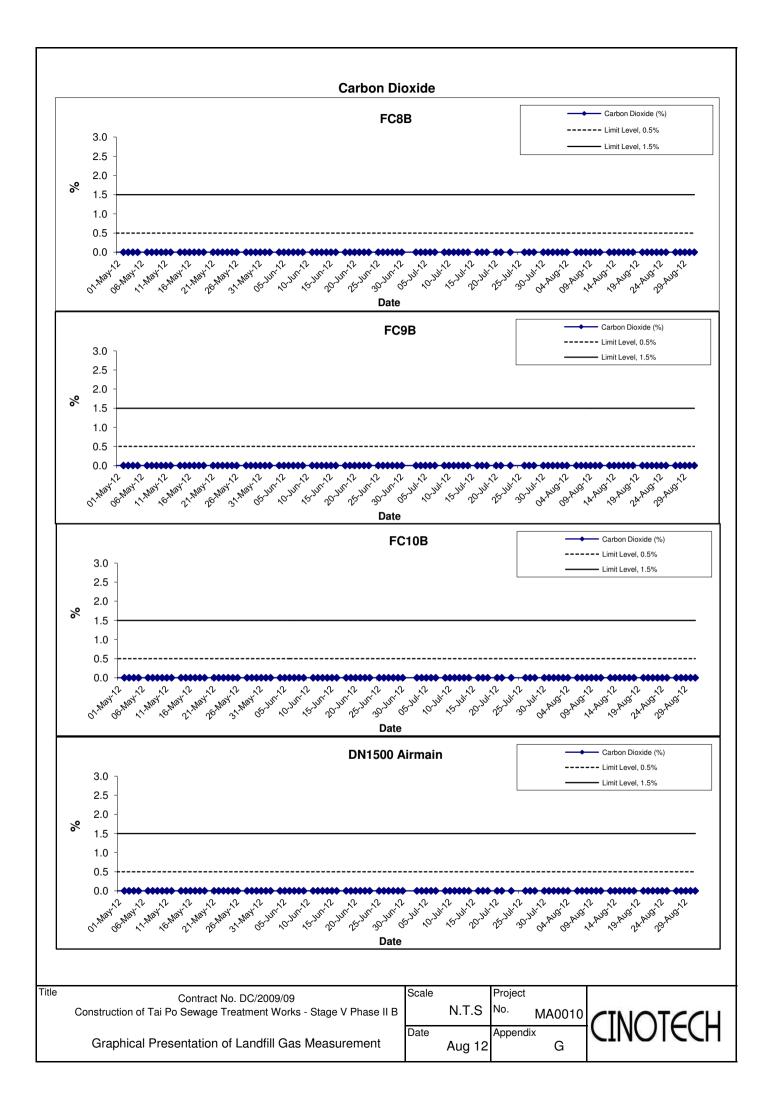


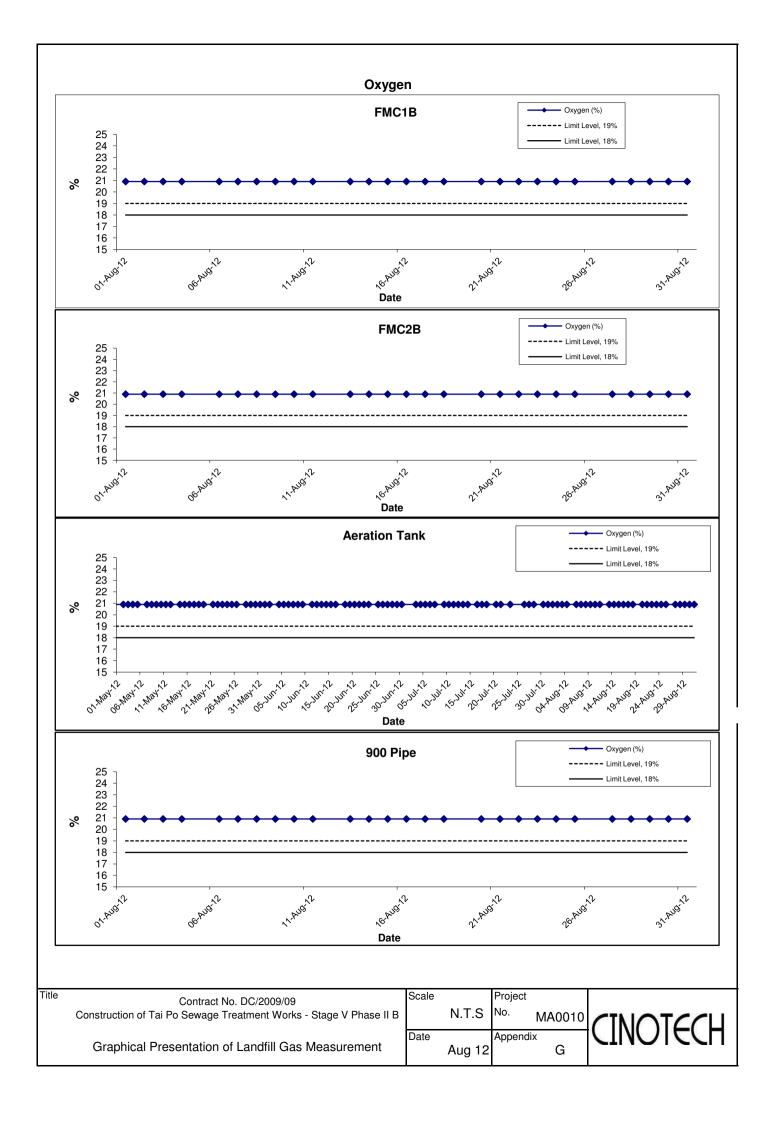


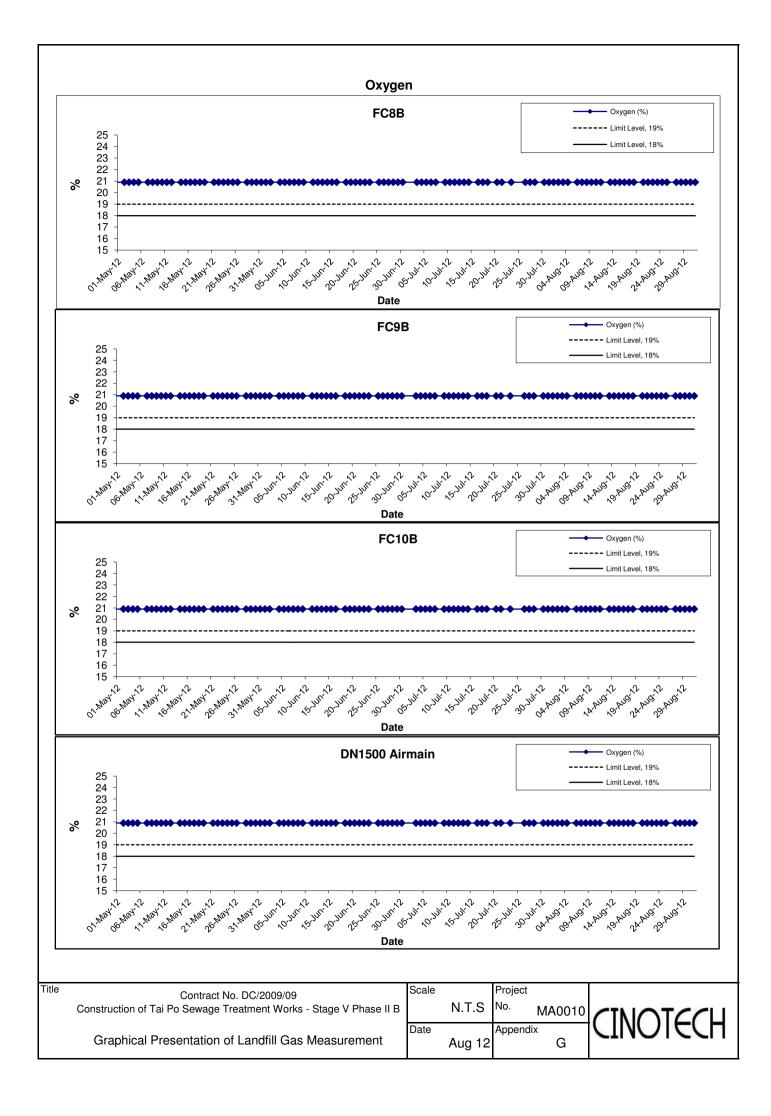












APPENDIX H SUMMARY OF EXCEEDANCE

APPENIDX H – SUMMARY OF EXCEEDANCE

Reporting Month: August 2012

- a) Exceedance Report for 1-hr TSP (NIL)
- b) Exceedance Report for 24-hr TSP (NIL)
- c) Exceedance Report for Construction Noise (NIL)
- d) Exceedance Report for Landfill Gas (NIL)

APPENDIX I SITE AUDIT SUMMARY

Checklist Reference Number	120802	
Date	2 August 2012 (Thursday)	
Time	10:10-11:15	

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B - Water Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part C - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E - Waste / Chemical Management	
120802-R01	• Drip tray at FC7B should be properly managed.	E2i & E7ii
120802-R02 120802-R03	Drip tray should be provided for storage of chemicals at chemical storage room.Stagnant water on drip tray should be removed.	E2i & E7ii E7ii
120802-R04	• Debris near UV disinfection room should be properly cleared.	Eli & Eliii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Part G - Reminder	
	• No environmental deficiency was identified during the site inspection.	
	Others	
	• Follow-up on previous audit section (Ref. No.:120727), follow-up actions are needed for the items 120713-R03 and 120713-R05 in the next inspection.	

	Name	Signature	Date
Recorded by	Ken Cheng	Ken	2 August 2012
Checked by	Dr. Priscilla Choy	WFL	2 August 2012

Checklist Reference Number	120810	
Date	10 August 2012 (Friday)	
Time	10:15-11:00	

Ref. No.	Non-Compliance	Related Item
-	None identified	No. -

Ref. No.	Remarks/Observations	Related Item No.
	Part B - Water Quality	
120810-R03	• The stagnant water at Air Main 1500 should be removed and pumped out into appropriate watercourse before discharging.	B1&B12
	Part C - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E - Waste / Chemical Management	
120810-R01	• The debris at FC6B should be properly disposed.	Eliii
120810-R02	• The chemical wastes and container near the newly-built shelter should be properly managed.	E2ii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Part G - Reminder	
	• No environmental deficiency was identified during the site inspection.	
ļ	Others	
	• Follow-up on previous audit section (Ref. No.:120802), follow-up action is needed for the outstanding item 120713-R03 during the next site inspection.	

	Name	Signature	Date
Recorded by	Ken Cheng	Len	10 August 2012
Checked by	Dr. Priscilla Choy	NI	10 August 2012

Checklist Reference Number	120816
Date	16 August 2012 (Thursday)
Time	10:00-10:45

Ref. No.	Non-Compliance	Related Item No.
• • • • • • •	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B - Water Quality	
120810-001	• The stockpile near FMC2B should be properly managed (e.g. keep away from the drainage or by other means) to avoid mud and sands directly discharged into drainage during rainstorms.	B8&B10
	Part C - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E - Waste / Chemical Management	
120816-R02	• The drip tray should be well maintained to avoid accumulation of stagnant water.	E7ii
120816-R03	• The debris and litter at FC6B should be properly disposed.	Eli&Eliii
	• Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Part G - Reminder	
	• No environmental deficiency was identified during the site inspection.	
	Others	
	• Follow-up on previous audit section (Ref. No.:120810), follow-up action is needed for the outstanding items 120713-R03 and 120810-R02 during the next site inspection.	

	Name	Signature	Date
Recorded by	Ken Cheng	Ken	16 August 2012
Checked by	Dr. Priscilla Choy	WIL	16 August 2012

Checklist Reference Number	120824	
Date	24 August 2012 (Friday)	
Time	10:00-11:00	

Ref. No.	Non-Compliance	Related Item
		No.
. -	None identified	-

Ref. No.	Remarks/Observations	Related Iten No.
	Part B - Water Quality	·
	• No environmental deficiency was identified during the site inspection.	
	Part C - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E - Waste / Chemical Management	
	• No environmental deficiency was identified during the site inspection.	
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Part G - Reminder	
	• No environmental deficiency was identified during the site inspection.	
	Others	
	• Follow-up on previous audit section (Ref. No.:120816), all environmental deficiencies were observed rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Ken Cheng	Ken	24 August 2012
Checked by	Dr. Priscilla Choy	J.L	24 August 2012

Checklist Reference Number	120830
Date	30 August 2012 (Thursday)
Time	10:00-11:00

Ref. No.	Non-Compliance	Related Item
		No.
-	None identified	-

Ref. No.	Remarks/Observations	Related Item No.
	Part B - Water Quality	
120830-O01	• Stagnant water at the concrete pit near DSD site office should be pumped out.	B1&B12
120830-R02	• Water at wheel washing bay was observed silty.	B14iii&B14iv
	Part C - Air Quality	
	• No environmental deficiency was identified during the site inspection.	
	Part D – Noise	
	• No environmental deficiency was identified during the site inspection.	
	Part E - Waste / Chemical Management	
120830-R03	• Dusty debris at Chemical House should be properly disposed.	Eli&Eliii
120830-R04	• Litter and rubbish near wheel washing bay should be properly disposed.	Eli&Eliii
	Part F - Permit / Licenses	
	• No environmental deficiency was identified during the site inspection.	
	Part G - Reminder	
	• No environmental deficiency was identified during the site inspection.	
	Others	
	• Follow-up on previous audit section (Ref. No.:120824), no environmental deficiency was identified during the previous site inspection.	

	Name	Signature	Date
Recorded by	Ken Cheng	Ken	30 August 2012
Checked by	Dr. Priscilla Choy	WL	30 August 2012

APPENDIX J EVENT ACTION PLANS

APPENDIX J (1) – Event Action Plan for Air Quality Monitoring (Construction Phase)

EVENT		ACTIO	N	
EVENI	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	 Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and ER; Repeat measurement to confirm finding; Increase monitoring frequency to daily. 	 Check monitoring data submitted by ET; Check Contractor's working method. 	1. Notify Contractor.	 Rectify any unacceptable practice; Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	 Identify source; Inform IC(E) and ER; Advise the ER on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and ER; If exceedance stops, cease additional monitoring. 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. 	 Confirm receipt of notification of exceedance in writing; Ensure remedial measures properly implemented. 	 Submit proposals for remedial actions to IEC within three working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
LIMIT LEVEL				
1. Exceedance for one sample	 Identify source, investigate the causes of exceedance and propose remedial measures; Inform Contractor, IEC, ER, and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ER on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures. 	 Confirm receipt of notification of exceedance in writing; Notify Contractor; Ensure remedial measures properly implemented. 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within three working days of notification; Implement the agreed proposals; 4. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	 Notify IEC, ER, Contractor and EPD; Identify source; Repeat measurement to confirm findings; Increase monitoring frequency to daily; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Arrange meeting with IEC and ER to discuss the remedial actions to be taken; Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results; If exceedance stops, cease additional monitoring. 	 Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures. 	 Confirm receipt of notification of exceedance in writing; Notify Contractor; In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; Ensure remedial measures properly implemented; If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within three working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the ER until the exceedance is abated.

APPENDIX J (2) – Event Action Plan for Construction Noise Monitoring (Construction Phase)

EVENT		ACT	TION	
EVENI	ET	IEC	ER	CONTRACTOR
ACTION LEVEL	 Notify IEC and Contractor; Carry out investigation; Report the results of investigation to the IEC, ER and Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness. 	 Review the analyzed results submitted by the ET; Review the propose d remedial measures by the Contractor and advise the ER accordingly; Supervise the implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analyzed noise problem; Ensure remedial measures are properly implemented. 	 Submit noise mitigation proposals to IEC; Implement noise mitigation proposals.
LIMIT LEVEL	 Identify source; Inform IEC, ER, EPD and Contractor; Repeat measurements to confirm findings; Increase monitoring frequency; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Inform IEC, ER and EPD the causes and actions taken for the exceedances; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; If exceedance stops, cease additional monitoring. 	 Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures properly implemented; If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the ER until the exceedance is abated.

APPENDIX J (3) – Event Action Plan for Landfill Gas Monitoring (Construction Phase)

Parameter	Limit Level	Action Required
Oxygen	<19%	Ventilate to restore oxygen to >19%
-	<18%	Stop works;
		Evacuate personnel / prohibit entry;
		Increase ventilation to restore oxygen to > 19%
Methane	>10% LEL (i.e. >0.5% by volume)	Post "no smoking signs;
		Prohibit hot works;
		Ventilate to restore methane to <10% LEL
	>20% LEL (i.e. >1% by volume)	Stop works;
		Evacuate personnel / prohibit entry;
		Increase ventilation to restore methane to <10% LEL
Carbon Dioxide	>0.5%	Ventilate to restore carbon dioxide to <0.5%
	>1.5%	Stop works;
		Evacuate personnel / prohibit entry;
		Increase ventilation to restore carbon dioxide to <0.5%

APPENDIX K UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

Type of Impact	Recommended Mitigation Measures	Status
Air Quality	Dust mitigation measures stipulated in <i>the Air Pollution Control (Construction Dust) Regulation</i> shall be incorporated to control dust emission. Notice shall be given to authority prior to commencing of work	V
Noise	Use of quiet PME	N/A
	 Good Site Practice Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program; Mobile plant, if any, should be sited as far from NSRs as possible; Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities. 	V
Water Quality	The practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted to minimize the potential water quality impacts from construction site runoff and various construction activities. The recommendation to install perimeter drains to collect site runoff and to properly treat the runoff by settlement tank/treatment system shall apply to all sites including those for mainlaying works. Minimum distances of 100 m should be maintained between the discharge points of construction site runoff and the existing WSD saltwater intake at Tai Po.	N
	A discharge licence needs to be applied from EPD for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies with all the standards listed in the TM. Reuse and recycling of the treated effluent can minimize water consumption and reduce the effluent discharge volume. The beneficial uses of the treated effluent may include dust suppression, wheel washing and general cleaning. Monitoring of the discharge quality of treated effluent should be part of the Environmental Monitoring and Audit (EM&A) programme. Detailed effluent sampling programme for water quality control during construction phase should be submitted to EPD, AFCD and WSD for approval prior to commencement of the construction works.	V
	The construction programme should be properly planned to minimize soil excavation, if any, in rainy seasons. This prevents soil erosion from exposed soil surfaces. Any exposed soil surfaces should also be properly protected to minimize dust emission. In areas where a large amount of exposed soils exist, earth bunds or sand bags should be provided. Exposed stockpiles should be covered with tarpaulin or impervious sheets at all time. The stockpiles of materials should be placed in the locations away from any stream courses so as to avoid releasing materials into the water bodies. Final surfaces of earthworks should be compacted and protected by permanent work. It is suggested that haul roads should be paved with concrete and the temporary access roads are protected using crushed stone or gravel, wherever practicable. Wheel washing facilities should be provided at all site exits to ensure that earth, mud and debris would not be carried out of the works areas by vehicles.	V
	Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. It is recommended to clean the construction sites on a regular basis.	N

APPENDIX K – Updated Environmental Mitigation Implementation Schedule (During Construction Phase)

Type of Impact	Recommended Mitigation Measures	Status
	It is recommended to provide sufficient chemical toilets in the works areas. The toilet facilities should not be less than 30 m from any watercourse. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis. The construction workers can also make use of the existing toilet facilities within the TPSTW as necessary.	
	Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the project. Implementation of environmental audit on the construction site can provide an effective control of any malpractices and can achieve continual improvement of environmental performance on site.	\checkmark
	It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	V
	Any service shop and minor maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken with the areas appropriately equipped to control these discharges.	V
	 Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport Chemical waste containers should be suitably labelled to notify and warn the personnel who are handling the wastes to avoid accidents. Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 	~
	Marine water quality monitoring should be carried out under emergency condition or during maintenance of the THEES tunnel to verify the findings of the water quality modelling. It is recommended that the maintenance of the THEES tunnel, if unavoidable, should be conducted during winter season or low flow periods and to avoid the "blooming" season of algae (normally from April to June) if practicable. Details of the monitoring requirements are specified in the EM&A Manual.	N/A

Type of Impact	Recommended Mitigation Measures	Status
Waste Management	 Good site practices during the construction activities include: Nomination of approved personnel, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site. Training of site personnel in proper waste management and chemical waste handling procedures. Provision of sufficient waste disposal points and regular collection for disposal. Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility. Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. A Waste Management Plan shall be prepared and this WMP shall be submitted to the Engineer for approval. One may make reference to ETWB TCW No. 15/2003 for details. In order to monitor the disposal of C&D materials at landfills and public filling areas, and to control fly tipping, a trip-ticket system shall be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. One may make reference to WBTC No. 21/2002 for details. A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) shall be proposed. 	V
	 Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. To encourage collection of aluminum cans by individual collectors, separate labelled bins shall be provided to segregate this waste from other general refuse generated by the work force. Any unused chemicals or those with remaining functional capacity shall be recycled. Maximize the use of reusable steel formwork to reduce the amount of C&D material. Prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimize the quantity of waste to be disposed of to landfill. Proper storage and site practices to minimize the potential for damage or contamination of construction materials. Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste. Minimize over ordering of concrete, mortars and cement grout by doing careful check before ordering 	√
	<i>General Refuse</i> General refuse shall be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D material. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.	V
	<i>Construction & Demolition (C&D) Material</i> C&D material generated from the site formation and demolition works shall be sorted on-site into inert C&D material (i.e. public fill) and C&D waste. In order to minimise the impact resulting from collection and transportation of C&D material for off-site disposal, the excavated material comprising fill material shall be reused on-site as backfilling material as far as practicable. C&D waste, such as wood, plastic, steel and other metals shall be reused or recycled and, as a last resort, disposed of to landfill. A suitable area shall be designated within the site for temporary stockpiling of C&D material and to facilitate the sorting process.	\checkmark

Type of Impact	Recommended Mitigation Measures	Status
	<i>Bentonite Slurry</i> Bentonite slurries used in construction works should be reconditioned and reused wherever practicable. Residual used bentonite slurry should be disposed of from the site as soon as possible. The Contractor should explore alternative disposal outlets for the residual used bentonite slurry and disposal at landfill should be the last resort.	N/A
Landfill Gas Hazard	All personnel who work on the site and all visitors to the site should be aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices should be displayed at prominent position around the site. Adequate fire extinguisher equipment and fire resistant clothing should be made available on site.	V
	Service runs within the consultation zone should be designated as "special routes" and utilities companies should be informed of this and should implement precautionary measures.	\checkmark
	 Precautionary measures to minimize landfill gas hazard during excavation: No smoking or burning shall be allowed No worker shall work alone at any time in the confined space or any excavation trenches Construction equipment shall be equipped with a vertical exhaust at least 0.6 m above ground level and /or with a park arrestors Electrical motors and electrical extension cords shall be explosive-proof or intrinsically safe Permit to Work procedures to be adopted for welding, flame cutting or other hot works in trenches or confined spaces Forced ventilation if working in a trench deeper than 1 m Close all valves immediately after piping assembly or conduiting construction. For the large diameter pipes, pipe end shall be capped on one side. Forced ventilation shall also be provided before commissioning of the pipeline and staff entering and working in it Routine monitoring shall be conducted in all excavations to ensure the works shall be included in the Safety Plan Monitoring shall be conducted at the cracks on the ground floor during ground-works construction 	1
	 Where there are any temporary site offices, or any other buildings which have enclosed spaces with the capacity to accumulate landfill gas, then they should either: be located on an area which has been proven to be free of landfill gas (by survey with portable gas detectors) and monitored manually by the Safety Officer or an approved wand appropriately qualified person to ensure that hazardous concentration of landfill gas does not occur; or be raised clear of the ground. If buildings are raised clear of the ground, a minimum, clear separation (as measured from the highest point on the ground surface to the underside of lowest floor joist) should be 500mm 	V

Note: $\sqrt{-}$ Compliance of mitigation measures X - Non-compliance of mitigation measures N/A - Not applicable

APPENDIX L WASTE GENERATION IN THE REPORTING MONTH Name of Department: DSD

Contract No.: DC/2009/09

(Notes: The following Waste Flow Table should be used for contracts either not included under the Pay for Safety and Environment Scheme or exempted from the full requirement for environmental management)

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		Actual Quantities	of Inert C&D Mat	erials Generated	Actual Quantities of C&D Wastes Generated Monthly						
Month	Total Quantity Generated	Broken Concrete (see Note 3)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastic (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m3)
Jan	3.18	0	0	3.17	0.01	0	1.2	0	0	0	0.01
Feb	1.26	0	0	1.26	0	0	0.8	0	0	0	0.005
Mar	0.002	0	0	0	0.002	0.023	0.6	0	0	0	0.002
Apr	0	0	0	0	0	0	0	0	0	0	0.003
May	1.212	0	1.2	0	0.012	0	0	0	0	0	0.011
June	1.304	0	1.3	0	0.004	0	0	0	0	0	0.012
Sub-total	6.948	0	2.5	4.43	0.028	0.023	2.6	0	0	0	0.043
July	0.004	0	0	0	0.004	0	0	0	0	0	0.007
Aug	2.816	0	0	0	2.816	0	0	0	0	0	0.011
Sept											
Oct											
Nov											
Dec											
Total	9.786	0	2.5	4.43	2.848	0.023	2.6	0	0	0	0.061

Waste Flow Table

Notes: (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

(2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(3) Broken concrete for recycling into aggregates.

APPENDIX M COMPLAINT LOG

APPENDIX M – COMPLAINT LOG

Reporting Month: August 2012

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A	N/A

Remarks: No environmental complaint was received in the reporting month.

APPENDIX N CONSTRUCTION PROGRAMME

ૢૢૢૢૢૢૢ૽૽ૺૡ૽ૺૼ૾ૺ૾	Description	Orig Ea Dur Sta			Total Float	EB MAR APR MAY	201	AUG SEP (2011	AUC SED	OCT NOV	2012 DEC JAN FEB MAR APR MAY JUN JUL
1657	Base Slab of FC11B	22 19OC	F10 09NC	OV10	0				⊷ioona Bas	e Slab	of FC11B	APK MAT		AUG SEP	UCT NUV	DEC JAN FEB MAR APR MAY JUN JUL
12030	Structural Wall for FC11B	35 10NO	/10 14DE	EC10	0						ural Wall	for FC11	в			• • • • • • •
12040	Watertightness Test for FC11B	20 15DE	C10 03JA	N11	0		1		1		tertightne			з		
12050	Concrete Coating for FC11B	10 09JAN	11 18JA	N11	10d						Concrete C					
	Backfilling for FC11B	20 04JAN	11 23JA	N11	0					1	Backfilling					
and the second s	Works								-	<u>F</u>						
	DN700 DI Pipe % FC12B & extg chamber	50 19OC	10 07DE	EC10	52d					DN700	U Pipe %	6 FC12B	& exta c	hamber		
13020	DN700 DI Pipe % FC11B & extg chamber	50 10NO		· · · · ·	30d						700 DI Pip				er	
13030	Sludge Drawoff Chamber (C1B~C4B) & Pipework		0 21JA		7d		1				Sludge Dra					work
13040	Sludge Drawoff Chamber C5B & Pipework	15 14JAN			0						-Sludge D					
13050	Cable Ducting at Sludge Dewatering House	150 30MA			155d			i I Cable	Ducting					000 0.1 1	bonon	
Section II	of Works		do ance de						2000.19		90 001140	5/11g /100				
Drilling V	Works						1									
20001	Notification from Engineer	90 29JAN	11 28AF	PR11	0		1						ication fr	om Engin		
	Section II of Works	460 28FEE	· · · · · · · · · · · · · · · · · · ·		90d					1				oni Engin		
	Removal of extg Final Clarifier FC9 & FC10	25 28FEE			000							omoural		nal Clarif		Section 1
	Pre-drilling Works for FC9B & FC10B (18 nos)	45 25MA						1			1		-			
	Removal of extg Final Clarifier FC7 & FC8	25 25MA			20d					2						FC10B (18 nos)
	Pre-drilling Works for FC7B & FC8B (18 nos)		11 22JU		200	· · · · · · · · · · · · · · · ·	-	54 - 5 - 5 - 5 - 5 5 { 5 - 6 - 6 - 6 - 7 - 7 - 7 - 7 - 7 - 7 - 7			• • •					C7 & FC8
	Socketted H-piling (80 nos)	120 23JUN						}	• • •	-		-		-		C7B & FC8B (18 nos)
	Proof Drilling for Socketted H-pile (4 nos)	28 21001						1		-		F				etted H-piling (80 nos)
	Load Test for extg Steel Pile (4 nos)	28 2100						1								roof Drilling for Socketted H-pile (4
	Load Test for Socketted H-pile (1 no)	14 18NO			183d	1	1					-				bad Test for extg Steel Pile (4 nos)
	Pre-drilling Works for Washout Chamber (4 nos)	14 18NO											· · · <u>· · · ·</u> · · ·			Load Test for Socketted H-pile (1 r
	Mini-piling for Washout Chamber (10 nos)	90 07JUL			7d							L				Washout Chamber (4 nos)
	Load Test for Mini-pile (1 no)				7d											ng for Washout Chamber (10 nos)
the state of the s	htter No. FC7B to FC10B	14 05001	11 1800		7d									اح با	⊠ Load 1	Test for Mini-pile (1 no)
Contraction of the second	Excavation for FC10B	45 4000				C.										
	Pile Head Construction for FC10B	15 18NO\			0											Excavation for FC10B
	Base Slab for FC10B	20 03DEC			0											Pile Head Construction for FC10
	Structural Wall for FC10B	22 23DEC			30d										-	Base Slab for FC10B
		35 14JAN			30d		1									Structural Wall for FC10
	Watertightness Test for FC10B	20 18FEB			45d					Set an air a						Watertightness Test
	Concrete Coating for FC10B	10 09MAF			45d		1. .		-							Concrete Coating for
	Excavation for FC9B	15 03DEC			5d											國 Excavation for FC9B
21110	Pile Head Construction for FC9B	20 23DEC			0	· · · · · · · ·		n an an Angelan	e de la companya de l La companya de la comp	• 2 • • 2 • • 2 • • 2 • • • • • •			1.12		` L I	Pile Head Construction for FC
	Base Slab for FC9B	22 12JAN			5d				i an e da en		·					Base Slab for FC9B
	Structural Wall for FC9B	35 03FEB			5d		1 .				: :	· · · ·				Structural Wall for FC
	Watertightness Test for FC9B	20 09MAR			35d		i ki si si si s	lesses starts								Watertightness Te
	Concrete Coating for FC9B	10 29MAR	12 07API	R12	35d					na en en An en anteres An en anteres	an a			*.		Concrete Coatin
21170 E	Excavation for FC8B	15 18DEC	11 01JAN	V12	10d					en den den de la composition de la comp					4	Excavation for FC8B
	Pile Head construction for FC8B	20 12JAN	2 31JAN	V12	. 0		i · · ·			.a						Pile Head construction for
	Base Slab for FC8B	22 01FEB	2 22FE	312	25d	. 1	· · · ·	1		-						Base Slab for FC8B
	Structural Wall for FC8B	35 23FEB	2 28MA	R12	25d			1 . I				· · · · · · · · ·		•••		Structural Wall for
	Watertightness for FC8B	20 29MAR	12 17API	R12	25d) . 1									Watertightness
	Concrete Coating for FC8B	10 18APR			25d	1	1	E 1 1						1		
	Excavation for FC7B	15 02JAN1			15d			general estimations I I	••••••,••••,••••• •• ••		·					Excavation for FC7B
21240 F	Pile Head Construction for FC7B	20 01FEB1			0	11										Pile Head Construction
21250 E	Base Slab for FC7B	22 21FEB1			0						• •	····		•••••		Base Slab for FC7B
21260 S	Structural Wall for FC7B	35 14MAR			0			1								Structural Wall
21270 V	Watertightness Test for FC7B	20 18APR														Watertightne
	Concrete Coating for FC7B	10 08MAY			15d	B B L	1 1	F								
ipeline W								1 †							_	
And a second model with the second	Excavation for Washout Chamber	15 19OCT	1 0210	/11	2A			1							-	
	Pile Cap of Washout Chamber	30 03NOV			7d	l l	1 1 4	1								avation for Washout Chamber
	Structural Wall of Washout Chamber	30 03DEC1			7d		1) 1 (Pile Cap of Washout Chamber
	DN200 DI Pipework	30 03DEC 30 02JAN1			7d 7d		ł									Structural Wall of Washout Cha
2040 10																

Start date29JAN10Finish date27APR13Data date29JAN10Run date06APR10Page number2Ac Primavera Systems, Inc.Image StartStartStartStartFinitian

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Early bar Progress bar Critical bar Summary bar Start milestone point Finish milestone point

China Harbour Engineering Co. Ltd. TPSTW Stage 5 Phase 2B

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Description	Orig Dur	Early Start	Early Finish	Total Float	2010 FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN J
neral			4220-51-5-55	No. of Concession, Name	A STATE OF AN A STATE OF AN A STATE OF AN A STATE OF AN OF AN A STATE OF
roject Key Date					
000 Possession of Site 0000 Completion of Section I of Works (365d)	0		28JAN10		Possession of Site
0000 Completion of Section II of Works (360d)	0		28JAN11	790d	Completion of Section 1 of Works (365d)
0000 Completion of Section III of Works (4000)			01JUN12		-≻e Com
0000 Completion of Section IV of Works (365d)	- 0		28DEC11	486d	Completion of Section III of Continue IV (COM) (2007)
0000 Completion of Section V of Works (3850)	0		28JAN11 27APR13	820d	Completion of Section IV of Works (365d)
eliminary			2/45813		
010 Site Clearance	30	29JAN10	27FEB10	<u> </u>	Site Clearance
020 Contractor Site Office Set-up		28FEB10	28APR10		
030 Engineer's Accommodation	1	28FEB10	28APR10		Engineer's Accommodation
040 Initial Survey		29JAN10	29MAR10	· [· ·	
050 Condition Survey	· [· · · · · ·	29JAN10	29MAR10		
060 Environmental Baseline Monitoring		30MAR10	<u> </u>		Environmental Baseline Monitoring
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010 Engineer's Green Roof	60	29APR10	27.IUN10	10354	Engineer's Green Roof
020 Excavation and Lateral Support (ELS)		29APR10	28MAY10		Excavation and Lateral Support (ELS)
030 Project Signboard		29APR10			Project Signboard
D40 Pile Load Test Set-up		30MAR10		2d	► Pile Load Test Set-up
050 Falsewk & Fwk for Pile Cap		29MAY10		90d	File Load Test Setup
060 Falsewk & Fwk for Wall Structure		28JUN10	27JUL10	90d	Falsewk & Fwk for Wall Structure
070 Falsewk & Fwk for Top Slab		28JUL10	26AUG10		Falsewk & Fwk for Tcp Slab
080 Multi-part Cover		27AUG10			Multi-part Cover
090 FRP Handrail, Stair & Floor		110CT10			FRP Handrail, Stair & Floor
100 FRP Cover			09NOV10		FRP Cover
110 Aluminium Flooring		25NOV10		840d	Aluminium Flooring
120 Green Roof System at Sludge Dewatering House		29APR10			Free Roof System at Sludge Dewatering House
30 Green Roof System at Transformer House		29APR10			Green Roof System at Transformer House
alenal Fabrication & Delivery				10000	
010 Casing for Mini-pile	55	29APR10	22.JUN10	173d	Casing for Mini-pile
020 Casing for Socketted H-pile		28FEB10		0	Casing for Socketted H-pile
030 Steel Member for Socketted H-pile			23APR10	0	Terminal Steel Member for Socketted H-pile
040 DI Water Pipe Puddle & Tee	,		27JUL10	90d	
050 DI Water Pipeline		29JAN10		1005d	Steel Member for Shelter
060 Steel Member for Shelter		29JAN10		11254	Steel Member for Shelter
tion of Works					
Illing Works		<u></u>			이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이
0010 Section I of Work	365 *	29JAN10	28JAN11	0	Section I of Work
0100 Pre-drilling Works (18 nos)		10MAR10		0	Pre-drilling Works (18 nos)
0110 Preliminary Socketted H-pile		24APR10		n 1	Preliminary Socketted H-pile
0120 Load Test for Preliminary Pile		01MAY10		- n	- Summary Statistics replie
0130 Socketted H-piling (56 nos)	· ·		06AUG10	- n	Socketted H-piling (56 nos)
0140 Proof Drilling (4 nos)		07AUG10		0	Proof Drilling (4 nos)
1150 Load Test for Main Pile (1 no)	+ +	07AUG10	<u> </u>	0	Load Test for Main Pile (1 no)
160 Removal of DN525 & DN900 conc. pipe		04JUL10	17AUG10	164d	Removal of DN525 & DN900 conc. pipe
akčiaritier Nov F.Cl.11B & FC12B				1040	
010 Excavation for FC12B	21	21AUG10	10SEP10	0	Excavation for FC12B
020 Pile Head Construction for FC12B			27SEP10	0 4d	Pies Pile Head Construction for FC12B
025 Base Slab of FC12B		180CT10	180CT10	40 7d	Base Slab of FC12B
030 Structural Wall for FC12B		190CT10	22NOV10	<u> </u>	Structural Wall for FC12B
040 Watertightness Test for FC12B		23NOV10	12DEC10	7d	
050 Concrete Coating for FC12B		18DEC10	27DEC10	7d	Watertightness Test for FC12B
060 Backfilling for FC12B				32d	Concrete Coating for FC12B
010 Excavation for 11B			01JAN11	7d	Backfilling for FC12B
2020 Pile Head Construction for FC11B			01OCT10	0	Excavation for 11B
	1/	0200110	18OCT10	0	Pile Head Construction for FC11B
date 29JAN10 Early bar					
h date 27APR13 date 29JAN10 Progress bar Critical har		ant Roman Ant			
data 06APP10		1.55			China Harbour Engineering Co. Ltd.
Summary Dar					TPSTW Stage 5 Phase 2B
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Description	Orig Early Dur Start	Early Finish	Total Float	FEB MAR APR MAY	2010 JUN JUL /	AUG SEP OCT NOV DEC JAN	2011 FEB MAR APR MAY JUN JUL AUG SEP OCT.	2012 NOV DEC JAN FEB MAR APR MAY JUN JUL AUG
22045 DN300 DI Pipeline	60 01FEB12	31MAR12	7d		1			DN300 DI Pipeline
22050 Connection of DN300 DI Pipe to FC7B~FC12B 22060 Backfilling	30 01APR12	30APR12	7d		5			- Connection of D
22000 Backhing 22070 Construction of FMC1B & FMC2B	25 08MAY12		0		+ +			Backfilling
22075 Modification of RAS Pumping Station	45 03DEC11 30 17JAN12	16JAN12 15FEB12	0					Construction of FMC1B & FMC
22080 DN1000 DI Sludge Pipe	60 16FEB12	15APR12						Modification of RAS Pumpi
22090 Removal of DN600 & DN800 Sludge Pipe	30 16APR12	15/11/12 15/14/12						DN1000 DI Sludge
22100 Backfilling for Sludge Pipe	17 16MAY12		0	1 1 1				Backfilling
ection III of Works								
Difling Works			11 99 P.4.					
30001 Notification from Engineer	30 29JAN10,		64d	Notification fro	om Engin	eer		
30005 Section III of Works 30110 Site Clearance	670 03MAY10	02MAR12	0					Section III of Works
30110 Site Clearance 30120 Pre-drilling for PST5, AT5~AT7 (41 nos)	10 03MAY10	12MAY10	0	i ►⊠ Site	e Clearar	1Ce		
30130 Pre-drilling for Mixed Liquor Channel (8 nos)	. 106 13MAY10	26AUG10	0			Pre-drilling for PST5,	AT5~AT7 (41 nos)	
30140 Prelimiary Socketted H-pilling	20 27AUG10 7 16SEP10	15SEP10 22SEP10	0			te <u>neral actual</u> er is a serie a serie a s a actuale a serie a	ed Liquor Channel (8 nos)	
30150 Load Test for Preliminary Socketted H-pile	14 23SEP10	060CT10	0			Prelimiary Socket	· · · · · · · · · · · · · · · · · · ·	
30160 Socketted H-piling for PST5, AT5~AT7 (174 nos)	263 07OCT10	26JUN11	0				eliminary Socketted H-pile	for PST5, AT5~AT7 (174 nos)
30170 Proof Drilling for PST5 & AT5~AT7 (4 nos)	14 27JUN11	10JUL11	. 0					PST5 & AT5~AT7 (4 nos)
30180 Load Test for Socketted H-pile (2 nos)	14 27JUN11	10JUL11						ocketted H-pile (2 nos)
30190 Pre-drilling for Sludge Digestion Tank (6 nos)	15 16SEP10	30SEP10	225d	• • • • • • • • • • • • • • • • • • • •			udge Digestion Tank (6 nos)	
30200 Socketted H-piling for SD Tank (29 nos)	90 01OCT10	29DEC10	225d			Soc	ketted H-piling for SD Tank (29 nos)	
30210 Proof Drilling for Sludge Digestion Tank (1 no)	7 30DEC10	05JAN11	232d			Pro Pro	oof Drilling for Sludge Digestion Tank (1	no)
30215 Load Test for Sludge Digestion Tank (1 no)	14 30DEC10	12JAN11	225d			; ^l i ≻ Lu	pad Test for Sludge Digestion Tank (1 nd)
30220 Preliminary Mini-pile for Mixed Liquor Channel	7 16SEP10	22SEP10	88d			Preliminary Mini-p	ile for Mixed Liquor Channel	
30230 Load Test for Mini-pile (1 no) 30240 Mini-piling for Mixed Liquor Channel (79 pos)	14 23SEP10	06OCT10	88d			Load Test for M	ini-pile (1 no)	
30240 Mini-piling for Mixed Liquor Channel (79 nos) 30250 Proof Drilling for Mixed Liquor Channel (1 no)	200 07OCT10	24APR11	88d				Mini-piling for Mixed Liquor	
30260 Load Test for Mixed Liquor Channel (1 no)	[·····	01MAY11	111d				Proof Drilling for Miixed Li	
30270 Pre-drilling for Bio-gas Holding Tank (3+1 nos)	14 25APR11 10 16SEP10	08MAY11 25SEP10	104d 250d		1	■ Des deillise for Die	Load Test for Mixed Liqu	r Channel (2 nos)
30280 Mini-piling for Bio-gas Holding Tank (12+8 nos)	52 25APR11	15JUN11	250d 145d	· · · · · · · · · · · · · · · · · · ·			-gas Holding Tank (3+1 nos)	
30290 Proof Drilling for Bio-gas Holding Tank (1 no)		22JUN11	145d				Proof Drilling for Bi	io-gas Holding Tank (1 no)
Primary Sedimentation Tank & Aeration Tank					<u> </u>			
31010 Excavation for AT5 & AT6	30 11JUL11	09AUG11	0				Excavation	for AT5 & AT6
31020 Pile Head for AT5 & AT6 (22 nos)	14 10AUG11	23AUG11	0	and a second				for AT5 & AT6 (22 nos)
31025 Pile Head for AT5 & AT6 (86 nos remained)	53 03SEP11		0					Pile Head for AT5 & AT6 (86 nos remained
31030 Pile Cap for AT5 & AT6	30 26OCT11	24NOV11	32d					Pile Cap for AT5 & AT6
31040 Structural Wall for AT5 & AT6	50 25NOV11	13JAN12	32d	e se transfer and the transfer and the second se	19690			Structural Wall for AT5 & AT6
31050 Watertness Test for AT5 & AT6	17 14JAN12		32d					₩ Watertness Test for AT5 &
31060 Excavation for Effluent Chamber	10 10AUG11		4d		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			for Effluent Chamber
31070 Pile Head for Effluent Chamber (15 nos)	10 24AUG11		0					d for Effluent Chamber (15 nos)
31080 Pile Cap for Effluent Chamber 31090 Structural Wall for Effluent Chamber		22SEP11	65d	1 I 1 I 1 I				ap for Effluent Chamber
31090 Structural Wall for Effluent Chamber 31100 Top Slab & Upstand Wall of Effluent Chamber		01NOV11	73d			· · · · · · · · · · · · · · · · · · ·		Structural Wall for Effluent Chamber
31110 Watertightness for Effluent Chamber		01DEC11	73d		1			Top Slab & Upstand Wall of Effluent
31120 Excavation for PST5 & AT7	15 02DEC11 20 20AUG11		77d		12.5.50			Watertightness for Effluent Chamb
31130 Pile Head for PST5 & AT7 (51 nos)		08SEP11 26NOV11	47d				Excava	tion for PST5 & AT7
31140 Pile Cap for PST5 & AT7		26DEC11	- 0					
31150 Structural Wall for PST5 & AT7		14FEB12	0					Pile Cap for PST5 & AT7
31160 Watertightness Test for PST5 & AT7		02MAR12	0					Watertightness Test for
31165 Diversion of DN80 Fire Fighting Main	60 01JUL10 *		242d		2002/2010	Diversion of DN80 Fire	e Fighting Main	
31170 Excavation for Sludge Digestion Tank No.3 (SDT3)		01FEB11	225d				Excavation for Sludge Digestion Tank N	10.3 (SDT3)
31180 Pile Head Construction for SDT3 (29 nos)	· · · · · · · · · · · · · · · · · · ·	21FEB11	225d		1		Pile Head Construction for SDT3 (29	
31190 Base Slab for SDT3	30 22FEB11	23MAR11	225d	· · • • • • • • • • • • • • • • • • • •			► Base Slab for SDT3	
31200 Structural Wall for SDT3		22APR11	225d		í 1		Structural Wall for SDT3	
31210 Inclined Top Slab for SDT3	45 23APR11	06JUN11	225d		:		Inclined Top Slab for	SDT3
rt date 29JAN10 Early bar sh date 27APR13 Program har								
ta date 2JAPR13 Critical bar						orhour [
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n date 06APR10 Summary bar					10	SINU STORA & DH	1960 JR	
ge number 3A Start milesters solet					16	STW Stage 5 Ph		
n date 06APR10 Summary bar					16	STW Stage 5 FT		

I SEP OCT NOV DEC N300 DI Pipe to FC		21 APR MAY JUN)13 JUL AUG SEP	OCT NOV DEC	
2B ng Station Pipe N600 & DN800 Sluc or Sludge Pipe	lge Pipe				
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AT7 PST5 & AT7					
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31220 Watertightness Test for SDT3	Dur Start Finish	Float	FEB MAR APR MA	JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG S
31220 Watertightness Test for SDT3 31230 Air Tightness Test for SDT3	20 07JUN11 26JUN11	248d		Watertightness Test for SDT3
31240 Excavation for Mixed Liquor Channel (MLC)	2 27JUN11 28JUN11	248d		Air Tightness Test for SDT3
31250 Pile Cap for MLC	30 25MAY11 23JUN11 60 24JUN11 22AUG11	88d		Excavation for Mixed Liquor Channel (MLC)
31260 Structural Wall for MLC	60 23AUG11 210CT11			
31265 Watertightness Test for MLC			ł ;	Structural Wall for MLC
31270 Excavation for Bio-gas Holding Tank Support				Watertightness Test for MLC
31280 Pile Cap for Tank Support & Valve Chamber		144d		Excavation for Bio-gas Holding Tank Support
31290 Structural Wall for Valve Chamber	30 04JUL11 02AUG11 40 03AUG11 11SEP11			→ Image Pile Cap for Tank Support & Valve Chamber
31300 Watertightness Test for Valve Chamber	15 12SEP11 26SEP11			Exercise Structural Wall for Valve Chamber
Pipeline Works	13 123EF11 203EF11	158d		→ ■ Watertightness Test for Valve Chamber
32005 Pipework for PST5, AT5 ~ AT7	120 13JAN11 12MAY11	P000		→ III
32010 Pipework Connection to AT5 & AT6	10 14JAN12 23JAN12	280d		
32020 Pipework for Effluent Chamber	19 02DEC11 20DEC11			Pipework Connection to AT5 & A
32030 Pipework Connection to PST5 & AT7	15 15FEB12 29FEB12		·	► Effluent Chamber
32040 Pipework for SDT3	45 07JUN11 21JUL11	2d 225d		Pipework Connection to PS
32060 Pipework for MLC	45 220CT11 05DEC11	2250 88d		► Pipework for SDT3
32070 Pipework for Valve Chamber	29 12SEP11 100CT11			► Pipework for MLC
Modification / Removal Works		1440		Pipework for Valve Chamber
33010 Removal of extg Control Room	30 25APR11 24MAY11	88d		
33020 Modification of extg Chemical House for SwitchRM	30 25APR11 24MAY11		· •	Removal of extg Control Room
33030 Modification of extg Flow Splitter Box	30 25MAY11 23JUN11	253d		Modification of extg Flow Splitter Box
33040 Modification of extg Aeration Tanks	60 25NOV11 23JAN12	235d 39d		
33050 Modification of extg Effluent Launder	60 25NOV11 23JAN12	390 39d		→ ■ Modification of extg Aeration Tar → ■ ■ Modification of extg Effluent Laur
33060 Shelter for NaOCI Dosing System	60 09MAY11 07JUL11	224d		Shelter for NaOCI Dosing System
33070 Watertightness Test for NaOCI Dosing Shelter	15 08JUL11 22JUL11	224d		→ Shetter for NaOCI Dosing System
33080 Modification of Primin. Sludge Gravity Thickener	30 15JUN10 * 14JUL10	113d		Modification of Primin. Sludge Gravity Thickener
Section IV of Works				
Drilling Works				
40010 Section IV of Works	365 29JAN10 28JAN11	0	-	Section IV of Works
40015 Diversion of DN600 Concrete Pipe	45 01JUN10 * 15JUL10	49d		Diversion of DN600 Concrete Pipe
40110 Pre-drilling for Decanting Chamber (1 no)	7 16JUL10 22JUL10	49d	. 1	Pre-drilling for Decanting Chamber (1 no)
40120 Mini-piling for Decanting Chamber (4 nos)	28 23JUL10 19AUG10		and an an an	Mini-piling for Decanting Chamber (4 nos)
40130 Proof Drilling (4 nos)	28 20AUG10 16SEP10	49d		Proof Drilling (4 nos)
40140 Load Test for Mini-pile (1 no) Structural Works	14 20AUG10 02SEP10		a da a serie da a serie da ante da ante Ante da ante da	Load Test for Mini-pile (1 no)
Structural Works			an en factor actor	
41010 Excavation for Decanting Chamber	10 17SEP10 26SEP10	49d	na na mangana katalan sa sa sa katalan Tanan sa	► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ►
41020 Pile Cap for Decanting Chamber	20 27SEP10 16OCT10	54d		Pile Cap for Decanting Chamber
41030 Structural Wall for Decanting Chamber	30 17OCT10 15NOV10	54d		Structural Wall for Decanting Chamber
41040 Top Slab for Decanting Chamber	20 16NOV10 05DEC10	54d		Top Slab for Decanting Chamber
41050 Excavation for Chemical & Oil Store	10 27SEP10 06OCT10	49d		Excavation for Chemical & Oil Store
41060 Base Slab for Chemical & Oil Store	15 070CT10 210CT10	49d		Base Slab for Chemical & Oil Store
41070 Structural Wall for Chemical & Oil Store	30 22OCT10 20NOV10	49d		Structural Wall for Chemical & Oil Store
41080 Top Slab for Chemical & Oil Store	20 21NOV10 10DEC10	49d		Top Slab for Chemical & Oil Store
41090 Valve Chamber & Conc. Plinth at PSGT Stage I/II	120 03SEP10 31DEC10	28d		Valve Chamber & Conc. Plinth at PSGT Stage I/II
Modification // Removal-Works				
43010 Removal of Chemical Waste Room	30 01JUN10 * 30JUN10	362d		Removal of Chemical Waste Room
43020 Removal of Flower Bed	20 01JUL10 20JUL10	362d		Removal of Flower Bed
43025 Removal of Waste Bio-gas Burner	30 02JUL10 * 31JUL10	121d		Removal of Waste Bio-gas Burner
43030 Removal of Chimney & Associated RC Structure	60 01AUG10 29SEP10	121d		Removal of Chimney & Associated RC Structure
43040 Removal of Storage Facilities	30 28JUN10 27JUL10	65d	.	→ Semoval of Storage Facilities
43050 Shelter for Water Treatment System	120 28JUL10 24NOV10	65d		Shelter for Water Treatment System
43070 Shelter for FeCI3 Dosing System	60 01JUN10 * 30JUL10	76d	L.	Shelter for FeCl3 Dosing System
43080 Watertightness Test for FeCl3 Dosing Shelter	16 31JUL10 15AUG10	76d		Watertightness Test for FeCI3 Dosing Shelter
43090 Steelwork for FeCl3 Dosing Shelter	30 16AUG10 14SEP10	76d		Steelwork for FeCl3 Dosing Shelter
43100 Removal of FeCI3 Dosing System	60 15SEP10 13NOV10	76d		Removal of FeCl3 Dosing System
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China Harbour Engineering Co. Ltd. TPSTW Stage 5 Phase 2B

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ં નેલ આ ગામ	Description	Orig Early Dur Start	Early Finish	Total Float		2011 UG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB M	2012
431	10 Modification of Central Blg Complex	150 01JUN10	280CT10	92d		Modification of Central Blg Complex	AN AFR MAT JUN JUL AUG JI
431	20 Modification of SAS Thickening House	120 15JUN10		48d		Modification of SAS Thickening House	
431	30 Modification of Primary Sludge Thickener	60 13OCT10	11DEC10	48d		Modification of Primary Sludge Thickener	
4314	40 Modification of Filtrate Treatment Plant	120 01JUL10 *		92d	4 11	Modification of Filtrate Treatment Plant	
431	50 Modification of Chlorination House	150 15JUL10 *	11DEC10	48d	539233	Modification of Chlorination House	
4310	60 Floor Opening at Service Tower Building (16 nos)	30 01JUN10	* 30JUN10	92d	Floor	Opening at Service Tower Building (16 nos)	
4316	65 S S Louvre at Inlet Works at Stage IV	60 01JUL10	29AUG10	92d		S S Louvre at Inlet Works at Stage IV	
4317	70 Covered Walkway at Sludge Dewatering House	60 30AUG10	280CT10	92d		Severed Walkway at Sludge Dewatering House	
Road	1& Draginage Works						
420	10 Road & Drainage Works in Portion A	120 21JUL10	17NOV10	362d		Road & Drainage Works in Portion A	
4202	20 Road & Drainage Works along MLC	135 16SEP10	28JAN11	0		Road & Drainage Works along MLC	
1.	n V of Works						-
Land	scaping Works						·
5001	10 Section V of Works	1185 29JAN10	27APR13	0			
5011	10 Tree Survey	60 29JAN10	29MAR10	20d	Tree Survey		
5012	20 Tree Transplanting & Felling Tree	90 30MAR10	27JUN10	20d	Tree -	ransplanting & Felling Tree	
5013	30 Establishment Works to Transplanted Tree	365 28JUN10	27JUN11	670d	• · · · · · · · · •	Establishment Works to Transplante	d Tree
5014	10 Landscaping Softworks	650 28JUN10	07APR12	20d			Landscaping Softwork
5015		650 28JUN11,	07APR13	20d			
5016	0 Irrigation System for Green Roof at TPSTW	120 28JUN10	250CT10	310d		Irrigation System for Green Roof at TPSTW	
5017		120 26OCT10	22FEB11	310d		Green Roof at Sludge Dewatering System	
5018	30 Green Roof at Transformer House	120 23FEB11	22JUN11	310d		Green Roof at Transformer House	
5019		365 23JUN11	21JUN12	310d			Establishm
Othe	S						
5101		60 05JUL10 *	02SEP10	28d		Removal of Waste Bio-burner at PSGT Stage I/II	•
5102		120 26OCT11	22FEB12	430d		Received and the second s	oad & Drainage Works
5103	0 Cable Ducting and Drawpits	350 01APR12	16MAR13	42d			

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China Harbour Engineering Co. Ltd. **TPSTW Stage 5 Phase 2B**

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