Jardine Engineering Corporation Limited

Contract No. DE/2009/09 Supply and Installation of Electrical and Mechanical Equipment for Tai Po Sewage Treatment Works Stage 5 Phase 2B

Monthly Environmental Monitoring and Audit Report for December 2012

(Version 2.0)

Certified By	Chym
	(Environmental 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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CINOTECH CONSULTANTS LTD Room 1710, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong Tel: (852) 2151 2083 Fax: (852) 3107 1388 Email: info@cinotech.com.hk

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EXECUTIVE SUMMARY

Introduction

- 1. This is the 18th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for DSD Contract no. DE/2009/09 "Supply and Installation of Electrical and Mechanical Equipment for Tai Po Sewage Treatment Works Stage 5 Phase 2B". This report documents the findings of EM&A Works conducted in December 2012.
- 2. The major site activities undertaken in the reporting month included:
 - T&C of submersible sludge pump and associated pipework at Sludge Draw-off Chamber No. 4;
 - Process commissioning of Final Clarifier No. 11B (with sewage);
 - Installation of E&M equipment in Aeration Tank No. 5 & 6;
 - Installation of mechanical screen and shaftless conveyor at Stage IV Screening House;
 - Fabrication of bio-gas holder on site;
 - Installation of new sludge dewatering system and sludge feed pump in Sludge Dewatering House Extension;
 - Installation of new centrifuge and associated pipework & electrical work at SAS Thickening House;
 - Installation of Biogas Burner and associated pipework at Stage IV;
 - Dismantling particular diffusers and associated pipeworks at SBR for the removal of accumulated sludge by civil contractor;
 - T&C of FS and BS equipment at Chemical House;
 - Installation and T&C of new MCC at CBC G/F;
 - Installation and T&C of new panel connecting to existing switchboard at Sludge Dewatering House;
 - Setup & Energization of Power Distribution Board for the Replacement of Existing SWB at IW 1F & GF;
 - Installation of MCC2A at CBC 1/F and Load Diversion of Existing E&M Equipment from MCC1 to MCC2A Cabling Works;
 - Cable laying of incomer cables (by CLP) for the new switchboard at CBC G/F;
 - Installation of PLC system K panel at Sludge Dewatering House Extension;
 - Modification of SCADA system at SAS thickening house; and
 - PLC interfacing work between existing PLC system C and new PLC system K.

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 1 Summary Table for Events Recorded in the Reporting Month				
Danamatan	No. of Ex	ceedance	No. of Events	Action Takon
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

Table I Summary Table for Events Recorded in the Reporting Month

Environmental Licenses and Permits

5. Environmental related licenses/permits granted to the Project include the Environmental Permit (EP) for the Project.

Key Information in the Reporting Month

6. 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	Event Details		Action Taken	Status	Remark
Event	Number Nature		Action Taken	Status	кетагк
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 under EP	1	Monthly EM&A Report (November 2012)	Submitted to EPD on 19 th December 2012 (EP condition 6.6)	N/A	
Notifications of any summons & prosecutions	0		N/A	N/A	

Future Key Issues

- 7. Major site activities for the coming two months will include:
 - Process commissioning of Final Clarifier No. 12B (with sewage);
 - Installation of E&M equipment in Aeration Tank No. 5 & 6;
 - Installation of mechanical screen and shaftless conveyor at Stage IV Screening House;
 - Fabrication of bio-gas holder on site;
 - T&C of new sludge dewatering system and sludge feed pump in Sludge Dewatering House Extension;
 - Installation of new centrifuge and associated pipework & electrical work at SAS Thickening House;
 - T&C/ of Biogas Burner and associated pipework at Stage IV;

- Dismantling the remaining existing diffusers and associated pipeworks and installation of new E&M equipment at SBR;
- Delivery of new screw pumps (for Stage IV Inlet Works) to site;
- T&C of FS and BS equipment at Chemical House;
- Installation and T&C of lightning protection pole L4 at Chemical House;
- Checking the electricity meter (in HV side) and energization of switchboard (by CLP) at CBC G/F;
- Cable laying for E&M equipment at SAS Thickening House;
- Setup & Energization of Power Distribution Board for the Replacement of Existing SWB at IW 1F & GF;
- SAT of MCC2A and Load Diversion of Existing E&M Equipment from MCC1 to MCC2A;
- Modification of SCADA system at SAS thickening house;
- PLC interfacing work between existing PLC system C and new PLC system K; and
- PLC works for new filter press at Sludge Dewatering House Extension.
- 8. The future environmental concerns are air quality, noise impacts and waste management from construction works.

1 INTRODUCTION

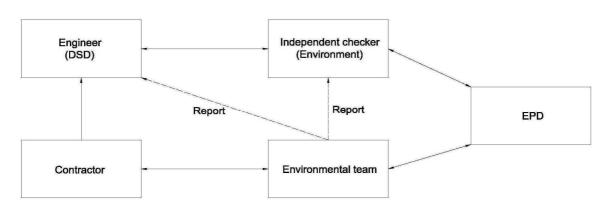
Background

- 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 M. A site layout plan is provided in Figure 1.1. The construction activities of the Project commenced on 16 May 2011.
- 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 18th monthly EM&A report summarizing the EM&A works for the Project in December 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 Jardine Engineering Corporation 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.	
DSD	E&M Branch	Mr. TONG Sau Kit	Senior Engineer	2594 7304	2827 8532	
DSD		Mr. TSE Ho	Engineer	2660 7638	2021 0332	
		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		
Arun	Independent	Mr. Coleman NG	Independent Environmental Checker	2268 3097	2865 6493	
Arup Environmental Checker M		Mr. Lawrence KAN	Assistant to Independent Environmental Checker	2268 3212	2803 0493	
	E&M	Mr. Alex LAW	Project Manager	9312 8659		
JEC	Contractor	Mr. Dexter CHAN	Site Agent	6391 2499	2887 9090	
	Contractor	Mr. Brendan CHAN	Environmental Officer	6892 0956		

Table 1.1Key Project Contacts

Construction Programme

- 1.9 The site activities undertaken in the reporting month were:
 - T&C of submersible sludge pump and associated pipework at Sludge Draw-off Chamber No. 4;
 - Process commissioning of Final Clarifier No. 11B (with sewage);
 - Installation of E&M equipment in Aeration Tank No. 5 & 6;
 - Installation of mechanical screen and shaftless conveyor at Stage IV Screening House;
 - Fabrication of bio-gas holder on site;
 - Installation of new sludge dewatering system and sludge feed pump in Sludge Dewatering House Extension;
 - Installation of new centrifuge and associated pipework & electrical work at SAS Thickening House;
 - Installation of Biogas Burner and associated pipework at Stage IV;

- Dismantling particular diffusers and associated pipeworks at SBR for the removal of accumulated sludge by civil contractor;
- T&C of FS and BS equipment at Chemical House;
- Installation and T&C of new MCC at CBC G/F;
- Installation and T&C of new panel connecting to existing switchboard at Sludge Dewatering House;
- Setup & Energization of Power Distribution Board for the Replacement of Existing SWB at IW 1F & GF;
- Installation of MCC2A at CBC 1/F and Load Diversion of Existing E&M Equipment from MCC1 to MCC2A Cabling Works;
- Cable laying of incomer cables (by CLP) for the new switchboard at CBC G/F;
- Installation of PLC system K panel at Sludge Dewatering House Extension;
- Modification of SCADA system at SAS thickening house; and
- PLC interfacing work between existing PLC system C and new PLC system K.

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.

Table 2.1Locations for Air Quality Monitoring

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.

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.
LIN/S	Graseby GMW 2310 HVS, Model GS-2310105-1, Serial no. 10239 and 0810	
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	1-hour TSP	1 hour	During daytime period	3 times / 6-day
CAM1, CAM2 and CAM3	24-hour TSP	24 hours	24 hours	Once / 6-day

Table 2.3Impact 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 ± 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 $\pm 3^{\circ}$ 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, cloudy and rainy.
- 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.

Table 2.4	Summary Table of Air Quality Monitoring Results during the
	reporting 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)	42	156	97	315	500
24-hr TSP (CAM1)	29	101	67	171	260
1-hr TSP (CAM2)	71	219	123	336	500
24-hr TSP (CAM2)	53	104	84	177	260
1-hr TSP (CAM3)	65	231	128	344	500
24-hr TSP (CAM3)	55	106	88	192	260

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 955 or 957	1
Calibrator	SVANTEK – SV30A	1
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 5 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 Monitoring Results during the Reporting Month

Parameter	Minimum Leq(30min) dB(A)	in) Leq(30min) Leq(30min)		Action Level	Limit Level
NM1	60.4	69.8	66.4	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 ENVIRONMENTAL AUDIT

Site Audits

- 4.1 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**.
- 4.2 Site audits were conducted on 6th, 14th, 20th and 27th December 2012 by ET. A joint site audit with the representative with ER, IEC, the Contractor and the ET was carried out on 14th December 2012. No site inspection was conducted by EPD during the reporting month. The details of observations during site audit can refer to **Table 4.2**.

Review of Environmental Monitoring Procedures

4.3 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.

Status of Environmental Licensing and Permitting

4.4 All permits/licenses obtained for the Project are summarized in **Table 4.1**.

Down: 4 / Licoman No.	Valid PeriodFromTo		Dataila	S4a4ma
Permit / License No.			- Details	Status
Environmental Permi	t (EP)		·	
Tai Po Sewage Tree 100,000 m³/day to (a) additional secon process units(1) bioreactors and (b) reconstruction clarified; (c) provision of ult facilities; (d) additional slud facilities; and (e) ancillary works		(c) provision of ultraviolet disinfection facilities;(d) additional sludge treatment	Valid	
Registration of Chem	ical Waste Pr			
5517-727-T3270-01		N/A	Major chemical waste types: Spent lubricating oil, spend hydraulic oil, spend cooling oil, surplus paint, spent alkaline electrolyte, spent battery and battery parts containing heavy metals, scrap battery cell containing heavy metals, Nickel and its compounds, spent flammable liquid, spent copper etchant (Ferric chloride), Sodium hypochlorite, polymer, electric and torch bulbs and tubes, alkaline cleaner (spent alkaline solution)	Valid

Table 4.1Summary of Environmental Licensing and Permit Status

Status of Waste Management

4.5 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 K**. No chemical waste was generated in the reporting month.

Implementation Status of Environmental Mitigation Measures

- 4.6 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 J**.
- 4.7 During site inspections in the reporting month, non-conformance was identified. In addition, there was no major environmental deficiency being identified on the site audit session of the reporting month. The observations and recommendations made during the audit sessions are summarized in **Table 4.2**.

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	29 Nov 2012 Rainwater accumulated near JEC observed improved/rectifi		observed improved/rectified by the Contractor during the audit session
Air Quality	N/A	N/A	N/A
Noise	N/A	N/A	N/A
Waste/ Chemical Management	29 Nov 2012	Reminder: The general refuse and litter at the receptor near JEC site office should be removed.	The identified observation was observed improved/rectified by the Contractor during the audit session on 6 Dec 2012.

Table 4.2Observations and Recommendations of Site Audit

Summary of Exceedances

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

Implementation Status of Event Action Plans

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

Summary of Complaint and Prosecution

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

5 FUTURE KEY ISSUES

- 5.1 Key issues to be considered in the coming month include:
 - C&D wastes generated from installation of E&M equipments; and
 - Accumulation of C&D waste and general waste on site.

Monitoring Schedule for the Next Month

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

Construction Program for the Next Month

- 5.3 A tentative construction programme is provided in **Appendix M**. The major construction activities in the coming month will include:
 - Process commissioning of Final Clarifier No. 12B (with sewage);
 - Installation of E&M equipment in Aeration Tank No. 5 & 6;
 - Installation of mechanical screen and shaftless conveyor at Stage IV Screening House;
 - Fabrication of bio-gas holder on site;
 - T&C of new sludge dewatering system and sludge feed pump in Sludge Dewatering House Extension;
 - Installation of new centrifuge and associated pipework & electrical work at SAS Thickening House;
 - T&C/ of Biogas Burner and associated pipework at Stage IV;
 - Dismantling the remaining existing diffusers and associated pipeworks and installation of new E&M equipment at SBR;
 - Delivery of new screw pumps (for Stage IV Inlet Works) to site;
 - T&C of FS and BS equipment at Chemical House;
 - Installation and T&C of lightning protection pole L4 at Chemical House;
 - Checking the electricity meter (in HV side) and energization of switchboard (by CLP) at CBC G/F;
 - Cable laying for E&M equipment at SAS Thickening House;
 - Setup & Energization of Power Distribution Board for the Replacement of Existing SWB at IW 1F & GF;
 - SAT of MCC2A and Load Diversion of Existing E&M Equipment from MCC1 to MCC2A;
 - Modification of SCADA system at SAS thickening house;
 - PLC interfacing work between existing PLC system C and new PLC system K; and
 - PLC works for new filter press at Sludge Dewatering House Extension.

6 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 6.1 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.
- 6.2 No exceedance of monitoring results was recorded in the reporting month.
- 6.3 There was no environmental complaint, prosecution or notification of summons received.

Recommendations

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

Water Impact

- Avoid accumulation of stagnant water on site.
- All the runoff and wastewater generated from the works areas should be treated properly by de-silting facilities before discharging.

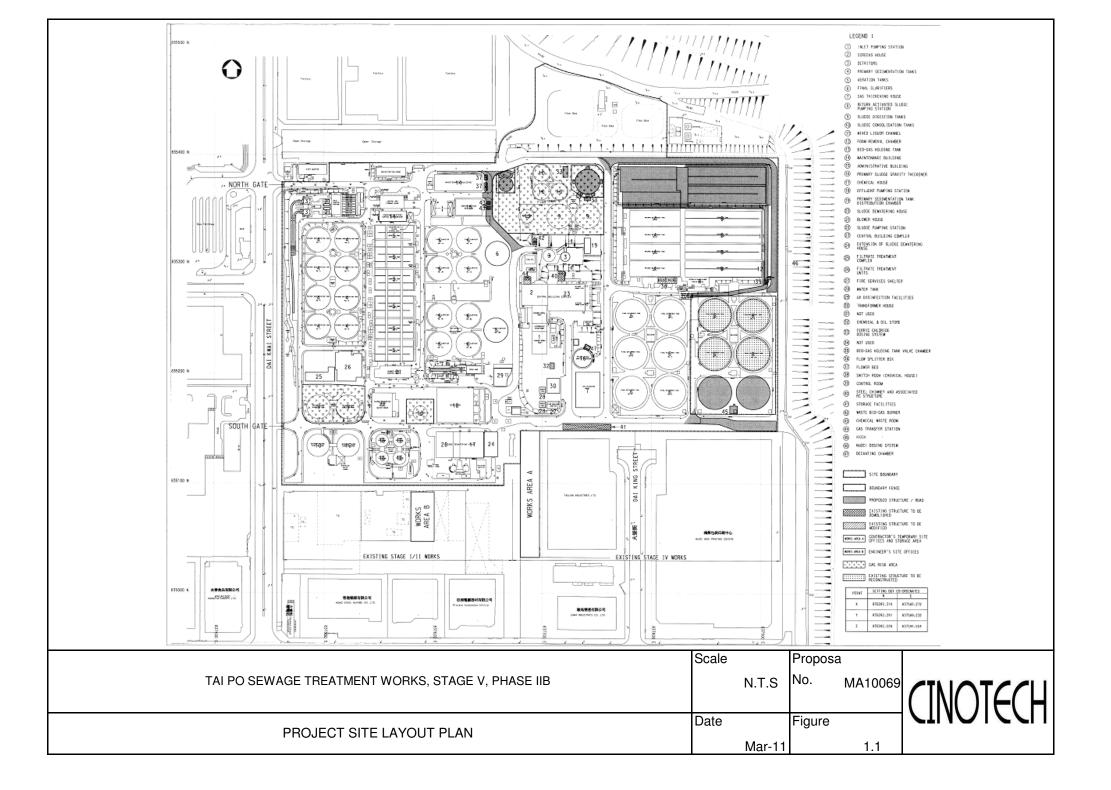
Dust Impact

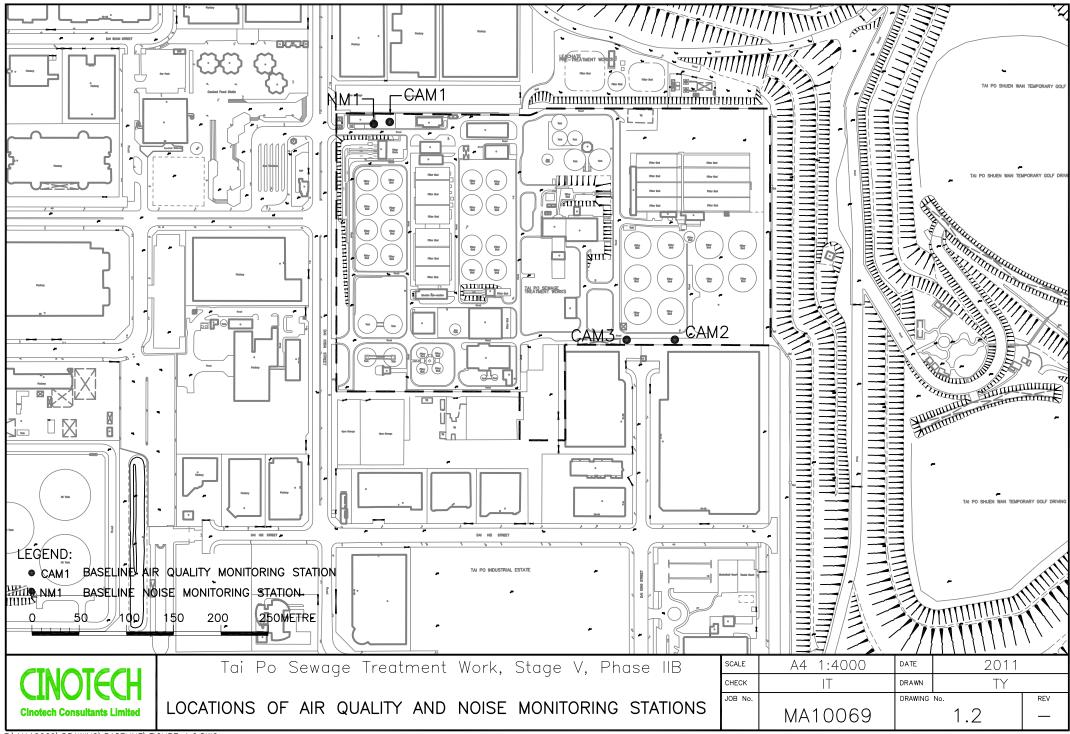
- Remove fugitive dusty material on the haul road periodically.
- Spray with water on dry dust haul road.

Waste / Chemical Management

- Avoid and check for any accumulation of waste materials on site and dispose waste materials at designated areas.
- 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.

FIGURES





F:\MA10069\DRAWING\BASELINE\FIGURE 1.2.DWG

APPENDIX A ACTION AND LIMIT LEVELS

APPENDIX A – Action and Limit Levels

1-Hour TSP

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	complaint is received	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.

APPENDIX B COPIES OF CALIBRATION CERTIFCATES

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. MA0010/37/0047

Station	CAM1 - Government Staff Quarter			Operator: WK		<u> </u>	
Date:	5-Nov-12		Next Due Date:		4-Jan-13		
Equipment No.:	: <u>A-01-37</u>			Serial No.	. 1704		
-	· · ·	· · ·	Ambient	Condition	····		
Temperat	ure, Ta (K)	298.7	Pressure, P	a (mmHg)	Ĭ	762.6	
	· · · · · ·	Orifi	ce Transfer St	andard Inform	nation	1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 -	
	ent No.:	A-04-04	Slope, mc	0.0574	Intercep		-0.0478
	ration Date:	3-Oct-12			bc = [ΔH x (Pa/76		
Next Calib	ration Date:	2-Oct-13	.	Qstd = { $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc			
							· · ·
	nas te to te			f TSP Sampler		*	
Calibration		Orfic	e	1		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)) x (298/Ta)] ^{1/2} Y- axis
1	11.7	3.4	2	60.46	7.6		2.76
2	9.5	3.0	8	54.56	6.2		2.49
3	7.4	2.7	2	48.25	4.8		2.19
4	4.8	2.1	2.19		3.0		1.73
5	3.0	1.7	3	31.02	2.0		1.41
By Linear Regi Slope , mw =	ression of Y on X 0.0463			Intercept, bw :	-0.042	1	
Correlation c		0.999					
		0, check and recalib		-			
			Set Point (Calculation			
From the TSP Fi	ield Calibration C	urve, take Qstd = 4.	3 CFM				
From the Regres	ssion Equation, the	e "Y" value accordi	ng to				
		_			1/3		
		mw x Qst	$d + bw = [\Delta W]$	x (Pa/760) x (2	98/Ta)]***		
Therefore, Se	et Point: W = (my	$w \ge 0$ x Qstd + bw $)^2 \ge 0$	760 / Pa) x (Ta / 298) =	3.79		
	((,,,	(
							L
Remarks:							
			$\sum t$				
Conducted by:	1.1.1.1	0	\ <i>V</i>				
Checked by:		Signature:	Kwa	n		Date:	SILIV

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA0010/A40/0047

Station	CAM2 - Hung	Hing Printing Cent	e	_ Operator.	WK		
Date:	5-Nov-12		Next Due Date:			4-Jan-13	
Equipment No.:	A-01-40			Serial No.		10239	
·							
				Condition	· ·		······································
Temperatu	re, Ta (K)	298.7	Pressure, Pa	a (mmHg)		762.6	······································
j tera		~ •	• • • • •			·. ·. ·	
Equipme	ent No ·	A-04-04	<u>fice Transfer Sta</u> Slope, mc	0.0574	T	4 6 -	0.0470
Last Calibra		3-Oct-12	Slope, Inc		Lintercep bc = [ΔH x (Pa/76		-0.0478
Next Calibra		2-Oct-13			х (Pa/760) x (298		
Treat Culton	ation Date.			Qata – ([AII	x (1 // / 00) x (290		
	· · ·		Calibration of	TSP Samnler	19.5.3		
Calibration		Orfi			1	HVS	
Calibration Point	ΔH (orifice), in. of water	[ΔH x (Pa/760)		Qstd (CFM) X - axis	ΔW (HVS), in. of oil	[ΔW x (Pa/7	60) x (298/Ta)] ^{1/2} Y axis
1	11.8	3.4	4	60.71	8.2		2.87
2	9.7	3.1	2	55.12	6.7		2.59
3	7.5	2.7	'4	48.57	5.0		2.24
4	5,3	2.3	0	40.96	3.3		1.82
5	3.3	1.8	2	32.50	2.1		1.45
Slope , mw = Correlation co *If Correlation Co	oefficient* ==	0.999 0, check and recali	1	Intercept, bw	-0.231	9	
			Set Point C	alculation			
		urve, take Qstd = 4 e "Y" value accordi					
	,,,,						
		mw x Qs	$d + bw = [\Delta W]$	x (Pa/760) x (29	98/Ta)] ^{1/2}		
Therefore, Set	t Point; W = (mv	w x Qstd + bw $)^2$ x	(760 / Pa) x (T	'a / 298) =	3.83		
					· · · · · · · · · · · · · · · · · · ·		a managada
Remarks: _							
Remarks:			1				

High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. <u>MA0010/35/0047</u>

Station	CAM3 - Talcon	13 - Talcon Industrial Ltd		Operator: WK				
Date:	5-Nov-12		Next Due Date:					
Equipment No.:	A-01-35			Serial No.			•	
	I		Ambient	Condition			· · · ·	
Temperati	re, Ta (K)	298.7	Pressure, Pa	a (mmHg)		762.6		
						The track		
·			ifice Transfer St	T	lation			
Equipm		A-04-04	Slope, mc	0.0574	Intercep		-0.0478	
Last Calibration Date: 3-Oct-12 mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$ Next Calibration Date: 2-Oct-13 Qstd = $\{[\Delta H x (Pa/760) x (298/Ta)]^{1/2} - bc\} / mc$								
Next Calibration Date:2-Oct-13Qstd = { $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$ -bc} / mc								
		• •	Calibration of	TSP Samplar				
		Orf		101 Sampler		HVS		
Calibration Point	ΔH (orifice),			Qstd (CFM)	ΔW		60) x (298/Ta)] ^{1/2} Y-	
1 Ont	in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	X - axis	(HVS), in. of oil		axis	
1	11.9	3.	.45	60.96	7.9		2.81	
2	9.7	3.	12	55.12	6.5		2.55	
3	8.2	2.	87	50.75	5.3		2.30	
4	5.2	2.28		40.58	3.3		1.82	
5	3.3	1.	82	32.50	1.9		1.38	
Slope , mw = Correlation c		0.99	96	Intercept, bw :	-0.244	5		
*II Correlation C	Coefficient < 0.990), check and recal	ibrate.					
			Set Point C	alculation				
From the TSP Fi	eld Calibration Ci	urve, take Ostd =						
	sion Equation, the	•						
-	,		-					
		mw x Qs	std + bw = $ \Delta W $	x (Pa/760) x (2	98/Ta)] ^{1/2}			
Therefore, Se	et Point; W = (mv	$v \ge 0$ (x Qstd + bw) ²	x (760 / Pa) x (T	°a / 298) =	3.69	· · · · · · · ·		
D								
Remarks:								
Conducted by:	1 70	Signature:] kw	mi		Date:	\$/11/12	
Checked by:		Signature:	T			Date:	5 November Dela	



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.0993Model No.TE-5025ADate3 October 2012

Manufacturer Temperature,Ta (K) Pressure, Pa (mmHg)

TISCH 298 759.2

Plate	Diff.Vol (m ³)	Diff.Time (min)	Diff.Hg (mm)	Diff.H ₂ O (in.)
1	1.00	1.3820	3.2	2.00
2	1.00	0.9800	6.2	4.00
3	1.00	0.8770	7.8	5.00
4	1.00	0.8380	8.7	5.50
5	1.00	0.6930	12.7	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9947	0.7197	1.4134
0.9907	1.0109	1.9989
0.9886	1.1273	2.2348
0.9874	1.1783	2.3439
0.9822	1.4173	2.8268

Y axis= SQRT[H₂O(Pa/760)(298/Ta)] Qstd Slope (m) = <u>2.02751</u>

Intercept (b) = -0.04785Coefficient (r) = 0.99999

Va	(X axis) Qa	(Y axis)
0.9958	0.7205	0.8861
0.9918	1.0121	1.2531
0.9897	1.1285	1.4010
0.9885	1.1796	1.4694
0.9833	1.4189	1.7721

Y axis= SQRT[H₂O(Ta/Pa)]

Qa Slope ((m)	= <u>1.2695</u>	<u>;9</u>
Intercept (b)	= <u>-0.030</u>	<u>00</u>

Coefficient (r) = 0.99999

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: $Qstd=I/m{[SQRT(H_2O(Pa/760)(298/Ta))]-b}$ $Qa=I/m{[SQRT H_2O(Ta/Pa)]-b}$

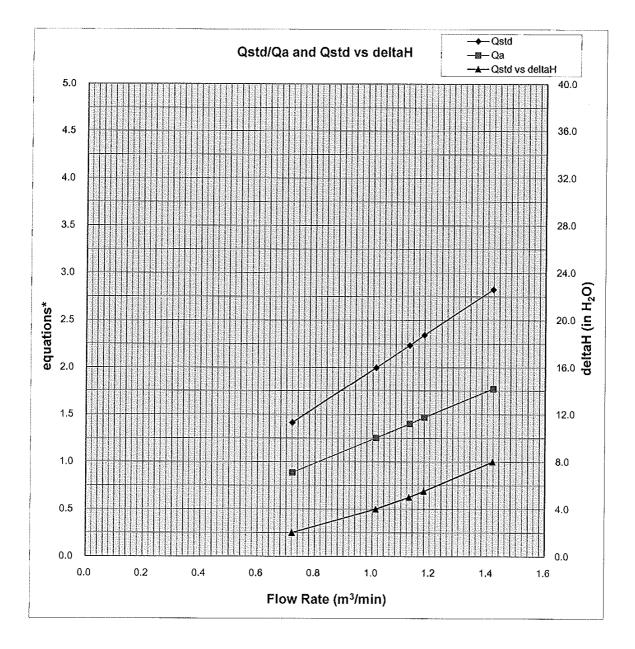
> PREPARED AND CHECKED BY: For and On Behalf of **WELLAB Ltd.**

PATRICK TSE Laboratory Manager

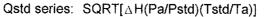
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TEST REPORT



Y-axis equations:



Qa series: SQRT[Δ H(Ta/Pa)]

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2013-01-20

1 of 1

TEST REPORT

APPLICANT:Cinotech Consultants Limited
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong KongTest Report No.:C/N/120120/1
2012-01-21Date of Issue:2012-01-21Date Received:2012-01-20Date Completed:2012-01-20Date Completed:2012-01-21

ATTN:

Mr. Henry Leung

Certificate of Calibration

Item for calibration:

Description : 'SVANTEK' Integrating Sound Level Meter Manufacturer : SVANTEK Model No. : SVAN 955 Serial No. : 14303 Microphone No. : 17204 Equipment No. : N-08-05

Next Due Date:

Page:

Test conditions:

Room Temperatre Relative Humidity

: 21 degree Celsius : 52%

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.

Think C,

PATRICK TSE Laboratory Manager



1 of 1

TEST REPORT

APPLICANT:	Cinotech Consultants Limited	Test Report No .:	C/N/120901/1
	Room 1710, Technology Park,	Date of Issue:	2012-09-02
	18 On Lai Street,	Date Received:	2012-09-01
	Shatin, NT, Hong Kong	Date Tested:	2012-09-01
		Date Completed:	2012-09-02
		Next Due Date:	2013-09-01

ATTN: Mr. W.K. Tang

Certificate of Calibration

Item for calibration:

Description Manufacturer Model No. Serial No. Microphone No. Equipment No. : 'SVANTEK' Integrating Sound Level Meter : SVANTEK : SVAN 957 : 21455 : 43730 : N-08-07

Test conditions:

Room Temperatre Relative Humidity : 22 degree Celsius : 67%

Page:

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

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1 of 1

TEST REPORT

APPLICANT:	Cinotech Consultants Limited	Test Report No .:	C/N/121005/1
	Room 1710, Technology Park,	Date of Issue:	2012-10-07
	18 On Lai Street,	Date Received:	2012-10-05
	Shatin, NT, Hong Kong	Date Tested:	2012-10-05
		Date Completed:	2012-10-07
		Next Due Date:	2013-10-06

ATTN: Mr. W.K. Tang

Item for calibration:

Description Manufacturer Model No. Serial No. Equipment No. : Acoustical Calibrator : SVANTEK : SV30A : 24803 : N-09-03

Page:

Test conditions:

Room Temperatre Relative Humidity : 23 degree Celsius : 64%

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

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

PATRICK TSE Laboratory Manager

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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

TEST REPORT APPLICANT: **Cinotech Consultants Limited** Test Report No .: C/N/121005/2 Room 1710, Technology Park, Date of Issue: 2012-10-07 18 On Lai Street, Date Received: 2012-10-05 Shatin, NT, Hong Kong Date Tested: 2012-10-05 Date Completed: 2012-10-07 Next Due Date: 2013-10-06 ATTN: Mr. W.K. Tang Page: 1 of 1 Item for calibration: Description : Acoustical Calibrator Manufacturer : SVANTEK Model No. : SV30A Serial No. : 24791 Equipment No. : N-09-04 Test conditions: Room Temperatre : 23 degree Celsius **Relative Humidity** : 64%

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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PATRICK TSE Laboratory Manager

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APPENDIX C ENVIRONMENTAL MONITORING SCHEDULE

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

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Dec
2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	8-Dec
	11 500		11 500		11 500	
	1 hr TSP Noise		1 hr TSP		1 hr TSP	
	Noise		24 hr TSP			
9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	15-Dec
	1.1		1 1		1 1	
	1 hr TSP Noise		1 hr TSP		1 hr TSP	
	Noise	24 hr TSP				
16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec
	1.1		1 1	1.1		
	1 hr TSP Noise		1 hr TSP	1 hr TSP		
	24 hr TSP					24 hr TSP
23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec
	1 he TSD			1 hr TSP	1 hr TSP	
	1 hr TSP Noise			1 III 15P	1 III 13P	
	10150				24 hr TSP	
30-Dec	31-Dec					
	1 hr TSP					
	Noise					

Contract No. DE/2009/09 - Construction of Tai Po Sewage Treatment Works - Stage 5 Phase 2B Tentative Impact Air Quality and Noise Monitoring Schedule for January 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Jan	2-Jan	3-Jan	4-Jan	5-Jan
			1 hr TSP		1 hr TSP	
				24 hr TSP		
6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan
	1 hr TSP Noise		1 hr TSP		1 hr TSP	
			24 hr TSP			
13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	19-Jan
	1 hr TSP Noise		1 hr TSP		1 hr TSP	
		24 hr TSP				
20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan
	1 hr TSP Noise		1 hr TSP		1 hr TSP	
	24 hr TSP					24 hr TSP
27-Jan	28-Jan	29-Jan	30-Jan	31-Jan		
	1 hr TSP Noise		1 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)
3-Dec-12	13:00	Cloudy	288.1	765.3	3.1062	3.1120	0.0058	18477.1	18478.1	1.0	1.24	1.24	1.24	74.5	78
5-Dec-12	09:00	Cloudy	288.1	767.2	3.1208	3.1267	0.0059	18478.1	18479.1	1.0	1.24	1.24	1.24	74.6	79
7-Dec-12	09:00	Sunny	289.9	767.5	3.1967	3.2051	0.0084	18503.1	18504.1	1.0	1.24	1.24	1.24	74.4	113
10-Dec-12	09:00	Cloudy	290.9	766.3	3.1773	3.1865	0.0092	18504.1	18505.1	1.0	1.24	1.24	1.24	74.2	124
12-Dec-12	15:00	Cloudy	291.5	766.7	3.1089	3.1129	0.0040	18529.1	18530.1	1.0	1.24	1.24	1.24	74.1	54
14-Dec-12	09:00	Sunny	293.7	767.6	3.0472	3.0587	0.0115	18530.1	18531.1	1.0	1.23	1.23	1.23	73.9	156
17-Dec-12	09:00	Sunny	293.9	765.7	3.1217	3.1309	0.0092	18531.1	18532.1	1.0	1.23	1.23	1.23	73.8	125
19-Dec-12	09:00	Sunny	286.2	769.3	3.1372	3.1420	0.0048	18556.1	18557.1	1.0	1.25	1.25	1.25	74.9	64
20-Dec-12	09:00	Cloudy	290.2	767.1	3.2026	3.2111	0.0085	18557.1	18558.1	1.0	1.24	1.24	1.24	74.3	114
24-Dec-12	13:00	Sunny	283.8	772.8	3.1232	3.1294	0.0062	18582.1	18583.1	1.0	1.26	1.26	1.26	75.4	82
27-Dec-12	09:00	Cloudy	291.3	765.7	3.0934	3.1048	0.0114	18583.1	18584.1	1.0	1.24	1.24	1.24	74.1	154
28-Dec-12	09:00	Sunny	291.6	766.7	3.0684	3.0715	0.0031	18584.1	18585.1	1.0	1.24	1.24	1.24	74.1	42
31-Dec-12	16:00	Sunny	285.1	768.0	3.1750	3.1807	0.0057	18609.1	18610.1	1.0	1.25	1.25	1.25	75.0	76
														Min	42

Max 156 Average 97

Station CAM2

Heng Hing Printing Centre

Date Time Condition Temp. (K) Pressure (Pa) Initial Final weight (g) Initial Final Time(hrs.) Initial Final (m ³ /min) (m ³ /min) <th>Dete</th> <th>Sampling</th> <th>Weather</th> <th>Air</th> <th>Atmospheric</th> <th>Filter W</th> <th>eight (g)</th> <th>Particulate</th> <th>Elapse</th> <th>e Time</th> <th>Sampling</th> <th>Flow Rate</th> <th>e (m³/min.)</th> <th>Av. flow</th> <th>Total vol.</th> <th>Conc.</th>	Dete	Sampling	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
5-Dec-1209:00Cloudy288.1767.23.10993.11700.007127652.227653.21.01.231.231.2374.0967-Dec-1209:00Sunny289.9767.53.05983.06730.007527677.227678.21.01.231.231.2373.810210-Dec-1209:00Cloudy290.9766.33.04293.05180.008927678.227679.21.01.231.231.2373.712112-Dec-1215:00Cloudy291.5766.73.06583.07560.009827703.227704.21.01.231.231.2373.613314-Dec-1209:00Sunny293.7767.63.03793.05350.015627704.327705.31.01.221.221.2273.421217-Dec-1209:00Sunny286.2769.33.00443.05540.010627705.327706.31.01.241.241.2474.48520-Dec-1209:00Sunny286.2769.33.00543.01170.006327730.327731.31.01.231.231.2373.610824-Dec-1219:00Cloudy290.2767.13.02553.03350.008027751.32775.31.01.241.241.2474.48520-Dec-1209:00Cloudy290.2767.73.12553.03350.008027751.32775.3 </td <td>Dale</td> <td>Time</td> <td>Condition</td> <td>Temp. (K)</td> <td>Pressure (Pa)</td> <td>Initial</td> <td>Final</td> <td>weight (g)</td> <td>Initial</td> <td>Final</td> <td>Time(hrs.)</td> <td>Initial</td> <td>Final</td> <td>(m³/min)</td> <td>(m³)</td> <td>(µg/m³)</td>	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)
7-Dec-1209:00Sunny289.9767.53.05983.06730.007527677.227678.21.01.231.231.2373.810210-Dec-1209:00Cloudy290.9766.33.04293.05180.008927678.227679.21.01.231.231.2373.712112-Dec-1215:00Cloudy291.5766.73.06583.07560.009827703.227704.21.01.231.231.2373.613314-Dec-1209:00Sunny293.7767.63.03793.05350.015627704.327705.31.01.221.221.2273.421217-Dec-1209:00Sunny293.9765.73.04483.05540.010627705.327706.31.01.241.241.2474.48520-Dec-1209:00Sunny286.2769.33.00543.01170.006327731.31.01.231.2373.810824-Dec-1209:00Cloudy290.2767.13.02553.03350.00802775.32775.31.01.231.2373.810827-Dec-1209:00Cloudy291.3765.73.12153.13760.016127757.32775.31.01.231.2373.67128-Dec-1209:00Cloudy291.3765.73.12153.13760.016127757.32775.31.01.231.2373.6<	3-Dec-12	13:00	Cloudy	288.1	765.3	3.0908	3.0974	0.0066	27651.2	27652.2	1.0	1.23	1.23	1.23	74.0	89
10-Dec-1209:00Cloudy290.9766.33.04293.05180.008927678.227679.21.01.231.231.2373.712112-Dec-1215:00Cloudy291.5766.73.06583.07560.009827703.227704.21.01.231.231.2373.613314-Dec-1209:00Sunny293.7767.63.03793.05350.015627704.327705.31.01.221.221.2273.421217-Dec-1209:00Sunny293.9765.73.04483.05540.010627705.327706.31.01.221.221.2273.421219-Dec-1209:00Sunny286.2769.33.00543.01170.006327731.31.01.241.241.2474.48520-Dec-1209:00Cloudy290.2767.13.02553.03350.008027731.327732.31.01.231.2373.810824-Dec-1213:00Sunny283.8772.83.14593.15510.009227756.327757.31.01.231.2373.621928-Dec-1209:00Cloudy291.3765.73.12153.13760.016127757.327758.31.01.231.2373.621928-Dec-1209:00Sunny283.6766.73.12543.13060.005227758.327759.31.01.231.231.23<	5-Dec-12	09:00	Cloudy	288.1	767.2	3.1099	3.1170	0.0071	27652.2	27653.2	1.0	1.23	1.23	1.23	74.0	96
12-Dec-1215:00Cloudy291.5766.73.06583.07560.009827703.227704.21.01.231.231.2373.613314-Dec-1209:00Sunny293.7767.63.03793.05350.015627704.327705.31.01.221.221.2273.421217-Dec-1209:00Sunny293.9765.73.04483.05540.010627705.327706.31.01.221.221.2273.314519-Dec-1209:00Sunny286.2769.33.00543.01170.006327730.327731.31.01.241.241.2474.48520-Dec-1209:00Cloudy290.2767.13.02553.03350.008027731.327732.31.01.231.231.2373.810824-Dec-1213:00Sunny283.8772.83.14593.15510.009227757.32775.31.01.251.251.2574.812327-Dec-1209:00Cloudy291.3765.73.12153.13760.016127757.32775.31.01.231.231.2373.621928-Dec-1209:00Sunny291.6766.73.12543.13060.00522775.32775.31.01.231.231.2373.621928-Dec-1209:00Sunny283.6768.03.08953.09700.007527783.32775.3 <td>7-Dec-12</td> <td>09:00</td> <td>Sunny</td> <td>289.9</td> <td>767.5</td> <td>3.0598</td> <td>3.0673</td> <td>0.0075</td> <td>27677.2</td> <td>27678.2</td> <td>1.0</td> <td>1.23</td> <td>1.23</td> <td>1.23</td> <td>73.8</td> <td>102</td>	7-Dec-12	09:00	Sunny	289.9	767.5	3.0598	3.0673	0.0075	27677.2	27678.2	1.0	1.23	1.23	1.23	73.8	102
14-Dec-1209:00Sunny293.7767.63.03793.05350.015627704.327705.31.01.221.221.2273.421217-Dec-1209:00Sunny293.9765.73.04483.05540.010627705.327706.31.01.221.221.2273.314519-Dec-1209:00Sunny286.2769.33.00543.01170.006327730.327731.31.01.241.241.2474.48520-Dec-1209:00Cloudy290.2767.13.02553.03350.008027731.327732.31.01.231.231.2373.810824-Dec-1213:00Sunny283.8772.83.14593.15510.009227756.327757.31.01.251.251.2574.812327-Dec-1209:00Cloudy291.3765.73.12153.13760.016127757.327758.31.01.231.231.2373.621928-Dec-1209:00Sunny291.6766.73.12543.13060.005227758.327759.31.01.231.231.2373.67131-Dec-1216:00Sunny283.6768.03.08953.09700.007527783.327784.31.01.241.241.2474.6101	10-Dec-12	09:00	Cloudy	290.9	766.3	3.0429	3.0518	0.0089	27678.2	27679.2	1.0	1.23	1.23	1.23	73.7	121
17-Dec-1209:00Sunny293.9765.73.04483.05540.010627705.327706.31.01.221.221.2273.314519-Dec-1209:00Sunny286.2769.33.00543.01170.006327730.327731.31.01.241.241.2474.48520-Dec-1209:00Cloudy290.2767.13.02553.03350.008027731.327732.31.01.231.231.2373.810824-Dec-1213:00Sunny283.8772.83.14593.15510.009227756.327757.31.01.251.2574.812327-Dec-1209:00Cloudy291.3765.73.12153.13760.016127757.327758.31.01.231.231.2373.621928-Dec-1209:00Sunny291.6766.73.12543.13060.005227758.327759.31.01.231.231.2373.67131-Dec-1216:00Sunny283.6768.03.08953.09700.007527783.327784.31.01.241.241.2474.6101	12-Dec-12	15:00	Cloudy	291.5	766.7	3.0658	3.0756	0.0098	27703.2	27704.2	1.0	1.23	1.23	1.23	73.6	133
19-Dec-1209:00Sunny286.2769.33.00543.01170.006327730.327731.31.01.241.241.2474.48520-Dec-1209:00Cloudy290.2767.13.02553.03350.008027731.327732.31.01.231.231.2373.810824-Dec-1213:00Sunny283.8772.83.14593.15510.009227756.327757.31.01.251.251.2574.812327-Dec-1209:00Cloudy291.3765.73.12153.13760.016127757.327758.31.01.231.231.2373.621928-Dec-1209:00Sunny291.6766.73.12543.13060.005227758.327759.31.01.231.231.2373.621931-Dec-1216:00Sunny283.6768.03.08953.09700.007527783.327784.31.01.241.251.2474.6101	14-Dec-12	09:00	Sunny	293.7	767.6	3.0379	3.0535	0.0156	27704.3	27705.3	1.0	1.22	1.22	1.22	73.4	212
20-Dec-1209:00Cloudy290.2767.13.02553.03350.008027731.327732.31.01.231.231.2373.810824-Dec-1213:00Sunny283.8772.83.14593.15510.009227756.327757.31.01.251.251.2574.812327-Dec-1209:00Cloudy291.3765.73.12153.13760.016127757.327758.31.01.231.231.2373.621928-Dec-1209:00Sunny291.6766.73.12543.13060.005227758.327759.31.01.231.231.2373.621910-0-1216:00Sunny283.6768.03.08953.09700.007527783.327784.31.01.241.251.2474.6101	17-Dec-12	09:00	Sunny	293.9	765.7	3.0448	3.0554	0.0106	27705.3	27706.3	1.0	1.22	1.22	1.22	73.3	145
24-Dec-1213:00Sunny283.8772.83.14593.15510.009227756.327757.31.01.251.251.2574.812327-Dec-1209:00Cloudy291.3765.73.12153.13760.016127757.327758.31.01.231.231.2373.621928-Dec-1209:00Sunny291.6766.73.12543.13060.005227758.327759.31.01.231.231.2373.67131-Dec-1216:00Sunny283.6768.03.08953.09700.007527783.327784.31.01.241.251.2474.6101	19-Dec-12	09:00	Sunny	286.2	769.3	3.0054	3.0117	0.0063	27730.3	27731.3	1.0	1.24	1.24	1.24	74.4	85
27-Dec-1209:00Cloudy291.3765.73.12153.13760.016127757.327758.31.01.231.231.2373.621928-Dec-1209:00Sunny291.6766.73.12543.13060.005227758.327759.31.01.231.231.2373.621931-Dec-1216:00Sunny283.6768.03.08953.09700.007527783.327784.31.01.241.251.2474.6101	20-Dec-12	09:00	Cloudy	290.2	767.1	3.0255	3.0335	0.0080	27731.3	27732.3	1.0	1.23	1.23	1.23	73.8	108
28-Dec-12 09:00 Sunny 291.6 766.7 3.1254 3.1306 0.0052 27758.3 27759.3 1.0 1.23 1.23 1.23 73.6 71 31-Dec-12 16:00 Sunny 283.6 768.0 3.0895 3.0970 0.0075 27783.3 27784.3 1.0 1.24 1.25 1.24 74.6 101	24-Dec-12	13:00	Sunny	283.8	772.8	3.1459	3.1551	0.0092	27756.3	27757.3	1.0	1.25	1.25	1.25	74.8	123
31-Dec-12 16:00 Sunny 283.6 768.0 3.0895 3.0970 0.0075 27783.3 27784.3 1.0 1.24 1.25 1.24 74.6 101	27-Dec-12	09:00	Cloudy	291.3	765.7	3.1215	3.1376	0.0161	27757.3	27758.3	1.0	1.23	1.23	1.23	73.6	219
	28-Dec-12	09:00	Sunny	291.6	766.7	3.1254	3.1306	0.0052	27758.3	27759.3	1.0	1.23	1.23	1.23	73.6	71
Min 71	31-Dec-12	16:00	Sunny	283.6	768.0	3.0895	3.0970	0.0075	27783.3	27784.3	1.0	1.24	1.25	1.24	74.6	101
														-	Min	71

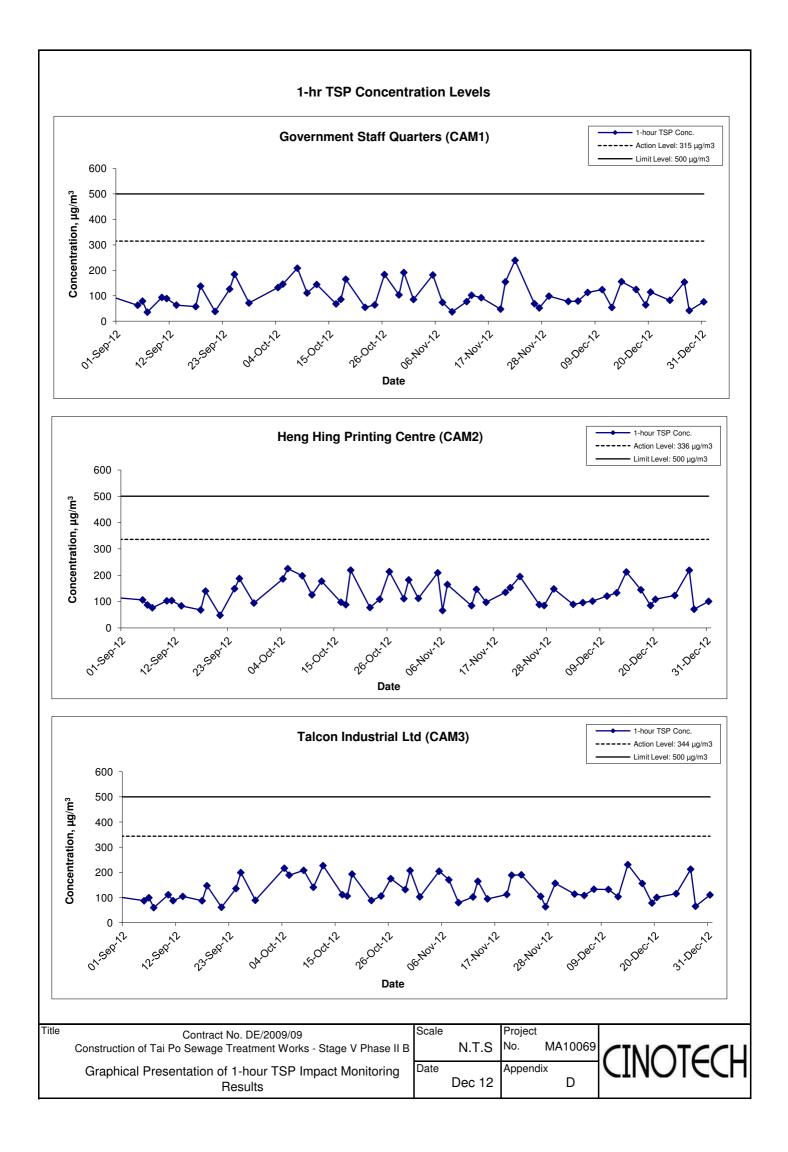
Appendix D - 1-hour TSP Monitoring Results

Station CAM3

Talcon Industrial Ltd

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)
3-Dec-12	13:00	Cloudy	288.1	765.3	3.0264	3.0348	0.0084	20892.9	20893.9	1.0	1.23	1.23	1.23	73.7	114
5-Dec-12	09:00	Cloudy	288.1	767.2	3.0693	3.0773	0.0080	20893.9	20894.9	1.0	1.23	1.23	1.23	73.8	108
7-Dec-12	09:00	Sunny	289.9	767.5	3.1602	3.1700	0.0098	20918.9	20919.9	1.0	1.23	1.23	1.23	73.6	133
10-Dec-12	09:00	Cloudy	290.9	766.3	3.0800	3.0897	0.0097	20919.9	20920.9	1.0	1.22	1.22	1.22	73.4	132
12-Dec-12	15:00	Cloudy	291.5	766.7	3.0459	3.0535	0.0076	20944.9	20945.9	1.0	1.22	1.22	1.22	73.4	104
14-Dec-12	09:00	Sunny	293.7	767.6	3.0609	3.0778	0.0169	20945.9	20946.9	1.0	1.22	1.22	1.22	73.2	231
17-Dec-12	09:00	Sunny	293.9	765.7	3.1438	3.1552	0.0114	20946.9	20947.9	1.0	1.22	1.22	1.22	73.1	156
19-Dec-12	09:00	Sunny	286.2	769.3	3.0585	3.0643	0.0058	20971.9	20972.9	1.0	1.24	1.23	1.23	74.1	78
20-Dec-12	09:00	Cloudy	290.2	767.1	3.1554	3.1628	0.0074	20972.9	20973.9	1.0	1.23	1.23	1.23	73.5	101
24-Dec-12	13:00	Sunny	283.8	772.8	3.1636	3.1722	0.0086	20997.9	20998.9	1.0	1.24	1.24	1.24	74.5	115
27-Dec-12	09:00	Cloudy	291.3	765.7	3.0745	3.0901	0.0156	20998.9	20999.9	1.0	1.22	1.22	1.22	73.4	213
28-Dec-12	09:00	Sunny	291.6	766.7	3.1058	3.1106	0.0048	20999.9	21000.9	1.0	1.22	1.22	1.22	73.4	65
31-Dec-12	16:00	Sunny	285.1	768.0	3.0922	3.1004	0.0082	21024.9	21025.9	1.0	1.24	1.24	1.24	74.2	111
														Min	65

Min65Max231Average128



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	Elapse	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)
5-Dec-12	Cloudy	289.0	765.8	3.0903	3.2036	0.1133	18479.1	18503.1	24.0	1.24	1.24	1.24	1786.1	63
11-Dec-12	Cloudy	291.0	767.1	3.0712	3.2450	0.1738	18505.1	18529.1	24.0	1.24	1.24	1.24	1781.4	98
17-Dec-12	Sunny	294.3	764.1	3.0801	3.1630	0.0829	18532.1	18556.1	24.0	1.23	1.23	1.23	1768.2	47
22-Dec-12	Sunny	290.9	767.5	3.2158	3.3950	0.1792	18558.1	18582.1	24.0	1.24	1.24	1.24	1782.3	101
28-Dec-12	Cloudy	291.6	763.5	3.1138	3.1645	0.0507	18585.1	18609.1	24.0	1.23	1.23	1.23	1775.5	29
													Min	29
													Max	101
													Average	67

Station CAM2 Her

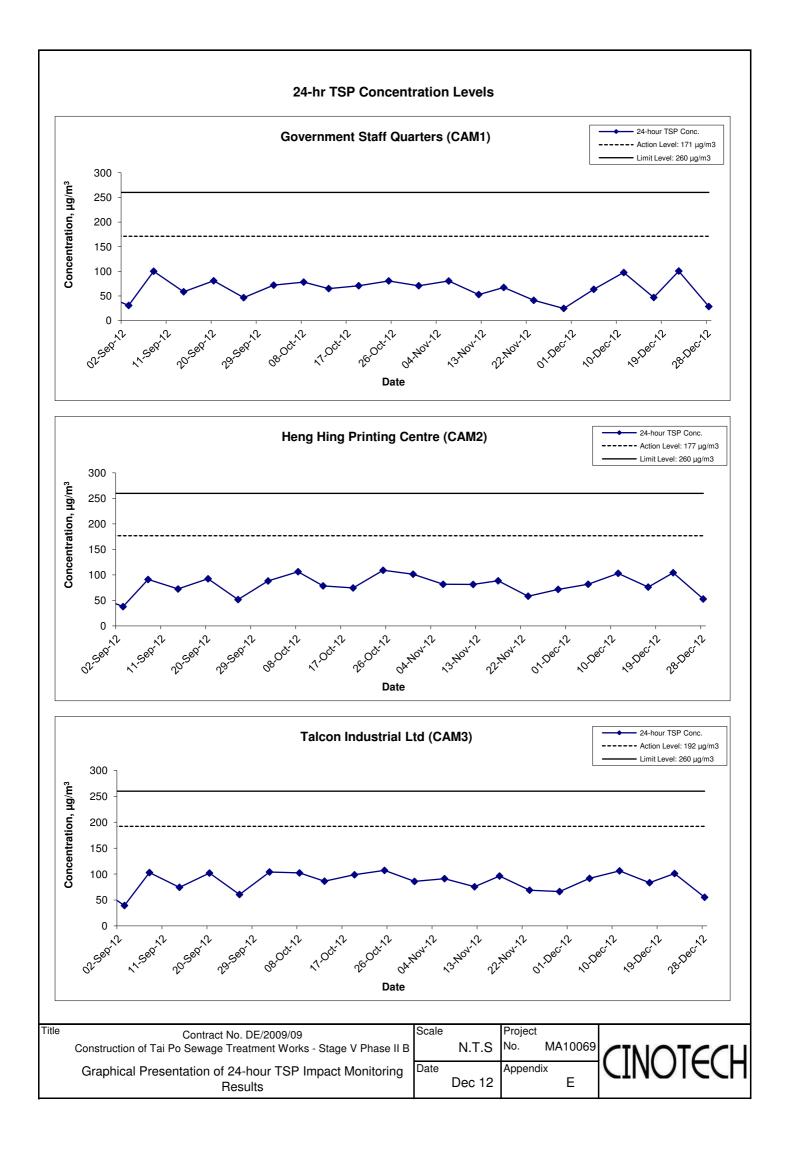
Heng Hing Printing Centre

Start Date	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elapse	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)
5-Dec-12	Cloudy	289.0	765.8	3.0073	3.1522	0.1449	27653.2	27677.2	24.0	1.23	1.23	1.23	1773.2	82
11-Dec-12	Cloudy	291.0	767.1	3.1136	3.2960	0.1824	27679.2	27703.2	24.0	1.23	1.23	1.23	1768.9	103
17-Dec-12	Sunny	294.3	764.1	3.0720	3.2058	0.1338	27706.3	27730.3	24.0	1.22	1.22	1.22	1756.9	76
22-Dec-12	Sunny	290.9	767.5	3.1561	3.3407	0.1846	27732.3	27756.3	24.0	1.23	1.23	1.23	1769.7	104
28-Dec-12	Cloudy	291.6	763.5	3.1278	3.2209	0.0931	27759.3	27783.3	24.0	1.22	1.22	1.22	1763.6	53
													Min	53
													Max	104
													Average	84

Station CAM3

Talcon Industrial Ltd

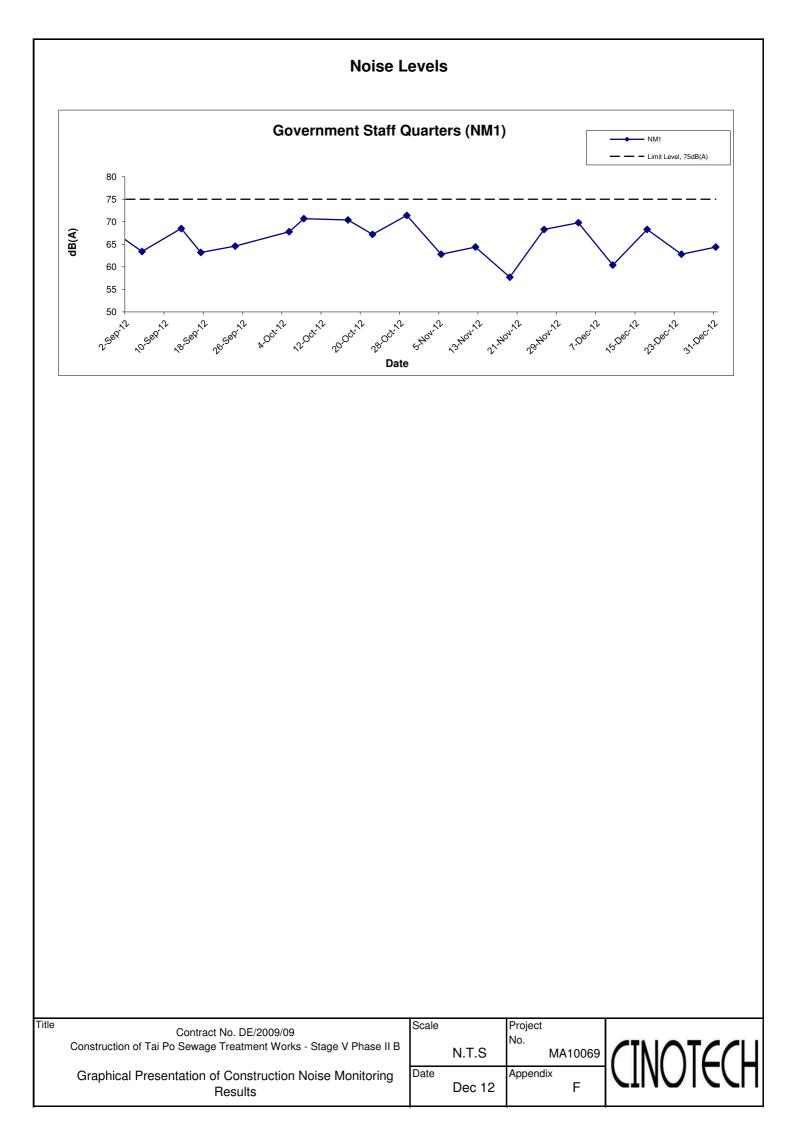
Start Date	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
Start Date	Condition	Temp. (K)	Pressure (Pa)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
5-Dec-12	Cloudy	289.0	765.8	3.0847	3.2467	0.1620	20894.9	20918.9	24.0	1.23	1.23	1.23	1767.0	92
11-Dec-12	Cloudy	291.0	767.1	3.0614	3.2486	0.1872	20920.9	20944.9	24.0	1.22	1.22	1.22	1762.7	106
17-Dec-12	Sunny	294.3	764.1	3.0695	3.2155	0.1460	20947.9	20971.9	24.0	1.22	1.22	1.22	1750.8	83
22-Dec-12	Sunny	290.9	767.5	3.0987	3.2770	0.1783	20973.9	20997.9	24.0	1.22	1.22	1.22	1763.5	101
28-Dec-12	Cloudy	291.6	763.5	3.0958	3.1929	0.0971	21000.9	21024.9	24.0	1.22	1.22	1.22	1757.4	55
													Min	55
													Max	106



APPENDIX F NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - Noise Monitoring Results

Location NM1	- Governme	ent Staff Quart	ters		
Dete	Time	W/a ath ar	dB	8 (A) (30-min)	
Date	Time	Weather	L _{eq}	L ₁₀	L ₉₀
3-Dec-12	16:00	Cloudy	69.8	72.1	67.4
10-Dec-12	10:10	Cloudy	60.4	63.0	57.8
17-Dec-12	13:00	Fine	68.3	71.6	62.5
24-Dec-12	13:00	Sunny	62.8	64.1	61.4
31-Dec-12	16:00	Fine	64.4	65.8	63.6
	-	Average	66.4	67.3	62.5
		Minimum	60.4	63.0	57.8
		Maximum	69.8	72.1	67.4



APPENDIX G SUMMARY OF EXCEEDANCE Jardine Engineering Corporation Ltd.

APPENIDX G – SUMMARY OF EXCEEDANCE

Reporting Month: December 2012

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

APPENDIX H SITE AUDIT SUMMARY

Inspection Information		
Checklist Reference Number	121206	
Date	6 December 2012 (Thursday)	
Time	14:30 - 15:00	

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

Ref. No. **Remarks/Observations**

 Part C - Water Quality
• No environmental deficiency was identified during the site inspection.
Part D - Air Quality
• No environmental deficiency was identified during the site inspection.
Part E – Noise
• No environmental deficiency was identified during the site inspection.
Part F - Waste / Chemical Management
• No environmental deficiency was identified during the site inspection.
Part G - Permit / Licenses
• No environmental deficiency was identified during the site inspection.
Part H - Remark
• No environmental deficiency was identified during the site inspection.
Others
 Follow-up on the previous audit session (Ref. No.121129), all identified environmental deficiencies were observed improved/rectified by the Contractor.

	Name	Signature	Date
Recorded by	Ken Cheng	Cin	6 December 2012
Checked by	Dr. Priscilla Choy	NX	6 December 2012

Inspection InformationChecklist Reference Number121214Date14 December 2012 (Friday)Time09:30 - 10:00

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

Ref. No. Remarks/Observations

Part C - Water Quality
 No environmental deficiency was identified during the site inspection.
Part D - Air Quality
• No environmental deficiency was identified during the site inspection.
Part E – Noise
 No environmental deficiency was identified during the site inspection.
• No environmental denciency was identified during the site inspection.
Part F - Waste / Chemical Management
 No environmental deficiency was identified during the site inspection.
Part G - Permit / Licenses
• No environmental deficiency was identified during the site inspection.
Part H - Remark
 No environmental deficiency was identified during the site inspection.
Others
• Follow-up on the previous audit session (Ref. No.121206), no major
environmental deficiency was observed during the site inspection.

	Name	Signature	Date
Recorded by	Ken Cheng	Cen	14 December 2012
Checked by	Dr. Priscilla Choy	'WI	14 December 2012

Inspection Information	
Checklist Reference Number	121220
Date	20 December 2012 (Thursday)
Time	09:15 - 10:00

Ref. No.	Non-Compliance	Related Item No.
and the second se	None identified	-

Ref. No. Remarks/Observations

Part C - Water Quality
• No environmental deficiency was identified during the site inspection.
Part D - Air Quality
• No environmental deficiency was identified during the site inspection.
Part E Noise
• No environmental deficiency was identified during the site inspection.
Part F - Waste / Chemical Management
 No environmental deficiency was identified during the site inspection.
Part G - Permit / Licenses
• No environmental deficiency was identified during the site inspection.
Part H - Remark
• No environmental deficiency was identified during the site inspection.
Others
Follow-up on the previous audit session (Ref. No.121214), no major environmental deficiency was observed during the site inspection.

	Name	Signature	Date
Recorded by	Ken Cheng	Kn	20 December 2012
Checked by	Dr. Priscilla Choy	WI	20 December 2012

Inspection Information Checklist Reference Number 121227 Date 27 December 2012 (Thursday) Time 09:30 - 10:00

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

Ref. No. Remarks/Observations

<u></u>	Dast C. Water Quality
	Part C - Water Quality
	• No environmental deficiency was identified during the site inspection.
	Part D - Air Quality
	 No environmental deficiency was identified during the site inspection.
	Part E – Noise
	• No environmental deficiency was identified during the site inspection.
	Part F - Waste / Chemical Management
	• No environmental deficiency was identified during the site inspection.
	Part G - Permit / Licenses
	 No environmental deficiency was identified during the site inspection.
	Part H - Remark
	• No environmental deficiency was identified during the site inspection.
	Others
	• Follow-up on the previous audit session (Ref. No.121220), no major
	environmental deficiency was identified during the site inspection.

	Name	Signature	Date
Recorded by	Ken Cheng	fin	27 December 2012
Checked by	Dr. Priscilla Choy	NT	27 December 2012

APPENDIX I EVENT ACTION PLANS

APPENDIX I (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 I (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 UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

Type of Impact	Recommended Mitigation Measures	Status						
Air Quality	Dust mitigation measures stipulated in the Air Pollution Control (Construction Dust) Regulation 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						
Noise 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.							
	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 J – 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									
	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.	V								
	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. 	V								
	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 	V
	General Refuse 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
	Construction & Demolition (C&D) Material 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.	V

Type of Impact	Recommended Mitigation Measures	Status
	Bentonite Slurry 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

Note: $\sqrt{-}$

 $\sqrt{-}$ Compliance of mitigation measures X - Non-compliance of mitigation measures

N/A – Not applicable

APPENDIX K WASTE GENERATION IN THE REPORTING MONTH Name of Department: Drainage Services Department

Contract No. :

DE/2009/09

Monthly Summary - Waste Flow Table for 2012

		Annual Quar	ntities of Inert C	&D Materials Ge	nerated Monthly		An	nual Quantities of	f C&D Materials	Generated Mont	hly
Month	Total Quantity Generated	Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
	$(\text{in } \text{m}^3)$	$(\text{in } \text{m}^3)$	$(\text{in } \text{m}^3)$	$(\text{in } \text{m}^3)$	$(\text{in } \text{m}^3)$	$(\text{in } \text{m}^3)$	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in tonne)
Jan	0	0	0	0	0	0	0	0	0	0	3.9
Feb	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	1.5	0.20	0	0	6.4
Apr	0	0	0	0	0	0	0	0.07	0	0	1.3
May	0	0	0	0	0	0	0	0.15	0	0	4.9
June	0	0	0	0	0	0	17.8	0	0	1030(L)	1.9
July	0	0	0	0	0	0	0	0	0	0	1.3
Aug	0	0	0	0	0	0	0	0.11	0	0	2.3
Sept	0	0	0	0	0	0	0	0.33	0	0	0
Oct	0	0	0	0	0	0	0	0.13	0	0	1.7
Nov	0	0	0	0	0	0	0	0.06	0	0	2.9
Dec	0	0	0	0	0	0	0	0.27	0	0	0
Total	0	0	0	0	0	0	19.3	1.32	0	1030(L)	26.6

	Forecast of Total Quantities of C&D Materials to be Generated from the Contractor											
Total Quantity Generated	Hard Rock & Large Broken Concrete		Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse		
$(\text{in } \text{m}^3)$	$(in m^3)$	$(in m^3)$	$(\text{in } \text{m}^3)$	$(\text{in } \text{m}^3)$	$(\text{in } \text{m}^3)$	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in tonne)		
0	Nil	0	0	0	0	100	100	50	10	500		

Notes: (1)

(2)(3)

The performance targets are given in PS Clause 1.40.8(14). The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site. Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material. The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m³. (PS Clause 1.40.7(4)(b) refers. (4)

APPENDIX L COMPLAINT LOG

APPENDIX L – COMPLAINT LOG

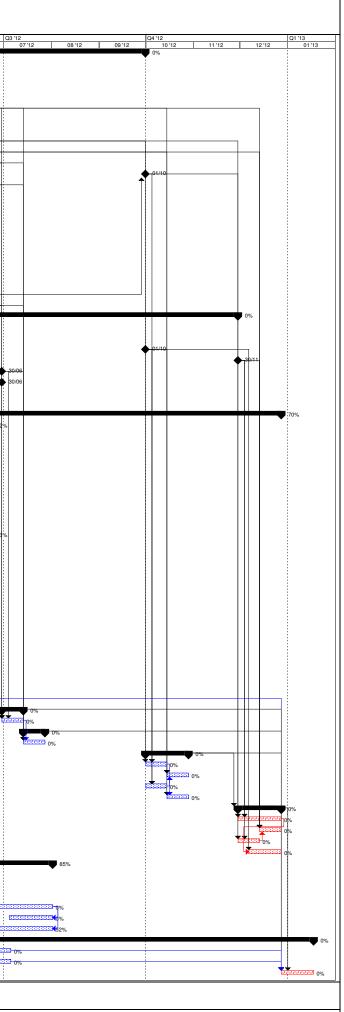
Reporting Month: December 2012

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

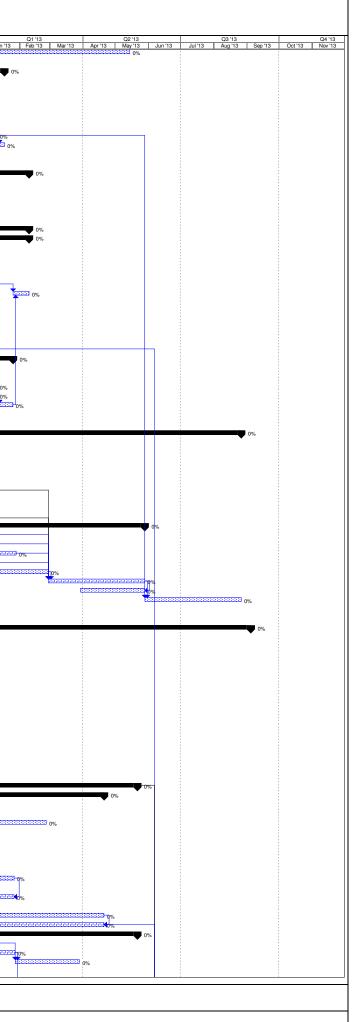
Remarks: No environmental complaint was received in the reporting month.

APPENDIX M CONSTRUCTION PROGRAMME

						Supply and Installation of Electri	Contract No. DE/2009/09 ical and Mechanical Equipment for Tai Po Sewage Treatment Section I of the Works	Works Stage 5 Phase 2B		
					03 '11 04 '11 05 '11 06 '11	Q3 '11 07 '11 08 '11		Q1 '12 12 '11 01 '12 02 '12	Q2 '12 03 '12 04 '12	06 '12
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0 Lifting Appliance 14 day Mon 01/0012 Sun 4/00/12 0 Sundge Draw off Damber Ko. (Re-constructed) 26 day Fill 30/11/2 Sundge Draw off Damber Ko. (Re-constructed) 26 day Fill 30/11/2 The 27/12/2 Sundge Draw off Damber Ko. (Re-constructed) 26 day Fill 30/11/2 The 27/12/2 The 27/12/2 </td <td>67</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	67									
0 Sludge Draw-Off Combine Mo. (Re-constructed) 28 days Fin 301112 Thu 271212 0 Submet Mo. (Indiation 28 days Fin 301112 Thu 271212 0 Submet Mo. (Indiation 16 days Fin 301112 Thu 271212 0 Lifting Applance 14 days Fin 301112 Thu 271212 0 Lifting Applance 14 days Fin 301112 Thu 271212 0 Upgrade of LV. Stelliobard (MCC4) at Natibian 14 days Fin 301112 Thu 271212 0 Upgrade of LV. Stelliobard (MCC4) at Natibian 14 days Fin 301112 Thu 271212 1 Num Stelliobard MCC1 14 days Mon 165011 Mon 165011 Mon 165011 2 Upgrade of LV. Stelliobard MCC4 at Natibian on Testing 25 days Mon 165011 Mon 165011 3 LV. Stelliobard MCC4 instalian on Testing MCC4 26 days Fin 060712 Word 10612 4 LV. Stelliobard MCC4 instalian on Testing MCC4 135 days Thu 060712 Word 10612 5 Stellion MC4400 Fin 2001212 Thu 1700173 Wo	68									
1 Pendock Installation 28 days Pfi 301 11/2 Thu 27/1212 2 Submissibe Dran Purps and Pepeork 14 days Pfi 14/12/2 Thu 27/1212 4 Instrumentation and Electrical Installation 21 days Pfi 14/12/2 Thu 27/1212 4 Instrumentation and Electrical Installation 21 days Pfi 07/12/2 Thu 27/1212 5 Opgrade of LV. Switchboard (MCC4) at Chemical Notae 21 days Pfi 07/12/2 Thu 27/1212 6 Instrumentation and Electrical Installation 21 days Pfi 07/12/2 Thu 27/1212 6 Temporay Relocation MixOci Doxing System 1 days Pfi 07/12/2 Thu 27/1212 7 Temporay Relocation of NixOci Doxing System 1 days Pfi 07/16/12 Thu 08/0011 7 Temporay Relocation of NixOci Doxing System 1 days Pfi 02/0612 Pedio1/0612 0 Modification of Existing SCAD/PLC System E at Aration Tark Control Klosk 28 days Thu 08/07/12 Pedio1/0612 1 0.5.4 Fi 12/2 Pfi 12/20012 Thu 17/01/13 1 Fi addrid Pfi 22/0012 Thu 05/07/2 2 Textdownil Test of FC18 </td <td>69</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	69									
2 Submarable Drain Pumps and Ppeneork 14 day Fi 14/1212 Thu 27/1212 3 Lilling Applance 14 day Fi 14/1212 Thu 27/1212 4 Internetation and Excincial Installation 21 day Fi 07/0727 Thu 27/1272 5 Upgrade of LV. Switchboard (MCC4) at Chemical House 44 day Mon 160511 Wed 010811 6 Temporary Control Panels for Skitting DACD Daving System 1 day Mon 160511 Mon 050511 7 Temporary Control Panels for Skitting DACD Daving System 1 day Mon 160511 Mon 050511 8 Modification of Chemical House (by Chil Contractor) 29 day Wed 010811 Thu 310512 9 L.V. Switchboard (MCC4) Instalation and Testing 62 day Fi 1005712 Wed 010812 10 Modification of Chemical House (by Chil Contractor) 29 day Wed 010812 Wed 010812 10 Modification of Existing SCADA/PLC System E at Amation Tark Control Koak 28 day Fi 10057712 Wed 010812 10 Modification of Existing SCADA/PLC System E at Amation Tark Control Koak 28 day Fi 220612 Thu 507012 10 Fi seting 4 Fi day 57712 Fi 2	70									
a Lifting Applancie 14 day Fri 30/11/2 Thu 13/12/2 instrumentation and Electical Installation 21 day Fri 30/12/2 Thu 27/12/12 Thu 27/12/12 <t< td=""><td>71 72</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	71 72									
4 Instrumentation and Electrical Installation 21 days F107/12/12 Thu 27/12/12 5 Upgrade of LV. Switchboard (MCC4) at Chemical House 444 days Mon 1605/11 Wed 0106/11 6 Temporary Relocation of NaCC Dosing System 1 day To ue 900/811 To ue 900/812 To ue 900/811 To ue 900/812 To ue 900/812 <td< td=""><td>72 73</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	72 73									
5 Upgrade of LV. Switchboard (MCC4) at Chemical House 444 day Mon 1605/11 Wed 01/08/12 6 Temporary Relocation of NaCCI Dising System 1 day Mon 1605/11 Mon 2507/11 7 Temporary Relocation of NaCCI Dising System 1 day Wed 01/08/12 Wed 01/08/12 8 Modification of Chemical House (by CVC Instant) 286 days Wed 01/08/12 Wed 01/08/12 9 L.V. Switchboard (MCC4) Instaliation and Testing 62 days Fit 01/08/12 Wed 01/08/12 10 Modification of Chemical Wase (by CVC Instaliation and Testing 62 days Fit 01/08/12 Wed 01/08/12 11 Essential Stating SCADA/PLC System E at Aeration Tank Control Klosk 28 days Thu 05/07/12 Wed 01/08/12 12 Testing & Controls / Mays Fit 2206/12 Thu 05/07/12 Wed 01/08/12 13 Functional Test of FC118 14 days Fit 2206/12 Thu 05/07/12 14 Fit 2206/12 Thu 05/07/12 Fit 2206/12 Thu 05/07/12 14 Fit 2206/12 Thu 05/07/12 System Commissioning System Commissioning System Commissioning System Commissioning Fit 2206/12 Thu 05/07/12 <t< td=""><td>74</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	74									
8 Temporary Control Panels for Existing MCC 71 day Mon 1605/11 Mon 2507/11 7 Temporary Relocation of NACC Dooing System 1 day Tue 0908/11	75					:	:	:	;	 .
Image: Second secon	76									
9 L.V. Switchboard (MCC4) Installation and Testing 62 day Fi 010.6/12 Wed 010.8/12 0 Modification of Existing SCADA/PLC System E at Aeration Tank Control Kiosk 28 days Thu 0507/12 Wed 010.0/12 1 B.S. & F.S. Installation 135 days Tue 2003/12 Wed 010.0/12 Wed 010.0/12 2 Testing & Commissioning 210 days Fri 22.06/12 Thu 170.01/3 Fri 22.06/12 Thu 170.01/3 3 Functional Test of FC118 14 days Fri 22.06/12 Thu 05.07/12 Thu 05.07/12 4 Functional Test of FC128 14 days Fri 22.06/12 Thu 05.07/12 Thu 05.07/12 5 System Commissioning 21 days Fri 22.06/12 Thu 05.07/12 Thu 05.07/12 6 System Commissioning 14 days Fri 22.06/12 Thu 05.07/12 Thu 05.07/12 6 System Commissioning 21 days Fri 28.12 Thu 170.01/3 Fri 28.12 1sion: Critical Spitem Commissioning Spitem Commissioning Spitem Commissioning Spitem Commissioning Spitem Commissioning 1sion: Critical Meteore Contexet on texet on texe on texet on texe on texe on texe	77					100%				
0 Modification of Existing SCADAPLC System E at Aration Tank Control Klosk 28 days Thu 0507/12 Wed 01/08/12 1 B.S. & F.S. Installation 135 days Tue 2003/12 Wed 01/08/12 2 Testing & Commissioning 21 0 days Fri 2206/12 Thu 17/01/3 3 Functional Test of FC11B 14 days Fri 2206/12 Thu 05/07/12 4 Finctional Test of FC12B 21 days Fri 2206/12 Thu 05/07/12 5 System Commissioning 21 days Fri 2206/12 Thu 05/07/12	78					1				99%
1 B.S. & F.S. Installation 135 day Tue 2003/12 Wed 01/08/12 2 Testing & Commissioning 210 days Fri 2206/12 Thu 17/01/13 3 Functional Test of FC11B 14 days Fri 2206/12 Thu 05/07/12 4 Functional Test of FC12B 14 days Fri 2206/12 Thu 05/07/12 5 System Commissioning 21 days Fri 2206/12 Thu 17/01/13 rsion: Critical Progress Split Tur 17/01/13 Silon: Critical Progress Split Split Baseline Milestone ◊ Summary Progress Project Summary External Milestone ◊	79 80				4					10000000000000000000000000000000000000
2 Testing 4 Commissioning 210 day Fri 2206/12 Thu 17/01/13 3 Functional Test of FC11B 14 days Fri 2206/12 Thu 05/07/12 4 Functional Test of FC12B 14 days Fri 2206/12 Thu 05/07/12 5 System Commissioning 21 days Fri 2206/12 Thu 05/07/12 tisi):: L Critical Progress Spit Spit Fri 2206/12 Thu 17/01/13	80 81								↓ : 	
3 Functional Test of FC11B 14 days Fn 2206/12 Thu 0507/12 4 Functional Test of FC12B 14 days Fn 2206/12 Thu 0507/12 5 System Commissioning 21 days Fn 28/12/12 Thu 17/01/13 Critical Progress Spit Spit Spit Spit Spit Spit Spit Spit External Miestone Spit Spit Spit Spit Spit Spit Spit Spit External Miestone Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit Spit </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>ľ</td>										ľ
5 System Commissioning 21 days Fri 28/12/12 Thu 17/01/13 rsion: D Critical Critical Progress Split rsion: D Split Split	83									1
ision: D	84	Functional Test of FC12B	14 days Fri	22/06/12 Thu 05/07/12						
	85	System Commissioning	21 days Fri	28/12/12 Thu 17/01/13	1 1					
		Critical Critical Progress	Sr	olit	Baseline Baseline Baseline Mileste	one 🚫 Summ	nary Progress	External Milestone		
		D						* * *		
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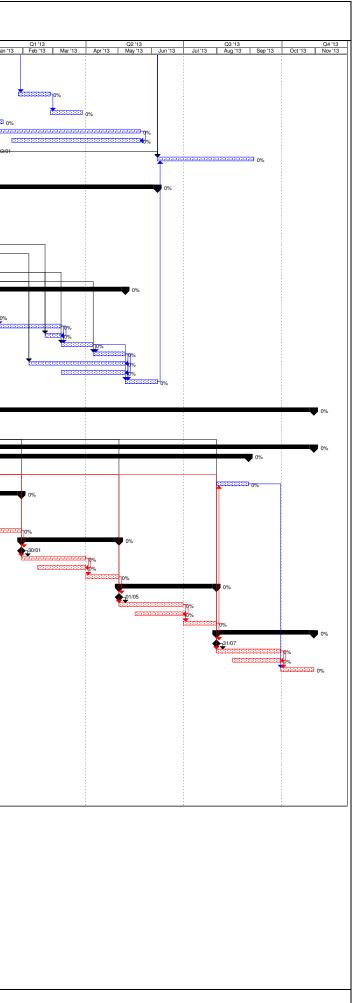


			Supply and Installation of Electrical	Section III Works Programme		
Task Name		Q2 '11 Apr '11 Jun '11 Jul '11	Q3 '11 Q4 Aug '11 Sep '11 Oct '11 Nov	4 '11 Q1 '12 w '11 Dec '11 Jan '12 Feb '12 Mar '12	Q2 '12 Apr '12 May '12 Jun '12	Q3'12 Q4'12 Jul'12 Aug'12 Sep'12 Oct'12 Nov'12 De
Section III of the Works	425 days Fri 16/03/12 Tue 14/05/13					
Modification / Replacement of Existing L.V. Switchboard (PST MCC5 & MCC5A) MCC5 Manufacture & Delivery to Site	158 days Mon 13/08/12 Thu 17/01/13 90 days Mon 13/08/12 Sat 10/11/12					here and her
Temporary Works Preparation	31 days Thu 16/08/12 Sat 15/09/12					CONSISTENCE CONSIS
Temporary Works Installation Migration of Power/Control for Existing E&M Equipment to Temporary Panels	14 days Sun 16/09/12 Sat 29/09/12 14 days Sun 30/09/12 Sat 13/10/12					E
Removal of Existing MCC5 & MCC5B	7 days Sun 14/10/12 Sat 13/10/12					0%
Civil Modification Works (By Civil Contractor)	21 days Sun 21/10/12 Sat 10/11/12					0%
MCC5 Installation, MCC5A Modification, SAT, Cable Installation & Migration Removal of Temporary Panels	61 days Sun 11/11/12 Thu 10/01/13 7 days Fri 11/01/13 Thu 17/01/13					
Air Blowers in CBC	437 days Thu 01/12/11 Sat 09/02/13					
Equipment and Material Delivery to Site	212 days Thu 01/12/11 Sat 30/06/12				0	10
Air Blowers	0 days Thu 01/12/11 Thu 01/12/11			♦ 01/12		
Pipework & Valves Air Ductwork	0 days Sat 30/06/12 Sat 30/06/12 0 days Sat 30/06/12 Sat 30/06/12					A06
Vibration Monitoring System	0 days Sat 30/06/12 Sat 30/06/12				-	//06
Modification Works Air Blower No.5	258 days Mon 28/05/12 Sat 09/02/13 258 days Mon 28/05/12 Sat 09/02/13					
Decommissioning & Dismantle of Existing Air Blower & Accessories	15 days Mon 28/05/12 Mon 11/06/12				<u></u> 10%	
Civil Modification & GMS Puddle Flange Pipe Installation (By Civil Contractor) Installation of New Air Blower & Accessories	21 days Tue 12/06/12 Mon 02/07/12 30 days Tue 03/07/12 Wed 01/08/12				Č. Starte	2
Installation of New Air Blower & Accessories Electrical Installation (with Temporary MCC/Starter Panel)	30 days Tue 03/07/12 Wed 01/08/12 30 days Tue 03/07/12 Wed 01/08/12					0% 333335559 0%
Testing and Commissioning	15 days Thu 02/08/12 Thu 16/08/12					1212122 0%
Migration from Temporary MCC/Starter to MCC2 Air Blower No.2	15 days Sat 26/01/13 Sat 09/02/13 81 days Fri 17/08/12 Mon 05/11/12					0%
Decommissioning & Dismantle of Existing Air Blower & Accessories	15 days Fri 17/08/12 Fri 31/08/12					B22222370%
Civil Modification & GMS Puddle Flange Pipe Installation (By Civil Contractor) Installation of New Air Blower & Accessories	21 days Sat 01/09/12 Fri 21/09/12 30 days Sat 22/09/12 Sun 21/10/12					
Electrical Installation (with New MCC2)	30 days Sat 22/09/12 Sun 21/10/12 30 days Sat 22/09/12 Sun 21/10/12					B2222222222222222
Testing and Commissioning	15 days Mon 22/10/12 Mon 05/11/12					1.11111 10%
Air Blower No.1 Decommissioning & Dismantle of Existing Air Blower & Accessories	81 days Tue 06/11/12 Fri 25/01/13 15 days Tue 06/11/12 Tue 20/11/12					5-2-2-2-10% 1-2-2-2-2-10%
Civil Modification & GMS Puddle Flange Pipe Installation (By Civil Contractor)	21 days Wed 21/11/12 Tue 11/12/12					
Installation of New Air Blower & Accessories Electrical Installation (with New MCC2)	30 days Wed 12/12/12 Thu 10/01/13 30 days Wed 12/12/12 Thu 10/01/13					
Testing and Commissioning	15 days Fri 11/01/13 Fri 25/01/13					
Primary Sedimentation Tank No.5	391 days Wed 01/08/12 Mon 26/08/13					T
Equipment and Material Delivery to Site	0 days Wed 01/08/12 Wed 01/08/12					01/08
Sludge & Scum Collection System PST Drain-off Pump	0 days Wed 01/08/12 Wed 01/08/12 0 days Wed 01/08/12 Wed 01/08/12					◆_01/08 ◆ 01/08
Scum Pump	0 days Wed 01/08/12 Wed 01/08/12					Ф 1/08
Pipework & Valves Local Control Panel for Sludge & Scum Collection System	0 days Wed 01/08/12 Wed 01/08/12 0 days Wed 01/08/12 Wed 01/08/12					♦ 01/08
Site Possession / Available	0 days Wed 01/08/12 Wed 01/08/12					 ↓ 01/08 ↓ 01/08
PST No.5 Cable Drawpit & Duct	0 days Wed 01/08/12 Wed 01/08/12 0 days Wed 01/08/12 Wed 01/08/12					◆ 01/08 ● 01/08
Cable Drawpit & Duct Installation	0 days Wed 01/08/12 Wed 01/08/12 301 days Wed 01/08/12 Tue 28/05/13					
Sludge & Scum Scrapers	90 days Wed 01/08/12 Mon 29/10/12					0%
Influent Pipework in Pipe Gallery PST Drain-off Pump & Associated Pipework	61 days Tue 30/10/12 Sat 29/12/12 30 days Sun 30/12/12 Mon 28/01/13					
Water Spray Pipework for Scum Trough	15 days Tue 30/10/12 Tue 13/11/12					0%
Scum Pump & Associated Pipework Local Control Panel & Electrical Installation	60 days Sun 30/12/12 Wed 27/02/13 90 days Thu 28/02/13 Tue 28/05/13					
H2S Detection System Installation	60 days Sat 30/03/13 Tue 28/05/13					
Testing and Commissioning	90 days Wed 29/05/13 Mon 26/08/13					
New Aeration Tanks No.5 to 7 Equipment and Material Delivery to Site	860 days Fri 29/04/11 Wed 04/09/13	Y				
Air Diffusers	384 days Fri 29/04/11 Thu 17/05/12 0 days Thu 17/05/12 Thu 17/05/12				0% 17 ⁰ 05	
GRP Mixer Bridges	0 days Fri 16/03/12 Fri 16/03/12			◆ 16/03	•	
Bridge Mounted Vertical Mixers MLR Pumps	0 days Fri 16/03/12 Fri 16/03/12 0 days Tue 01/11/11 Tue 01/11/11		▲ <u>01</u> /	/11		
Submersible Mixers	0 days Tue 01/11/11 Tue 01/11/11		 ↓ 01/1 	/11		
Water Spray Pumps Penstock & Actuators	0 days Fri 13/05/11 Fri 13/05/11 0 days Thu 01/03/12 Thu 01/03/12	♦ 13/05		▲ 04/05		
Instruments (EM Flowmeters, Air Flowmeters & Online Sensors)	0 days Fri 29/04/11 Fri 29/04/11	◆ 29/04		♦ 01/03		
Pipework & Valves	0 days Sat 15/10/11 Sat 15/10/11	-	◆ 15/10	•		
Lifting Appliance GMS Air Mains	0 days Fri 16/03/12 Fri 16/03/12 0 days Fri 16/03/12 Fri 16/03/12			♦ 16/03 ● 16/03		
Site Possession / Available	31 days Sun 01/07/12 Wed 01/08/12			•		
New Aeration Tanks No.5 & 6 New Aeration Tank No.7	0 days Sun 01/07/12 Sun 01/07/12 0 days Wed 01/08/12 Wed 01/08/12					H07
Pipe Gallery Extension	0 days Sun 01/07/12 Sun 01/07/12				• •	1/07
Installation	325 days Sun 01/07/12 Tue 21/05/13				Ý	
New Aeration Tanks No.5 & 6 GMS Air Mains & FRP Staircase	294 days Sun 01/07/12 Sat 20/04/13 60 days Sun 01/07/12 Wed 29/08/12					10%
Air Diffusers	120 days Thu 30/08/12 Thu 27/12/12					
Air Pipework, Butterfly Valves & Air Flowmeters GRP Mixer Bridges	60 days Fri 28/12/12 Mon 25/02/13 45 days Sun 01/07/12 Tue 14/08/12				t t	
Bridge Mounted Vertical Mixers	45 days Wed 15/08/12 Fri 28/09/12				\prod	10 / A
Lifting Appliance MLR Pumps & Associated Pipework	60 days Sun 01/07/12 Wed 29/08/12 60 days Thu 30/08/12 Sun 28/10/12				Ħ	
Submersible Mixers	30 days Mon 29/10/12 Tue 27/11/12					0%
Water Spray Pumps & Associated Pipework Penstock & Actuators	30 days Fri 28/12/12 Sat 26/01/13 45 days Sun 01/07/12 Tue 14/08/12					
Penstock & Actuators Instruments	45 days Sun 01/07/12 Tue 14/08/12 30 days Fri 28/12/12 Sat 26/01/13					
RAS Pipework in Pipe Gallery Extension	120 days Thu 16/08/12 Thu 13/12/12					
Electrical Works SCADA/PLC System	180 days Tue 23/10/12 Sat 20/04/13 120 days Sat 22/12/12 Sat 20/04/13					
New Aeration Tanks No.7	294 days Wed 01/08/12 Tue 21/05/13					
GMS Air Mains & FRP Staircase Air Diffusers	60 days Wed 01/08/12 Sat 29/09/12 120 days Sun 30/09/12 Sun 27/01/13					132333333333333 <mark>0%</mark>
Air Pipework, Butterfly Valves & Air Flowmeters	60 days Mon 28/01/13 Thu 28/03/13					\downarrow
GRP Mixer Bridges	45 days Wed 01/08/12 Fri 14/09/12					0%



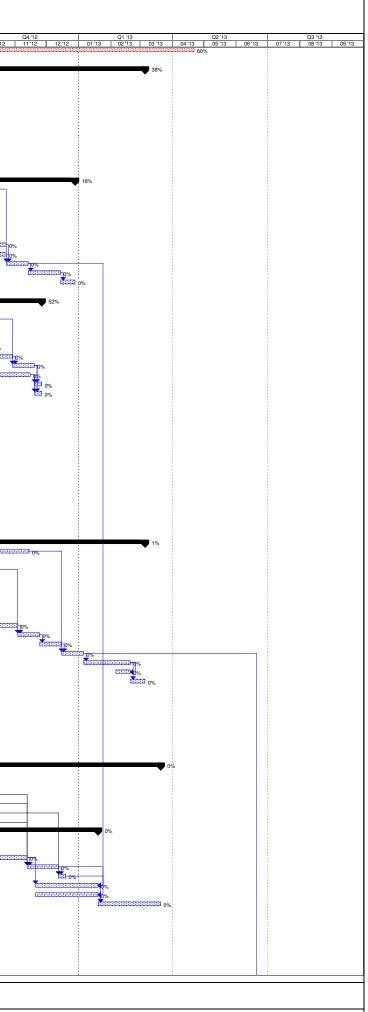
					Supply and	Installation of Electrical and Mechanical Equipr	act : DE/2009/09 pment for Tai Po Sewage Treatment W Drks Programme	orks Stage 5 Phase 2B		
ID	Task Name	Duration	Start	Finish	02'11 03'11 Apr'11 May'11 Jun'11 Jul'11 Aug'11 Sep'11	Q4 '11 1 Oct '11 Nov '11 Dec '11	Q1 '12 Jan '12 Feb '12 Mar '12	Q2 '12 Apr '12 May '12 Jun '12	Q3 '12 Jul '12 Aug '12 S	Q4 '12 ep '12 Oct '12 Nov '12 Dec '12 J
101	Bridge Mounted Vertical Mixers Lifting Appliance	45 days 60 days		Mon 29/10/12 Sat 29/09/12						0%
102	MLR Pumps & Associated Pipework	60 days	Sun 30/09/12							
104	Submersible Mixers	30 days		Fri 28/12/12						0%
105	Water Spray Pumps & Associated Pipework	30 days		Tue 26/02/13 Fri 14/09/12						
106	Penstock & Actuators Instruments	45 days 30 days							hand a second seco	20%
108	RAS Pipework in Pipe Gallery Extension	120 days								•
109	Electrical Works	180 days	Fri 23/11/12	Tue 21/05/13						
110 111	SCADA/PLC System MCC3 Ready	120 days 0 days	Tue 22/01/13 Thu 03/01/13	Tue 21/05/13 Thu 03/01/13						•
112	Testing and Commissioning	90 days								
113										
114 115	New Mixed Liquor Channels	584 davs	Tue 01/11/11	Thu 06/06/13						
115	Equipment and Material Delivery to Site	274 days	Tue 01/11/11 Tue 01/11/11	Wed 01/08/12					0%	
117	Foam Removal Collector	0 days				•			01/08	
118	Submersible Mixers	0 days	Tue 01/11/11	Tue 01/11/11		♦ 01/11			•	
119 120	Penstock & Actuator	0 days		Thu 01/03/12 Wed 01/08/12			◆ 01/03			
120	Lifting Appliance Pipework & Valves	0 days 0 days								
122	Local Control Panel	0 days		Wed 01/08/12					01/08	
123	Site Possession / Available	82 days		Sat 01/12/12					Ť I	••••
124 125	Mixed Liquor Channel, Foam Channel & Pillar Box Bunded Area & Shelter for NaOCI Decing System	0 days		Mon 10/09/12						10/09
125	Bunded Area & Shelter for NaOCI Dosing System Installation	0 days 240 days	Sat 01/12/12 Mon 10/09/12	Sat 01/12/12 Tue 07/05/13						♦ 1 1/12
127	Penstock & Actuactor in Flow Splitter Box	60 days		Thu 08/11/12						<u>10%</u>
128	Lifting Appliance	30 days	Fri 09/11/12							8122222222222
129 130	Submersible Mixers Foam Removal Collector	30 days 60 days		Mon 07/01/13 Fri 08/03/13						
130	Water Spray System	15 days	Fri 22/02/13							
132	Relocation of Foam Transfer Pumps	30 days	Sat 09/03/13	Sun 07/04/13						
133 134	Relocation of NaOCI Dosing System	30 days								
134	Local Control Panel & Electrical Installation SCADA/PLC System	90 days 60 days		Tue 07/05/13 Tue 07/05/13						
136	Testing and Commissioning	30 days								
137										
138 139	Eviction Agration Tanks No.1 to 4	425 days	Sat 01/09/12	Wed 30/10/13					· · · ·	
139	Existing Aeration Tanks No.1 to 4 Equipment and Material Delivery to Site	425 days 0 days	Sat 01/09/12 Sat 01/09/12	Sat 01/09/12					0	1/09
141	GMS Air Mains	0 days	Sat 01/09/12	Sat 01/09/12					ρ	1/09
142 143	Pipework & Valves	0 days		Sat 01/09/12						//09
143	Modification Works New Air Mains	425 days 364 days	Sat 01/09/12 Sat 01/09/12	Wed 30/10/13 Fri 30/08/13						:
145	Steel Bridges (By Civil Contractor) Available for Air Mains	0 days		Sat 01/09/12						//09
146	GMS Air Mains Installation	61 days	Sat 01/09/12							0%
147 148	Connection Existing Air Mains beside RAS Pumping Station (By Civil Contractor) Aeration Tank No.4	30 days		Fri 30/08/13 Wed 30/01/13						
148	Aeration 1 ank No.4 Tank Available for Modification (Drained Down by DSD/ST1)	91 days 0 days								31/10
150	Air Pipework, Butterfly Valves & Air Flowmeters	60 days	Thu 01/11/12	Sun 30/12/12						1
151	Electrical Installation	45 days	Fri 16/11/12							Excelete and the second s
152 153	Testing and Commissioning Aeration Tank No.3	31 days 91 days	Mon 31/12/12 Wed 30/01/13							<u>11111</u>
153	Tank Available for Modification (Drained Down by DSD/ST1)	0 days								
155	Air Pipework, Butterfly Valves & Air Flowmeters	60 days	Thu 31/01/13	Sun 31/03/13						
156 157	Electrical Installation Testing and Commissioning	45 days 31 days	Fri 15/02/13 Mon 01/04/13							
157	Testing and Commissioning Aeration Tank No.2	31 days 91 days								
159	Tank Available for Modification (Drained Down by DSD/ST1)	0 days	Wed 01/05/13							
160	Air Pipework, Butterfly Valves, & Air Flowmeters	60 days								
161 162	Electrical Installation	45 days 31 days								
162	Testing and Commissioning Aeration Tank No.1	31 days 91 days								
164	Tank Available for Modification (Drained Down by DSD/ST1)	0 days								
165	Air Pipework, Butterfly Valves & Air Flowmeters	60 days								
166 167	Electrical Installation	45 days								
167	Testing and Commissioning	31 days	WU1 30/09/13	Wed 30/10/13						
169										
	Filtrate Pumping System (Stage I/II Modification)	446 days							<u>.</u>	0%
171 172	Equipment and Material Delivery to Site Submersible Pump	311 days 0 days		Sun 01/07/12 Thu 25/08/11					• 0%	
172	Submersible Pump Pipework & Valves	0 days			◆ 25/08				01/07	
174	Site Possession / Available	0 days		Sun 01/07/12					01/07	
175	Underground Pipework to Stage IV Aeration Tanks (By Civil Contractor)	0 days							01/07	
176 177	Installation	105 days								0%
177	Pump Replacement & Pipework Modification at Existing Pump Chamber Filtrate Pipework Installation at Aeration Tanks	45 days 60 days		Tue 14/08/12 Sat 13/10/12					0%	
179	Existing L.V. Switchboard Modification	30 days							22222222222222 22222222222222 22222222	
180	Electrical Installation	45 days	Tue 31/07/12	Thu 13/09/12 Mon 12/11/12						3 0%
181	Testing and Commissioning	30 days								

Rev. 2	Critical	 Critical Progress	Split	a service serv	Baseline	Baseline Milestor	ne 🛇	Summary Progress	s IIIIIII	Project Summary	External Milest	one 🔶	
Rev. 2 Date: 28 May 2012	Critical Split	 Task	Task Progress		Baseline Split	 Milestone	•	Summary	—	External Tasks	Deadline	$\hat{\nabla}$	
										2000.2			

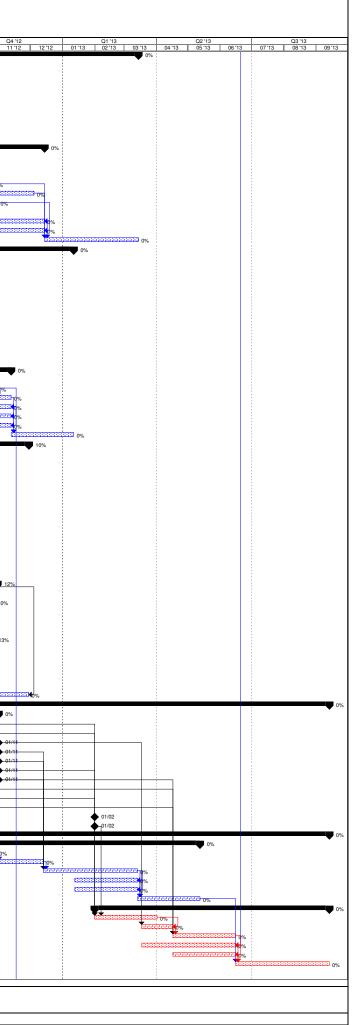


	DSD Contract : DE/2009/09 Supply and Installation of Electrical and Mechanical Equipment for Tai Po Sewage Treatment Works Stage 5 Phase 28 Section V Works Programme													
ID	Task Name	Duration	Start	Finish	Q1'11 01'11 02'11 03'11	Q2 '11 04 '11 05 '11 06 '11		-	Q1 '12 01 '12 03 '12 03 '12	Q2 '12 04 '12 05 '12	06 '12	Q3 '12 07 '12 08 '12 09 '12 10 '12	Q.	
1	Section V of the Works	821 days		Sun 21/04/13						0412 0012	0012			
3	Modification / Replacement of Existing L.V. Switchboard	774 days		Tue 05/03/13	_	:	: 	; 	: 	;	i i			
4	CBC G/F MCC Drawing Submission for CLP & DSD Approval	287 days		Fri 13/07/12 Fri 04/11/11				100%	1		1	85%		
6	Switchboard Manufacture & Delivery to Site Temporary Works Preparation	90 days 76 days		Sat 31/03/12 Sat 31/03/12						100%				
8	Site Setup of Temporary Backup Facilities & Removal of Existing Switchboard	45 days	Wed 11/04/12	Fri 25/05/12							100%			
9 10	Civil Modification Works (By Civil Contractor) New Switchboard Installation & SAT	21 days 14 days		Fri 15/06/12 Fri 29/06/12							0%	0%		
11	CLP's Tx Upgrading Works & Cable Connection to New Switchboard	45 days	Sat 12/05/12	Mon 25/06/12	-							%		
12 13	Removal of Existing Cables & Installation of New Cables Connect Permanent Power Supply for Existing Small Power D/B	14 days 14 days		Fri 13/07/12 Fri 13/07/12								0% 2003 0%		
14 15	IW 1/F MCC1	272 days	Sun 01/04/12	Fri 28/12/12										
15	Switchboard Manufacture & Delivery to Site	120 days		Sun 29/07/12					l l			48%		
17 18	Temporary Works Preparation Temporary Works Installation	61 days 31 days		Wed 25/07/12 Sat 25/08/12							Y	5%		
19	Migration of Power/Control for Existing E&M Equipment to Temporary Panels	31 days		Tue 25/09/12								0%		
20 21	Relocation of Existing Remote I/O Panel Removal of Existing Switchboard	31 days 7 days		Tue 25/09/12 Tue 02/10/12								0%		
22	Civil Modification Works (By Civil Contractor)	21 days	Wed 03/10/12	Tue 23/10/12								90	%	
23 24	Modification of Exisiting Switchroom Partition New Switchboard Installation & SAT	21 days 21 days		Tue 23/10/12 Tue 13/11/12								E	%	
25 26	Migration of Power/Control of Existing E&M Equipment to New Switchboard	31 days		Fri 14/12/12	-								Č	
26	Removal of Existing Cables & Installation of New Cables	14 days	Sat 15/12/12	Fri 28/12/12										
28 29	IW G/F MCC Drawing Submission for CLP & DSD Approval	675 days 175 days		Mon 26/11/12 Fri 15/07/11			100%	, , , , , , , , , , , , , , , , , , , ,			4			
30	Switchboard Manufacture & Delivery to Site	90 days	Sat 21/04/12	Thu 19/07/12			100%			t		42%	1	
31 32	Completion of Genset Replacement Temporary Works Preparation	0 days 31 days	Mon 24/09/12 Sat 25/08/12	Mon 24/09/12 Mon 24/09/12								24/09		
33	Site Setup of Temporary Backup Facilities & Removal of Existing Switchboard	14 days	Tue 25/09/12	Mon 08/10/12								0122B-10%		
34 35	Civil Modification Works (By Civil Contractor) New Switchboard Installation & SAT	21 days 21 days		Mon 29/10/12 Mon 19/11/12								[22222	0%	
36 37	CLP's Tx Upgrading Works & Cable Connection to New Switchboard	45 days	Tue 02/10/12											
38	Removal of Existing Cables & Installation of New Cables Connect Power Supply for Existing Lighting & Small Power D/B	7 days 7 days		Mon 26/11/12 Mon 26/11/12										
39 40	CBC 1/F MCC2A	182 days	Thu 01/03/12	Wed 29/08/12								210/		
41	Switchboard Manufacture & Delivery to Site	120 days	Thu 01/03/12	Thu 28/06/12							,	4%		
42 43	Relocate Existing Workstation to Existing Polymer Pump Room Relocate Existing CH4 & H2S Sensors Panels (if required)	6 days 31 days		Mon 21/05/12 Sat 31/03/12							100%			
44	Temporary Works Preparation	61 days	Sat 05/05/12	Wed 04/07/12								139%		
45 46	Temporary Works Installation Installation of Permanent Marshalling Boxes & Cable Trays	21 days 61 days		Wed 25/07/12 Tue 31/07/12								20000000000000000000000000000000000000		
47 48	Migration of Power/Control for Existing E&M Equipment to Temporary Panels (future from MCC2) Civil Modification Works (By Civil Contractor)	7 days 21 days		Wed 01/08/12 Mon 11/06/12								10%		
49	New Switchboard Installation & SAT	31 days	Fri 29/06/12	Sun 29/07/12							33%	ana		
50 51	Migration of Power/Control for Existing E&M Equipment to New Switchbaord Removal of Existing Switchboard	21 days 7 days		Wed 22/08/12 Wed 29/08/12								0%		
52	Removal of Existing Cables & Installation of New Cables	14 days										0%		
53 54	CBC 1/F MCC2	287 davs	Wed 23/05/12	Tue 05/03/13							n in the second s			
55	MCC2 Manufacture & Delivery to Site	150 days	Mon 18/06/12	Wed 14/11/12							La constante			
56 57	MCC2 Extension Manufacture & Delivery to Site Demolition of MCC8 at CBC 1/F	90 days 21 days	Wed 23/05/12 Fri 14/09/12	Mon 20/08/12 Thu 04/10/12									7	
58 59	Temporary Works Preparation Temporary Works Installation	61 days 21 days										10%		
60	Installation of Permanent Mashalling Boxes & Cable Trays	61 days	Thu 05/07/12	Mon 03/09/12								0%		
61 62	Civil Modification Works for MCC2 Extension (By Civil Contractor) MCC2 Extension Installation & SAT	21 days 14 days		Wed 19/09/12 Wed 03/10/12										
63	Migration of Power/Control for Existing E&M Equipment to New MCC2 Extension & Temp. MCC	31 days	Thu 04/10/12	Sat 03/11/12									10%	
64 65	Removal of Existing Switchboard MCC2 Civil Modification Works for MCC2 (By Civil Contractor)	21 days 21 days		Sat 24/11/12 Sat 15/12/12									Linis.	
66 67	MCC2 Installation & SAT Migration of Power/Control for Existing E&M Equipment to New MCC2	21 days 45 days		Sat 05/01/13 Tue 19/02/13										
68	Installation of New Cables	14 days	Wed 06/02/13	Tue 19/02/13										
69 70	Removal of Temporary Panels	14 days	Wed 20/02/13	Tue 05/03/13					- - 					
71	Replacement of Emergency Genset for IW G/F MCC	130 days		Mon 24/09/12	1						é ÷	8%		
72 73	New 1500kVA Genset & Accessories Delivery to Site Site Setup of Power Backup Facilities by Tempoary Genset	0 days 31 days		Wed 25/07/12 Sun 17/06/12						-	35%	●4 25/07		
74 75	Removal of Existing 750kVA Genset Civil Modification Works (By Civil Contractor)	7 days 31 days		Sun 24/06/12 Wed 25/07/12							0%	, 3333333 1 m v		
76	Installation of New Genset & SAT	61 days		Mon 24/09/12										
77 78	Inlet Works	692 days	Fri 29/04/11	Wed 20/03/13										
79	Equipment and Material Deliver to Site	491 days	Fri 29/04/11	Sat 01/09/12		¥						0%		
80 81	Screw Pumps Mechanical Bar Screen	0 days 0 days	Sat 01/09/12 Sat 01/09/12	Sat 01/09/12 Sat 01/09/12								◆ 01/09 ◆ 01/09		
82 83	Screw Conveyor Actuator for Existing Penstocks	0 days		Sat 01/09/12 Mon 02/04/12						00/07		♦ 01/09	\neg	
84	Ultrasonic Level Sensors	0 days 0 days		Fri 29/04/11		◆ -29/04				♥ 02/04			ゴ	
85 86	Installation Temporary Flow Diversion	203 days 30 days		Sat 19/01/13 Mon 30/07/12									+	
87	Construction / Modification of Existing Concrete Plinths for Screw Pumps	45 days	Tue 31/07/12	Thu 13/09/12								0%		
88 89	Screw Pump Installation & Screeding Works Installation of Mechanical Bar Screen, Screw Conveyor & Ultrasonic Level Sensors	60 days 30 days	Fri 14/09/12 Tue 13/11/12	Mon 12/11/12 Wed 12/12/12										
90	Installation of Actuators for Existing Penstocks	7 days	Thu 13/12/12	Wed 19/12/12	1						1			
91 92	Electrical Installation SCADA/PLC System	60 days 60 days	Wed 21/11/12 Wed 21/11/12	Sat 19/01/13 Sat 19/01/13										
93	Testing and Commissioning	60 days												
94 95														
96 97					1									
98														
99 100														
	I	I.			1									
Rev. 3 Date: 25	Critical Descention Critical Progress May 2012 Critical Split 1	Split		Baselin Baselin			Summary Progress	Project Summary External Tasks	External Milestone					
	- Unical Spint Task Concerned States	i ask Progress		Baselin	e Split N	Ailestone	Summary	Page 1	Deadline 🕂					
								raye i						

DSD Contract : DE/2009/09



Vertical Vertical Vertical Vertical Vertical Vertical Vertica		Supply and Ins	DSD Contrat : DE/2008/09 tallation of Electrical and Mechanical Equipment for Tai Po Sewage Treatment Works Stage 5 Phase 28 Section V Works Programme
	ID Task Name	Duration Start Finish 01 '11 02 '11 03 '11 04 '11 05 '11 06 '11	O3'11 O4'11 O1'12 O2'12 O3'12 07'11 08'11 09'11 11'11 12'11 01'12 03'12 04'12 05'12 06'12 07'12 08'12 09'12 10'12
			◆ 01/02
			♦ 01/04
			◆ 01/11 ◆ 01/09
	109 SBR Tank	0 days Sat 01/09/12 Sat 01/09/12	eoiro
			tion of the second s
	112 Take Down of Existing Decanter	5 days Sat 01/09/12 Wed 05/09/12	30%
	÷		
	119 Electrical Installation	60 days Tue 16/10/12 Fri 14/12/12	
	122 Primary Sludge Gravity Thickener		
			9%
	126 Pipework & Valves		
	129 CCTV System	0 days Fri 01/06/12 Fri 01/06/12	
			01/07
	133 Civil Works Provision at Existing Valve Chamber (By Civil Contractor)	0 days Sun 01/07/12 Sun 01/07/12	
			<u>♦ p:07</u>
	136 Knife Gate Valves & Actuators	30 days Sun 01/07/12 Mon 30/07/12	10%
	140 CCTV Installation	30 days Sun 14/10/12 Mon 12/11/12	
	143 Biogas System		
	*		
			♦ 19/12
Bit Mark Mark State Name Name Name Name 10 Approx Mark Mark 1000 Name			
	150 Pipework & Valves	0 days Tue 01/11/11 Tue 01/11/11	
			\mathbf{Y}
	157 Concrete Plinth for Relocated DO in Stage I/II	0 days Thu 15/03/12 Thu 15/03/12	
10 Description 11 all 10	160 Waste Gas Burner Installation in Stage IV	91 days Wed 01/08/12 Tue 30/10/12	
Bit Buscher Lang (b) Aug Buscher Lang Buscher Lang (b) Aug			
Note Note <th< td=""><td></td><td></td><td></td></th<>			
Number Number<	164 Biogas Holding Tank Installation	175 days Mon 07/05/12 Sun 28/10/12	
Number Description Option Product			
Image: de la basie	167 Installation in Pipe Gallery	60 days Sun 01/07/12 Wed 29/08/12	
Note Note <t< td=""><td></td><td></td><td>0%</td></t<>			0%
12 Decimand at data of Laboration y Dia 98 day Control Televinity 13 Edeparted at facing Loop y Dia 6.00 Vieto Y Dia	170 Testing and Commissioning	180 days Sun 03/06/12 Thu 29/11/12	
10 Skap Mare 0 400 0 60000 0 6000 0 6000<			
No. Outring a Cust hier Outring Cust hier Outrin	173 Sludge Mixers		↓
Note: Name Bala Out of Name Transmission Out of Name Transmission Out of Name Transmission Out of Name Transmission 77 House Beforenation Fung Out of Name Transmission Out of Name Transmission Out of Name Transmission 78 Preserv Vescum Relification Out of Name Transmission Out of Name Transmission Out of Name Transmission 78 Preserv Vescum Relification Out of Name Transmission Out of Name Transmission Out of Name Transmission 78 Preserv Vescum Relification Out of Name Transmission Out of Name Transmission Out of Name Transmission 78 Before State State State Out of Name Transmission Out of Name Transmission Out of Name Transmission 78 Before State Stat	174 Draft Tube & Cast-in Items		
172 Nav Weer Rescueduo Nunc_ 0.0 agr Tuo 011107 Tuo 011107 173 Nav Weer Rescueduo Nunc_ 0.0 agr Tuo 011107 Tuo 011107 174 Nave Weer Rescueduo Nunc_ 0.0 agr Tuo 011107 Tuo 011107 175 Pageoris & Vada 0.0 agr Tuo 011107 Tuo 011107 176 Pageoris & Vada 0.0 agr Tuo 011107 Tuo 011107 177 Pageoris & Vada 0.0 agr Tuo 011107 Tuo 011107 178 Pageoris Vada 0.0 agr Tuo 011107 178 Pageoris Vada 0.0 agr Fuo 011101 Tuo 011101 178 Pageoris Vada 0.0 agr Fuo 011017 Tuo 011101 178 Siste Pageoris Na Na.3 0.0 agr Foi 010213 Foi 010213 178 Siste Pageoris Na Na.3 0.0 agr Vadi 10012 Siste Pageoris Na Na.3 0.0 agr 179 Terropany Vada Falline Cill Madradov Weel (Sta Coll Contend) 0.0 agr Siste Pageoris Na Na.3 0.0 agr 179 Terropany Vada Falline Cill Madradov Weel (Sta Contend) 0.0 agr Siste Pageoris Na Nava 0.0 agr 170 Terropany Vada Falline Cill Madradov Weel (Sta Contend) 0.0 agr Siste Pageoris Nava 0.0 agr 171 <			
Preserve A. Waes O. dag Two UNITIZE Outgoe Twindow Outgoe Twindow<	177 Hot Water Recirculation Pump	0 days Thu 01/11/12 Thu 01/11/12	
101 Paren Arnets & Colonension Pa 0.0 mg Tag 01/111 Tag			
10 Importor Work 0 dig Tur 01/11/1 Tur 01/11/1 110 State Possession / Avabile 0 dig Tur 01/11/1 Tur 01/11/1 110 State Possession / Avabile 0 dig Tur 01/11/1 Tur 01/11/1 111 State Possession / Avabile 0 dig Tur 01/11/1 Tur 01/11/1 111 State Possession / Avabile 0 dig Tur 01/11/1 Tur 01/11/1 112 State Possession / Avabile 0 dig Fir 01/20/3 Fir 01/20/3 113 State Chaution State Chautin State Chaution State Chaution State Chaution			♦ 01/11
103 Side Possession / Nalable 0 days Fin 00071 Fin 000	181 Inspection Window	0 days Tue 01/11/11 Tue 01/11/11	♦ 01/11
18 Sludge Olgento Tark No.3 0 days Fri 0102/13 Fri 0102/13 18 Site Works 646 days Wed 016912 Fri 1303/13 18 Med Water Circulation System 255 days Wed 016912 Fri 1302/13 18 Temporary Works & Facilitate Cirlu Moditate Works 50 days Wed 016912 Fri 1302/13 18 Temporary Works & Facilitate Cirlu Moditate Works 60 days Fri 1302/13 Fri 1302/13 18 Confidencial Institution Purp A Accidated Physics (G) Contractor) 60 days Fri 1302/13 Fri 1302/13 19 SchAb, PLC System 60 days Fri 1302/13 Fri 1302/13 Fri 1302/13 193 Schab, PLC System 60 days Fri 1302/13 Fri 1302/13 Fri 1302/13 193 Schab, PLC System 60 days Fri 1302/13 Fri 1302/13 Fri 1302/13 193 Schab, PLC System 90 days Fri 1302/13 Fri 1302/13 Fri 1302/13 194 Installation of Dari Turbes, Sludy Mater Recivation, FridD Dasing Papenotik & Installinon / Dari Turbes, Sludy Mater Recivation, FridD Dasing Papenotik & Installinon / Dari Turbes, Sludy Mater Recivation, FridD Dasing Papenotik & Installinon / Dari Turbes, Sludy Mater Recivation, FridD Dasing			● 01/11
186 Hot Water Circulation System 286 days Wed 01 08/12 Sun 1205/13 187 Temporary Works & Facilitate Cirk Modification Works 900 900 Wed 01 08/12 Mon 291/012	184 Sludge Digestion Tank No.3	0 days Fri 01/02/13 Fri 01/02/13	
187 Tempory Works 0F Pailter Coll Modification Works (By Cirk Contractor) 99 days Work 09/12 Mon 29/172 188 Child Modification Works (By Cirk Contractor) 94 days Thu 30/1712 Thu 13/1212 189 Linstalation of Huw Boler, Recirculation Pump A Associated Pipework 90 days Fin 14/1212 Word 13/03/13 190 Electrical Instalation (with Temporary MCC) 60 days Sun 13/01/13 Werd 13/03/13 191 ScADA/PLC System 60 days Sun 13/01/13 Werd 13/03/13 192 Teeting and Commissioning 60 days Fin 10/02/13 Mon 201/04/13 193 Studge Digenting Tarks 22 days Fin 10/02/13 Mon 201/04/13 194 Instalation of Drait Tubes, Studge Mixers, Heat Exchangers & Inspection Window 60 days Fin 10/02/13 195 Instalation of Subje, Blogas, Hot Wafer Recirculation, Field Dosing Pipework & Instruments 60 days Suit 150/613 196 Instalation of Subje, Blogas, Hot Wafer Recirculation, Field Dosing Pipework & Instruments 60 days Suit 150/613 197 Electrical Instalation 90 days Kon 180/033 Sait 150/613 198 ScADAPLC System 60 days <t< td=""><td></td><td></td><td></td></t<>			
188 Oriki Modification Works (By Coll Contractor) 46 days Tre 2010/12 The 1912/12 188 Installation of Hot Water Boker, Recirculation Pump & Associated Pipework 90 days Fit 14/12/12 Wed 1300/13 199 Decircial Installation (with Tempory MCC) 60 days Sun 130/13 Wed 1300/13 191 SCADAPLC System 60 days The 130/13 Sun 130/13 Sun 130/13 192 Testing and Commissioning 22 days Fit 00/213 Kon 01/04/13 Sun 130/13 194 Installation of That Nes.3 22 days Fit 01/02/13 Kon 01/04/13 Sun 130/13 195 Installation of Christ Tubes, Sludge Mores, Heat Exchangers & Inspectro 60 days Fit 01/02/13 Kon 01/04/13 196 Installation of That Tubes, Sludge Mores, Heat Exchangers & Inspectro Window 60 days Wed 17/04/13 Sun 15/06/13 197 Electrical Installation Stating on Christon, Field Sudge Mores, Heat Exchangers & Inspectro Window 60 days Kin 15/06/13 Sun 15/06/13 199 Testallation of Sludge, Biogas, Hot Water Recirculation, Field Sudge Mores, Sus 15/06/13 Sus 15/06/13 Sus 15/06/13 Sus 15/06/13 199 Testal gand Commissio			
190 Electrical Installation (with Temporary MCC) 60 days Sun 130/1/3 Wed 1303/13 191 SCADAPCC System 60 days Sun 130/1/3 Wed 1303/13 191 SCADAPCC System 60 days Sun 130/1/3 Wed 1303/13 192 Testing and Commissioning 60 days Fri 1002/13 Fri 1002/13 193 Studge Digestion Tank No.3 225 days Fri 10102/13 Fri 1002/13 194 Installation of Draft Tubes, Sludge Mixers, Heat Exchangers & Inspection Window 60 days Fri 10102/13 195 Installation of BP Platform 60 days Wed 170/14/3 Sat 1506/13 196 Installation of BP Platform 90 days Wed 170/14/3 Sat 1506/13 197 Electrical Installation of Sudge, Biogas, Hot Water Recirculation, FeG3 Dosing Pipework & Instruments 60 days Wed 170/14/3 Sat 1506/13 198 SCADAP-IC System 90 days Sun 160/13 Fri 1309/13 Fri 1309/13 199 Testing and Commissioning 90 days Sun 160/13 Fri 1309/13 Fri 1309/13 199 Testing and Commissioning 90 days Sun 160/6/13 Fri 1309/13 Fri	188 Civil Modification Works (By Civil Contractor)		
191 SCADA/PLC System 66 days Sun 1301/13 Wed 1303/13 192 Testing and Commissioning 66 days Thu 14/03/13 Sun 1205/13 183 Studge Digestion Tank No.3 225 days Fri 10/02/13 Fri 1300/13 194 Installation of Draft Tubes, Studge Mixers, Heat Exchangers & Inspection Window 66 days Fri 10/02/13 195 Installation of GRP Platrom 30 days Mon 10/04/13 Sun 130/1/13 Sun 130/1/13 196 Installation of Shudge, Biogas, Hot Water Recirculation, FeCi3 Doeing Pipework & Instruments 60 days Wed 17/04/13 Sun 130/01/13 197 Electrical Installation 90 days Wed 17/04/13 Sun 130/01/13 Sun 150/01/13 198 SCADA/PLC System 60 days Wed 17/04/13 Sun 150/01/13 Sun 150/01/13 198 Testing and Commissioning 90 days Sun 160/01/13 Sun 150/01/13 Sun 150/01/13 198 Testing and Commissioning 90 days Sun 130/01/13 Sun 150/01/13 Sun 150/01/13 199 Testing and Commissioning 90 days Sun 150/01/13 Sun 150/01/13 Sun 150/01/13 199 Tes			
183 Sludge Digestion Tank No.3 225 days Fri 10.0213 Fri 13.09/13 194 Installation of Draft Tubes, Sludge Mixers, Heat Exchangers & Inspection Window 60 days Fri 10.0213 Mon 10.04/13 195 Installation of GRP Platform 30 days Mon 18.0313 Tue 160/413 196 Installation of Studge, Biogas, Hot Water Recirculation, FsC13 Dosing Pipework & Instruments 60 days Wed 17/04/13 Sat 1506/13 197 Electrical Installation of Carlt Elevation 90 days Wed 17/04/13 Sat 1506/13 198 SCADA/PIC System 60 days Wed 17/04/13 Sat 1506/13 199 Testing and Commissioning 90 days Sun 16/06/13 Fri 13/09/13 199 Testing and Commissioning 90 days Sun 16/06/13 Fri 13/09/13 199 Testing and Commissioning 90 days Sun 16/06/13 Fri 13/09/13 199 Testing and Commissioning Splt Testing and Bestone Image: Status Summary Progress Project Summary External Miscone 198/25/Mer 2012 Critical Progress Splt Testing and Commissioning Project Summary External Miscone 198/25/Mer 2012	191 SCADA/PLC System	60 days Sun 13/01/13 Wed 13/03/13	
194 Installation of Draft Tubes, Sludge Mixers, Heat Exchangers & Inspection Window 60 days Fri 01/02/13 Mon 01/04/13 195 Installation of GRP Platform 30 days Mon 18/03/13 Tue 16/04/13 196 Installation of SNP Delaform 00 days Wei 17/04/13 Sat 15/06/13 197 Electrical Installation of Suppersonance 00 days Wei 17/04/13 Sat 15/06/13 198 SCADA/PLC System 60 days Wei 17/04/13 Sat 15/06/13 199 Testing and Commissioning 90 days Sun 16/06/13 190 Testing and Commissioning 91 days Fri 13/09/13			
196 Installation of Sludge, Biogas, Hot Water Recirculation, FeCI3 Dosing Pipework & Instruments 60 days Wed 17/04/13 Sat 1506/13 197 Electrical Installation 90 days Mon 1803/13 Sat 1506/13 198 SCADA/PLC System 60 days Wed 17/04/13 Sat 1506/13 199 Testing and Commissioning 90 days Non 1800/13 Fri 1309/13 200 view 90 days Nin 160/06/13 Fri 1309/13 201 view 90 days Splt view Priotecharman 202 view 90 days Splt view Baseline Miestone 🏈 Summary Progress Project Summary External Milestone Internal Miestone	194 Installation of Draft Tubes, Sludge Mixers, Heat Exchangers & Inspection Window		
197 Electrical Installation 90 days Mon 18/03/13 Sal 15/06/13 198 SCADA/PLC System 60 days Wed 17/04/13 Sal 15/06/13 199 Testing and Commissioning 90 days Sun 16/06/13 Fri 13/09/13 00			
198 SCADA/PLC System 60 days Wed 17/04/13 Sai 15/06/13 199 Testing and Commissioning 90 days Sun 16/06/13 Fri 13/09/13 200			
200 201 201 201 201 201 201 201 201 201	198 SCADA/PLC System	60 days Wed 17/04/13 Sat 15/06/13	
ev. 3 Critical Progress Critical Progress Split + + + + + + + + + + + + + + + + + + +		90 days Sun 16/06/13 Fri 13/09/13	
	<u> </u>		
	54.5		Summary Progress TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
	e: 25 May 2012 Critical Split	Task Progress Baseline Split	Summary Deadline Ly



		DSD Cor Supply and Installation of Electrical and Mechanical E	ntract : DE/2009/09 juipment for Tai Po Sewage Treatment Works Stage 5 Phase 2B	
			Vorks Programme	
			-	
ID Task Name 201 SAS Thickening System	Q1 '11 Duration Start Finish 01 '11 02 '11 03 '	Q2 '11 Q3 '11 11 04 '11 05 '11 06 '11 07 '11 08 '11 09 '11	Q4 '11 Q1 '12 10 '11 11 '11 12 '11 01 '12 02 '12 03 '12	Q2 '12 Q3 '12 Q4 '12 Q1 '13 Q2 '13 Q3 '13 04 '12 05 '12 06 '12 07 '12 08 '12 10 '12 11 '12 12 '12 01 '13 02 '13 04 '13 05 '13 06 '13 07 '13 08 '13
	270 days Fri 01/06/12 Mon 25/02/13		1	· · · · · · · · · · · · · · · · · · ·
202 Equipment & Material Delivery to Site	34 days Fri 01/06/12 Thu 05/07/12			0%
203 Centrifuge	0 days Thu 05/07/12 Thu 05/07/12			→ _05/07
204 SAS Feed Pump	0 days Fri 01/06/12 Fri 01/06/12			● 01/06
205 Polyelectrolyte Feed Pump	0 days Fri 01/06/12 Fri 01/06/12			01/06
206 Thickened Sludge Storage Tank	0 days Fri 01/06/12 Fri 01/06/12			01/06
207 Pipework & Valves	0 days Fri 01/06/12 Fri 01/06/12			
208 Vibration Monitoring System	0 days Fri 01/06/12 Fri 01/06/12			
209 PLC System M Panel	0 days Fri 01/06/12 Fri 01/06/12			01/06
210 Site Possession / Available	0 days Fri 01/06/12 Fri 01/06/12			01/06
211 Civil Works Provision (By Civil Contractor)	0 days Fri 01/06/12 Fri 01/06/12			
212 Installation	180 days Fri 01/06/12 Tue 27/11/12			
213 Centrifuge, Vibration Monitoring System & Associated Accessories	30 days Thu 05/07/12 Fri 03/08/12			
214 SAS Feed Pump & Associated Pipework	30 days Sat 04/08/12 Sun 02/09/12			
215 Polyelectrolyte Feed Pump & Associated Pipework	16 days Mon 03/09/12 Tue 18/09/12			
216 Thickened Sludge Storage Tank & Associated Accessories	30 days Sat 04/08/12 Sun 02/09/12			
217 Centrate Pipework	16 days Mon 03/09/12 Tue 18/09/12			
218 Existing L.V. Switchboard Modification	90 days Fri 01/06/12 Wed 29/08/12			EXCLUSION CONTRACTOR AND CONTRACTOR
219 Electrical Installation	90 days Thu 30/08/12 Tue 27/11/12			
220 SCADA/PLC System	60 days Sat 29/09/12 Tue 27/11/12			
221 Testing & Commissioning	90 days Wed 28/11/12 Mon 25/02/13			
222				
223 Sludge Dewatering System	446 days Thu 08/12/11 Mon 25/02/13			19%
224 Equipment & Material Delivery to Site	115 days Thu 08/12/11 Sun 01/04/12			10/0%
225 Membrane Filter Press	0 days Mon 20/02/12 Mon 20/02/12			
226 Sludge Feed Pump	0 days Thu 08/12/11 Thu 08/12/11		08/12	
227 Polyelectrolyte Dosing Pump	0 days Sun 01/04/12 Sun 01/04/12		• · · · · · · · · · · · · · · · · · · ·	▶0/04
228 Floctronic Sensor c/w Inline Mixer	0 days Fri 20/01/12 Fri 20/01/12		▲ 20/01	
229 Pipework & Valves	0 days Sun 01/04/12 Sun 01/04/12			
230 PLC System K Panel	0 days Sun 01/04/12 Sun 01/04/12			
231 Site Possession / Available	0 days Sun 01/04/12 Sun 01/04/12		•	0/04
232 Civil Works Provision (By Civil Contractor)	0 days Sun 01/04/12 Sun 01/04/12			
233 Installation	275 days Mon 27/02/12 Tue 27/11/12			
234 Membrane Filter Press	79 days Mon 27/02/12 Tue 15/05/12			2.37e
235 Sludge Feed Pump & Associated Pipework	30 days Wed 16/05/12 Thu 14/06/12			
236 Polyelectrolyte Dosing Pump & Associated Pipework	30 days Fri 15/06/12 Sat 14/07/12		· · · · · · · · · · · · · · · · · · ·	
237 Filtrate Pipework	15 days Sun 15/07/12 Sun 29/07/12		i i	
238 Existing L.V. Switchboard Modification & Electrical Installation	90 days Fri 01/06/12 Wed 29/08/12			
239 Electrical Installation	90 days Thu 30/08/12 Tue 27/11/12		· · · · · · · · · · · · · · · · · · ·	
240 SCADA/PLC System	60 days Sat 29/09/12 Tue 27/11/12		· · · · · · · · · · · · · · · · · · ·	
241 Testing and Commissioning	90 days Wed 28/11/12 Mon 25/02/13		· · · · · · · · · · · · · · · · · · ·	
242				
243 Miscellaneous	90 days Sat 01/09/12 Thu 29/11/12		· · · · · · · · · · · · · · · · · · ·	
244 Hybrid Street Light Installation, Testing & Commissioning	90 days Sat 01/09/12 Thu 29/11/12		· · · · · · · · · · · · · · · · · · ·	
245 Automatic Weather Station Installation, Testing & Commissioning	90 days Sat 01/09/12 Thu 29/11/12			
Cro Automato realiter oraliter oraliter oraliter installation, resulting a commissioning	So days Sat Choone The Sonthie	<u> </u>		U76

Bey 3	Critical	Critical Progress	Split	 Baseline	Baseline Milestone	Summary Progress		Project Summary	External Milestone	
Rev. 3 Date: 25 May 2012	Critical Split	 Task	 Task Progress	Baseline Split	 Milestone	Summary		External Tasks	Deadline	
							P	ade 3		