China Harbour Engineering Company Limited

Contract No. DC/2007/20

Harbour Area Treatment Scheme Stage 2A – Construction of Advance Disinfection Facilities at Stonecutters Island Sewage Treatment Works

Environmental Monitoring and Audit

Monthly Report (Version 1.0) for

September 2009

Approved By	Dr. Priscilla Choy (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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EXECUTIVE SUMMARY

Introduction

1. This is the 15th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for Contract No. DC/2007/20 "Harbour Area Treatment Scheme Stage 2A – Construction of Advance Disinfection Facilities at Stonecutters Island Sewage Treatment Works" (the Project). This report documents the findings of Construction Phase EM&A Works conducted for the Project in September 2009.

2. The construction works for Portions 1 & 2 and Portions 3 & 4 of the Project were commenced on 18th July 2008 and 18th September 2008 respectively.

3. The major site activities undertaken in the reporting month included:

- Fiber Reinforced Plastic (FRP) Shelter roof panel will be installed at Day Tank Storage Area and Dechlorination Plant;
- Pipework of E&M works will be continuous to install at Day Tank Storage Area, Dechlorination Plant and pipe trench;
- Fire Service (FS) and Electrical and Mechanical (E&M) works at Switch Room no.3, UPS Battery Room and Portion 3 will be continuous;
- Internal lining for steeling tanks will be applied continuously;
- Diversion of existing DN250 watermain near Washout Chamber no.2 will be continuous;
- Pumps and pipework of E&M works at Sodium Hypochlorite Storage Compound will be continued to install;
- Canopy over unloading bay at Sodium Hypochlorite Storage Compound will be installed; and
- Laying cable and installing Building Service (BS) and FS services will be continuous.

Environmental Monitoring and Audit Works

4. EM&A works for the Project was performed in accordance with the Final EM&A Manual and the monitoring results were checked and reviewed. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

5. Summary of the events and action taken in the reporting month is tabulated in **Table I**.

Table I Summary Table for Events Recorded in the Reporting Month

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

1-hour TSP Monitoring

6. All 1-hour TSP monitoring was conducted at AM1 as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

7. All 24-hour TSP monitoring was conducted at AM1 as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Environmental Licenses and Permits

8. Environmental related licenses/permits granted to the Project include the Variation Environmental Permit (VEP), billing account for Disposal of construction waste, Waste Water Discharge license, Chemical Waste Producer License and Construction Noise Permit.

Key Information in the Reporting Month

9. 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
	Number	Nature			
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 for August 09 (Version 1.0)	Submitted to EPD on 14th September 2009 (EP condition 4.4).	No comment	---
Notifications of any summons & prosecutions	0	---	N/A	N/A	---

Future Key Issues

10. Major site activities for the coming month will include:

- FS and BS works at Switch Room No. 2 & 3, Uninterruptible Power Supply (UPS) Battery Room and Portion 3 will be continuous;
- Testing and Commissioning (T&C) on E&M works will be carried on early October 2009;
- Walkway on top of roof truss system at Sodium Hypochlorite Storage Compound will be installed;
- Drainage system at SCISTW will be continuous to construct;
- Canopy over unloading bay at Sodium Hypochlorite Storage Compound will be erected continuously;
- FRP wall panels at Sodium Hypochlorite Storage Compound will be installed by mid

of November 2009;

- Modification of FRP handrails, toe-board and access flooring on top of Sedimentation Tanks will be carried out;
- Laying cable and installing BS & FS services will be continuous;
- FRP working platform at Flow Distribution Chamber will be erected by mid of October 2009; and
- T&C on E&M works will be carried out on mid of October 2009.

11. The future environmental concerns will be mainly on ponding water and surface runoff due to rainy weather; dust emission from concrete breaking and excavation works; and management on waste generated from the works above.

1 INTRODUCTION

Background

1.1 "Harbour Area Treatment Scheme Stage 2A – Construction of Advance Disinfection Facilities at Stonecutters Island Sewage Treatment Works" (hereinafter called "the Project") under Contract No. DC/2007/20 is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). A Final Environmental Impact Assessment (EIA) Report has been prepared in July 2007 to consider the key issues of noise, air quality, water quality, ecological, construction waste and human health risk, and identify possible mitigation measures. The Final EIA Report was endorsed by Environmental Protection Department (EPD) on 8 November 2007 and was included in the EIA register under the EIAO as report no. AEIAR-113/2007. Environmental Monitoring and Audit (EM&A) Manual for the Final EIA Report was also included as part of the Final EIA report in the register. An Environmental Permit (EP) No. EP-295/2007 was issued on 3rd December 2007 for the Project "Harbour Area Treatment Scheme – Provision of Disinfection Facilities at Stonecutters Island Sewage Treatment Works" to the Drainage Services Department (DSD) as Permit Holder. A Variation Environmental Permit (VEP) No. EP-295/2007/A was issued on 20th May 2009 for the variation of condition 1.7 and 3.6 of Pact C. This Project comprises the Construction Phase of the Project "Harbour Area Treatment Scheme – Provision of Disinfection Facilities at Stonecutters Island Sewage Treatment Works".

1.2 The Project comprises mainly the construction of the advance disinfection facilities (ADF) include:

(a) Chlorination system - provision of a sodium hypochlorite solution storage farm and associated dosing system; and

(b) Dechlorination system - provision of a sodium bisulphite storage and associated dosing system.

1.3 The Project site layout plan is shown in **Figure 1.1.**

1.4 The Project will be constructed within the existing sewage treatment works on Stonecutters Island (SCISTW), which is providing Chemically Enhanced Primary Treatment (CEPT) for 1.4 million cubic metres of sewage collected each day through deep tunnels from the HATS Stage 1 catchments (i.e. the whole of Kowloon peninsula, Tseung Kwan O, Kwai Chung, Tsing Yi, Chai Wan and Shau Kei Wan). The design treatment capacity of the SCISTW is 1.7 million cubic metres per day. At present, the plant has no disinfection facility and the CEPT treated effluent is now discharged to the waters southwest of Stonecutters Island through a 1.7 km long outfall.

1.5 The chlorination system of the disinfection facilities would be located within the site boundary of the existing SCISTW (**Figure 1.1** refers). The dechlorination plant would be located adjacent to the existing chamber no. 15 (**Figure 1.1** refers) at the western end of Container Port Road South.

1.6 China Harbour Engineering Company Limited (CHEC) was awarded as the main contractor (hereinafter called "the Contractor") of the Project. Cinotech Consultants Limited (Cinotech) was commissioned by CHEC as the Environmental Team (ET). Dr. Priscilla CHOY of Cinotech was appointed as the ET Leader of the Project in accordance with EP Condition 2.1. Hyder Consulting Limited (Hyder) was employed by DSD to undertaken Independent Environmental Checker (IEC) services of the Project and Mr. Antony Wong of Hyder was appointed as the IEC under EP Condition 2.2.

1.7 The construction works for Portions 1 & 2 and Portions 3 & 4 of the Project were commenced on 18th July 2008 and 18th September 2008 respectively.

1.8 This is the 15th monthly EM&A report summarizing the Construction Phase EM&A works conducted for the Project in September 2009.

Project Organizations

1.9 Different parties with different levels of involvement in the project organization include:

- Project Proponent/ Permit Holder – Drainage Services Department (DSD)
- Engineer's Representative (ER) – Ove Arup & Partners Hong Kong Ltd. (ARUP)
- Contractor – China Harbour Engineering Company Limited (CHEC)
- Environmental Team (ET) – Cinotech Consultants Ltd. (Cinotech)
- Independent Environmental Checker (IEC) – Hyder Consulting Limited (Hyder)

1.10 The responsibilities of respective parties in construction phase are detailed in Sections 1.19 to 1.25 of the Final EM&A Manual.

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

Table 1.1 Key Project Contacts

Party	Role	Name	Position	Phone No.	Fax No.
DSD	Project Proponent/ Permit Holder	Ms. Ada LAI	Engineer	2159 3411	2833 9162
ARUP	Engineer's Representative	Mr. Gary CHEUNG	Resident Engineer	6201 3158	2407 8772
		Mr. Sunny LO	Inspector of Works	6345 0548	
CHEC	Contractor	Mr. T. K. CHEUNG	Project Manager	2741 0191	2741 2772
		Mr. Aaron AU	Site Agent	6345 0754	
		Mr. M. C. LAM	Environmental Officer	9483 0566	
Cinotech	Environmental Team	Dr. Priscilla CHOY	Environmental Team Leader	2151 2089	3107 1388
		Ms. Cherry MAK	Environmental Team Member	2151 2097	
		Mr. Henry LEUNG	Monitoring Team Leader	2151 2087	
Hyder	Independent Environmental Checker	Mr. Antony WONG	Independent Environmental Checker	2911 2744	2805 5028
		Mr. Terence KONG	Project Manager	2911 2730	

Party	Role	Name	Position	Phone No.	Fax No.
		Ms. Selina LEUNG	Independent Environmental Checker Representative	2911 2745	

Construction Programme

1.12 The site activities undertaken in the reporting month were:

- FRP Shelter roof panel will be installed at Day Tank Storage Area and Dechlorination Plant;
- Pipework of E&M works will be continuous to install at Day Tank Storage Area, Dechlorination Plant and pipe trench;
- FS and E&M works at Switch Room no.3, UPS Battery Room and Portion 3 will be continuous;
- Internal lining for steeling tanks will be applied continuously;
- Diversion of existing DN250 watermain near Washout Chamber no.2 will be continuous;
- Pumps and pipework of E&M works at Sodium Hypochlorite Storage Compound will be continued to install;
- Canopy over unloading bay at Sodium Hypochlorite Storage Compound will be installed; and
- Laying cable and installing Building Service (BS) and FS services will be continuous.

Summary of EM&A Requirements

1.13 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 Final EIA report; and
- Environmental requirements in contract documents.

1.14 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 5 of this report.

1.15 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 Requirements

2.1 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted in accordance with the Final EM&A Manual to monitor the air quality. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

2.2 According to the Final EM&A Manual, two designated monitoring stations, AM1 and AM2 were selected for air quality monitoring, as shown in **Figure 1.2**. **Table 2.1** describes the locations of the air quality monitoring stations.

Table 2.1 Locations for Air Quality Monitoring

Monitoring Stations	Location	Status
AM 1	Rooftop, Block A of Government Dockyard	Impact Monitoring

2.3 Due to the sensitivity of the military installations within Barracks building, the People's Liberation Army (PLA) had declined ET' s request for setting up the air quality monitoring station AM2 (Ngong Shuen Chau Barracks – Group 2). Considering there is no other air sensitive receiver within the EIA study area (500m from the Project site boundary of Portions 3 & 4) and no significant environmental impact form the project is anticipated, the ET Leader proposed to cancel all air quality monitoring works at the designated monitoring station AM2. The proposal has been verified by IEC on 19th August 2008 and approved by EPD on 2nd September 2008.

2.4 No air quality monitoring will be conducted at AM2 for the Project.

Monitoring Equipment

2.5 **Table 2.2** summarizes the equipment used for the air quality monitoring in the reporting month.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Qty.
HVS	Graseby GMW 2310 HVS, Model GS-2310105-1	1
Calibrator	Tisch Environmental, Inc.; Model no. TE-5025A	1
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	1

Monitoring Parameters, Frequency and Duration

2.6 **Table 2.3** summarizes the monitoring parameters and frequencies of impact air quality monitoring for the whole construction period.

Table 2.3 Impact Air Quality Monitoring Parameters, Frequency and Duration

Parameters	Frequency
1-hr TSP	Three times / 6 days
24-hr TSP	Once / 6 days

2.7 1-hr TSP and 24-hr TSP were only conducted at AM1 in the reporting month.

Monitoring Methodology and QA/QC Procedure

Instrumentation

2.8 High volume samplers (HVS) completed 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

2.9 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 samplers 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

2.10 Fiberglass filters (G810) were used [Note: these filters have a collection efficiency of larger than 99% for particles of 0.3 mm diameter]. A HOKLAS accredited laboratory, Wellab Ltd. (HOKLAS 083), was responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for Cinotech's monitoring team.

2.11 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 ±5%. A convenient working RH was 40%.

2.12 Wellab Ltd. has a comprehensive quality assurance and quality control programmes.

Operating/Analytical Procedures

2.13 Operating/analytical procedures for the air quality monitoring were highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the two HVS were properly set (between 1.1 m^3/min. and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- The power supply was checked to ensure the samplers worked properly.
- On sampling, the samplers were operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated 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. The applied pressure should be sufficient 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).
- 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 temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±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

2.14 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 equipments and necessary power supply are in good working condition.
- All HVS were calibrated (five point calibration) using Calibration Kit prior to the commencement of the baseline monitoring.

Results and Observations

2.15 All 1-hour TSP monitoring at AM1 were conducted as scheduled in the reporting month. The results of 1-hour TSP ranged between 15μg/m^3 and 164μg/m^3. No Action/Limit Level exceedance was recorded.

2.16 All 24-hour TSP monitoring at AM1 were conducted as scheduled in the reporting month. The results of 24-hour TSP ranged between 23μg/m^3 and 79μg/m^3. No Action/Limit Level exceedance was recorded.

2.17 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices D** and **E** respectively.

2.18 Wind data monitoring equipment has been installed at AM1 (Rooftop, Block A of Government Dockyard) for logging wind speed and wind direction. These wind data for the reporting month is summarized in **Appendix F**.

2.19 The environmental monitoring schedules for the reporting month and the tentative schedule for the next month are shown in **Appendix C**.

3 NOISE

3.1 One construction noise monitoring station, NM1 - Barrack Buildings, was designated in the Final EM&A Manual.

3.2 Due to the sensitivity of the military installations within Barracks building, the People's Liberation Army (PLA) had declined ET' s request for setting up the construction noise monitoring station NM1 (Barracks Buildings). Considering there is no other noise sensitive receiver within the EIA study area (300m from the Project site boundary of Portions 3 & 4) and no significant environmental impact form the project is anticipated, the ET Leader proposed to cancel all noise monitoring works at the designated monitoring station NM1. The proposal has been verified by IEC on 19th August 2008 and approved by EPD on 2nd September 2008.

3.3 No construction noise monitoring will be conducted for the Project.

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 2nd, 9th, 17th, 24th and 29th September 2009 by the representatives of ER, the Contractor and the ET. A joint site audit with the representatives of IEC, ER, the Contractor and the ET was carried out on 9th September 2009. No non-compliance was observed during the site audits.

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

- No construction noise monitoring work was conducted in the reporting month.
- According to the observation in weekly site audit sessions, no excessive noise was notified from the Project.

Status of Environmental Licensing and Permitting

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

Status of Waste Management

4.5 The Construction and Demolition (C&D) materials generated in the reporting month were mainly excavated materials regarded as inert C&D materials that disposed of as Public Fill. 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 Final EIA Report and the Final EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented

during the construction phase. A summary of the EMIS is provided in **Appendix J**.

Table 4.1 Summary of Environmental Licensing and Permit Status

Permit / License No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-295/2007	03/12/07	N/A	The Project involves construction and operation of disinfection facilities (chlorination/dechlorination) within the existing Stonecutters Island Sewage Treatment Works. The disinfection facilities include storage, dosing and associated pipeline systems for sodium hypochlorite sodium bisulphite.	Superseded
EP-295/2007/A	20/5/09	N/A		Valid
Billing Account for Disposal of Construction Waste				
7007138	13/05/08	N/A	Disposal of Construction waste.	Valid
Chemical Waste Producer Number				
WPN: 5213-269-C2397-22	04/09/08	N/A	Disposal of Chemical Waste including lubricating oil, spent batteries and etc.	Valid
Waste Water Discharge License				
EP760/269/0133011	14/07/08	31/07/13	Discharge of industrial trade effluent and all other wastewater arising from Construction site at Stonecutters Island Sewage Treatment Works, Kowloon (Contract No. DC/2007/20 HATS 2A-Construction of Advance Disinfection Facilities at SCISTW) to communal storm drain after solid removal.	Valid
EP760/269/0133011a	27/10/08	31/10/13	Discharge of industrial trade effluent and all other wastewater arising from Construction site of Harbour Area Treatment Scheme 2 A (Portions 3 & 4), at Container Port Road South, Stonecutters Island, Kowloon to communal storm drain after solid removal.	Valid
Construction Noise Permit (CNP)				
GW-RW0057-09	1/3/09	31/8/09	*Location:* Construction site in Stonecutters Island Sewage Treatment Works at Stonecutters Island, Kowloon. *Day and hours for the use of PMEs:* 19:00-23:00 on any day not being a general holiday and 07:00-19:00 on general holidays including Sundays	Expired
GW-RW0234-09	1/7/09	30/11/09	*Location:* Construction site in Stonecutters Island Sewage Treatment Works at Stonecutters Island, Kowloon. *Day and hours for the use of PMEs:* 19:00-23:00 on any day not being a general holiday and 07:00-19:00 on general holidays including Sundays	Valid

Permit / License No.	Valid Period		Details	Status
	From	To		
GW-RW0316-09	1/8/09	31/12/09	*Location:* Construction site in Stonecutters Island Sewage Treatment Works at Stonecutters Island, Kowloon. *Day and hours for the use of PMEs:* 00:00-24:00 on any day not being a general holiday and 19:00-2400 & 00:00-07:00 on general holidays including Sundays	Valid
GW-RW0375-09	31/8/09	12/9/09	*Location:* Construction site in Stonecutters Island Sewage Treatment Works at Stonecutters Island, Kowloon. *Day and hours for the use of PMEs:* 19:00-2400 and 00:00-07:00 on any day	Expired

4.7 During the weekly environmental site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 4.2**.

Table 4.2 Observations and Recommendations of Site Audit

Parameters	Date	Observations	Remedial Actions
Water Quality	02 Sep 09	*Observation* Sand was observed near the gully at the yard behind the NaOCl Storage Compound. Contractor was reminded to clear it.	The situation was observed improved/ rectified in audit session 90909
	09 Sep 09	*Observation* Stagnant water was accumulation in the tranch near NaOCl Storage Compound. Contractor was reminded to pump the water out or other measures.	The situation was observed improved/ rectified in audit session 90917.
	09 Sep 09	*Observation* Sand and concrete debris were accumulated in the U-channel at chamber 15. Contractor was reminded to clear it for the protection of storm drain system.	The situation was observed improved/ rectified in audit session 90924
	29 Sep 09	*Reminder* All runoff should be treated with sediment tank prior to discharge to public drains.	This item will be followed up in the coming audit sessions.
Air Quality	02 Sep 09	*Observation* Dusty paved road was observed at the yard behind NaOCl Storage Compound and Day Tank Storage Area. Contractor was reminded to clear it up.	The situation was observed improved/ rectified in audit session 90909
	09 Sep 09	*Observation* Dusty paved road was observed at the NaOCl Storage Compound. Contractor was reminded to clear it up as soon as possible.	The situation was observed improved/ rectified in audit session 90917

Parameters	Date	Observations	Remedial Actions
	17 Sep 09	*Observation* Dusty road was observed adjacent to the NaOCl Storage Compound. Contractor was reminded to clear it up after daily work.	The situation was followed-up in audit session 90924
	24 Sep 09	*Reminder* Soil was observed on the road adjacent to NaOCl Storage Chamber and near the U-channel of Day Tank Storage Area. The Contractor was reminded to clear it as soon as possible.	The situation was observed improved/ rectified in audit session 90929
Waste / Chemical Management	09 Sep 09	*Observation* Chemical containers were accumulated at Day Tank Storage Area. Contractor was reminded to provide drip tray and proper label for the containers.	The situation was observed improved/ rectified in audit session 90917
	17 Sep 09	*Reminder* The packing material should be cleared up regularly at NaOCl Storage Compound for the maintenance of site tidiness.	The situation was observed improved/ rectified in audit session 90924
	24 Sep 09	*Observation* Chemical containers were placed at the staircase of Sedimentation Tank. The Contractor was reminded to relocate them to adequate storage area and provide drip tray under them.	The situation was observed improved/ rectified in audit session 90929

Table 4.3 Observations and Recommendations of Site Audit Followed up for Previous Month

Parameters	Date	Observations	Remedial Actions
Water Quality	26 Aug 09	C&D waste was accumulated inside the catch pit at Day Tank Storage Area. Contractor was reminded to clear it for the drainage protection.	The situation was observed improved/ rectified in audit session 90902

Implementation Status of Event/Action Plans

4.8 The Event Action Plans for air quality and noise are presented in **Appendix I**.

1-hr TSP

4.9 No Action/Limit Level exceedance was recorded in the reporting month.

24-hr TSP

4.10 No Action/Limit Level exceedance was recorded in the reporting month.

Noise

4.11 No Action Level exceedance was recorded in the reporting month.

Summary of Complaint and Prosecution

4.12 No environmental related complaint, prosecution or notification of summons was received in the reporting month.

4.13 There was no environmental complaint, prosecution or notification of summons received since the Project commencement. The Complaint Log is attached in **Appendix M**.

5 FUTURE KEY ISSUES

Key Issues for the Coming Month

5.1 Key issues to be considered in the coming month include:

- Surface runoff from the Site area due to construction works and rain;
- Formation of ponding/ stagnant water on site;
- Dust emission from concrete breaking, excavation and loading and unloading dusty materials;
- Noise nuisance from operation of equipment and machinery on site;
- Maintenance of de-silting facilities and drainage system, such as U-channels;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Larviciding against mosquito breeding in stagnant water should be carried out at least on a weekly basis; 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 L**. The major construction activities in the coming month will include:

- FS and BS works at Switch Room No. 2 & 3, Uninterruptible Power Supply (UPS) Battery Room and Portion 3 will be continuous;
- Testing and Commissioning (T&C) on E&M works will be carried on early October 2009;
- Walkway on top of roof truss system at Sodium Hypochlorite Storage Compound will be installed;
- Drainage system at SCISTW will be continuous to construct;
- Canopy over unloading bay at Sodium Hypochlorite Storage Compound will be erected continuously;
- FRP wall panels at Sodium Hypochlorite Storage Compound will be installed by mid of November 2009;
- Modification of FRP handrails, toe-board and access flooring on top of Sedimentation Tanks will be carried out;
- Laying cable and installing BS & FS services will be continuous;
- FRP working platform at Flow Distribution Chamber will be erected by mid of October 2009; and
- T&C on E&M works will be carried out on mid of October 2009.

6 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

6.1 Environmental monitoring works were conducted regularly and site inspections were conducted on a weekly basis in the reporting month. The results were reviewed and checked.

1-hour TSP Monitoring

6.2 All 1-hour TSP monitoring was conducted at AM1 as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

6.3 All 24-hour TSP monitoring was conducted at AM1 as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Complaint and Prosecution

6.4 No environmental prosecution and complaint was received in the reporting month.

Recommendations

6.5 According to the environmental audits performed in the reporting month, the following recommendations were made:

Water Impact

- To ensure proper use and maintenance of the de-silting facilities and drainage system;
- To avoid formation of ponding/ stagnant water on site;
- To carry out larviciding regularly against mosquito breeding;
- To clear the silt and sand in open U-channel regularly;
- To well maintain the drainage system inside and around the Site area; and
- To prevent surface runoff into public area or drainage channel.

Dust Impact

- To provide water spraying regularly on stockpiles of dusty materials, loading/ unloading of dusty materials and dried site areas;
- To remain good site practice on handling excavated or dusty material for dust suppression, e.g. covering by impervious materials;
- To check and maintain the mechanical equipments regularly to avoid black smoke emission; and
- To provide adequate enclosure, i.e. three sides and top covers, for the cement mixing

works for dust suppression.

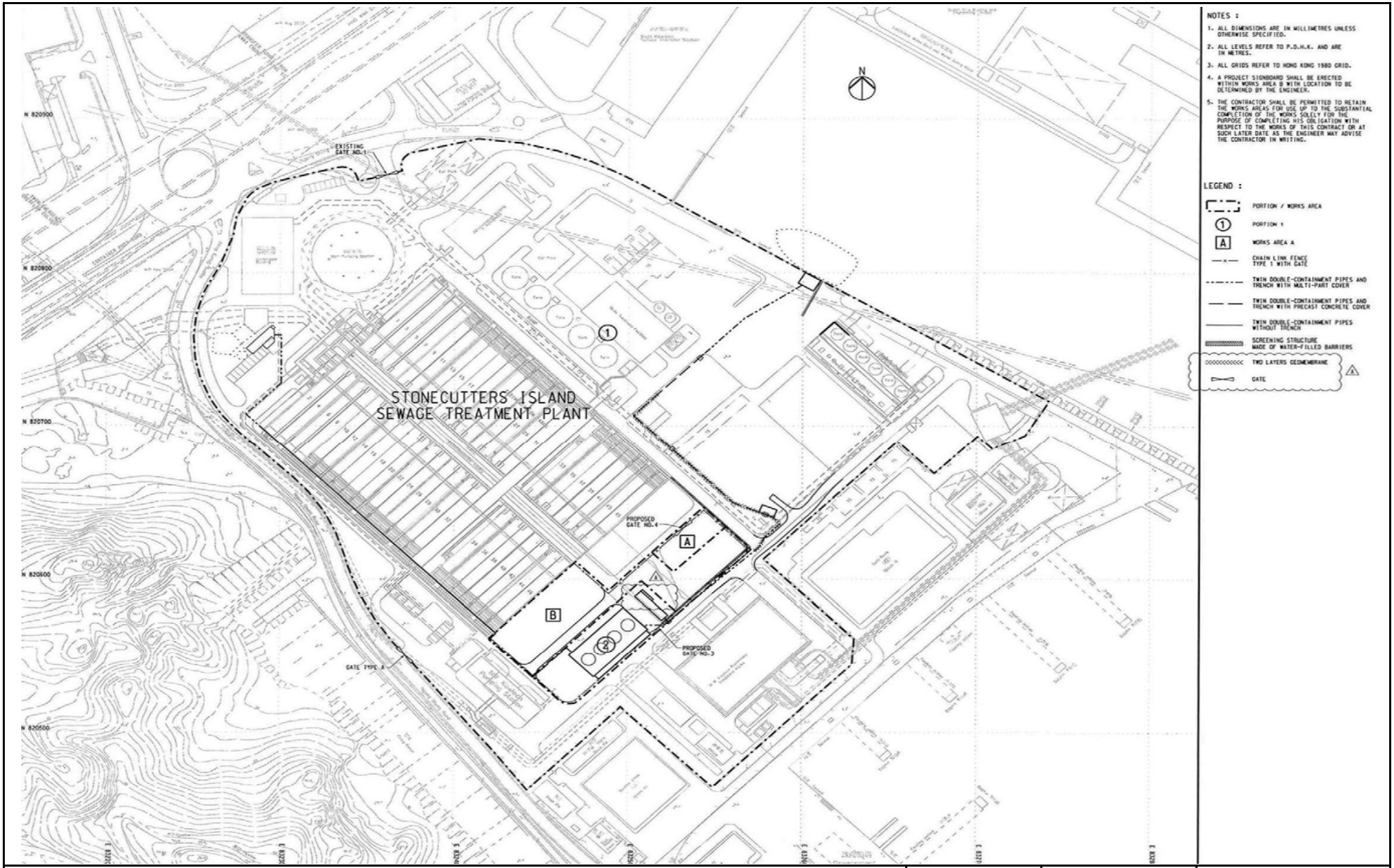
Noise Impact

- To space out noisy equipments and position as far away as possible from sensitive receivers;
- To provide adequate lubricant on mechanical equipments to reduce frictional noise; and
- To well maintain the mechanical equipments / machineries to avoid abnormal noise nuisance.

Waste / Chemical Management

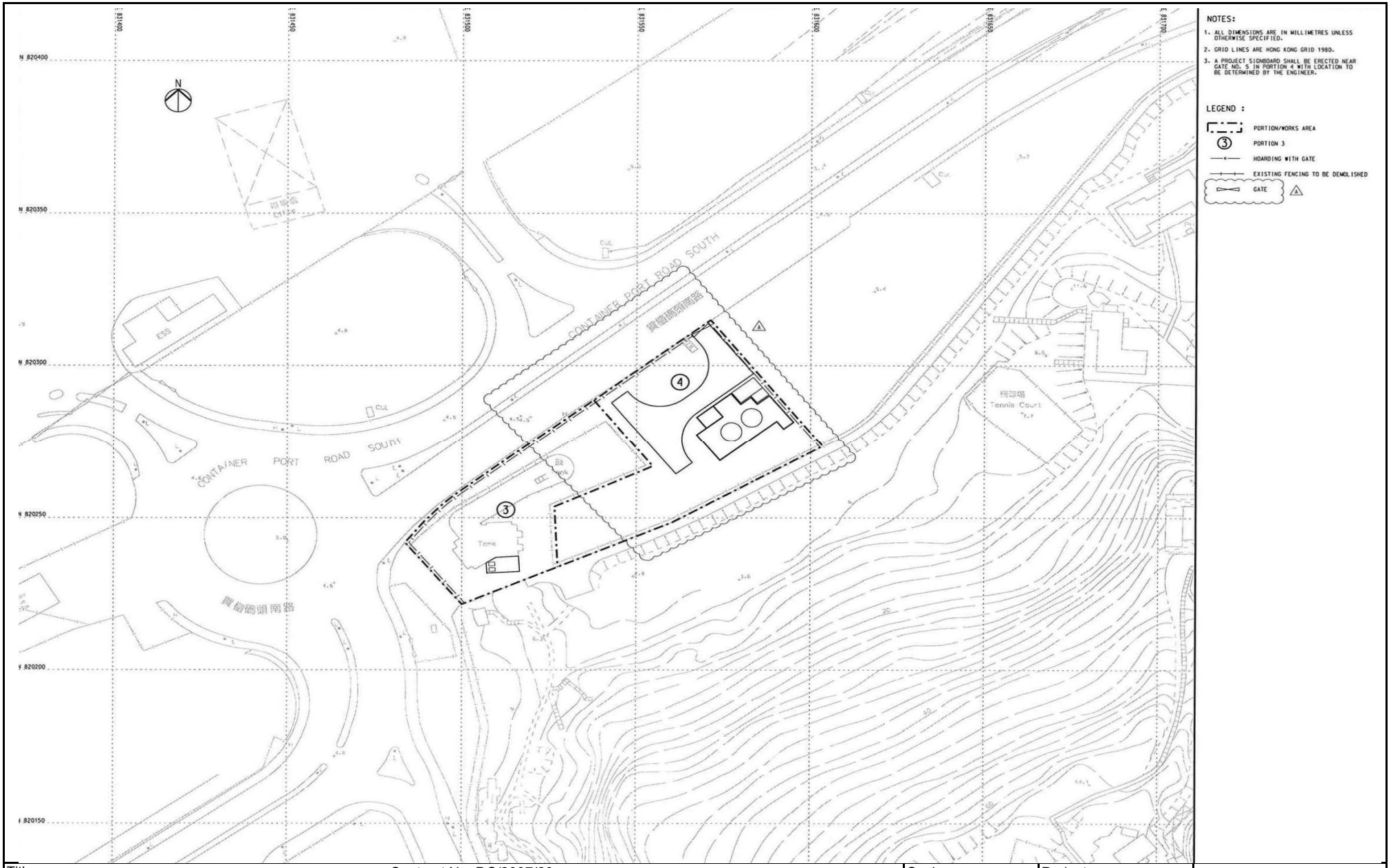
- To provide proper rubbish bins / skips for waste collection;
- To provide proper storage area or drip trays for oil containers on site;
- To avoid and check for any accumulation of waste materials or rubbish on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the equipment; and
- To well maintain the equipments and drip trays to avoid oil leakage.

FIGURES



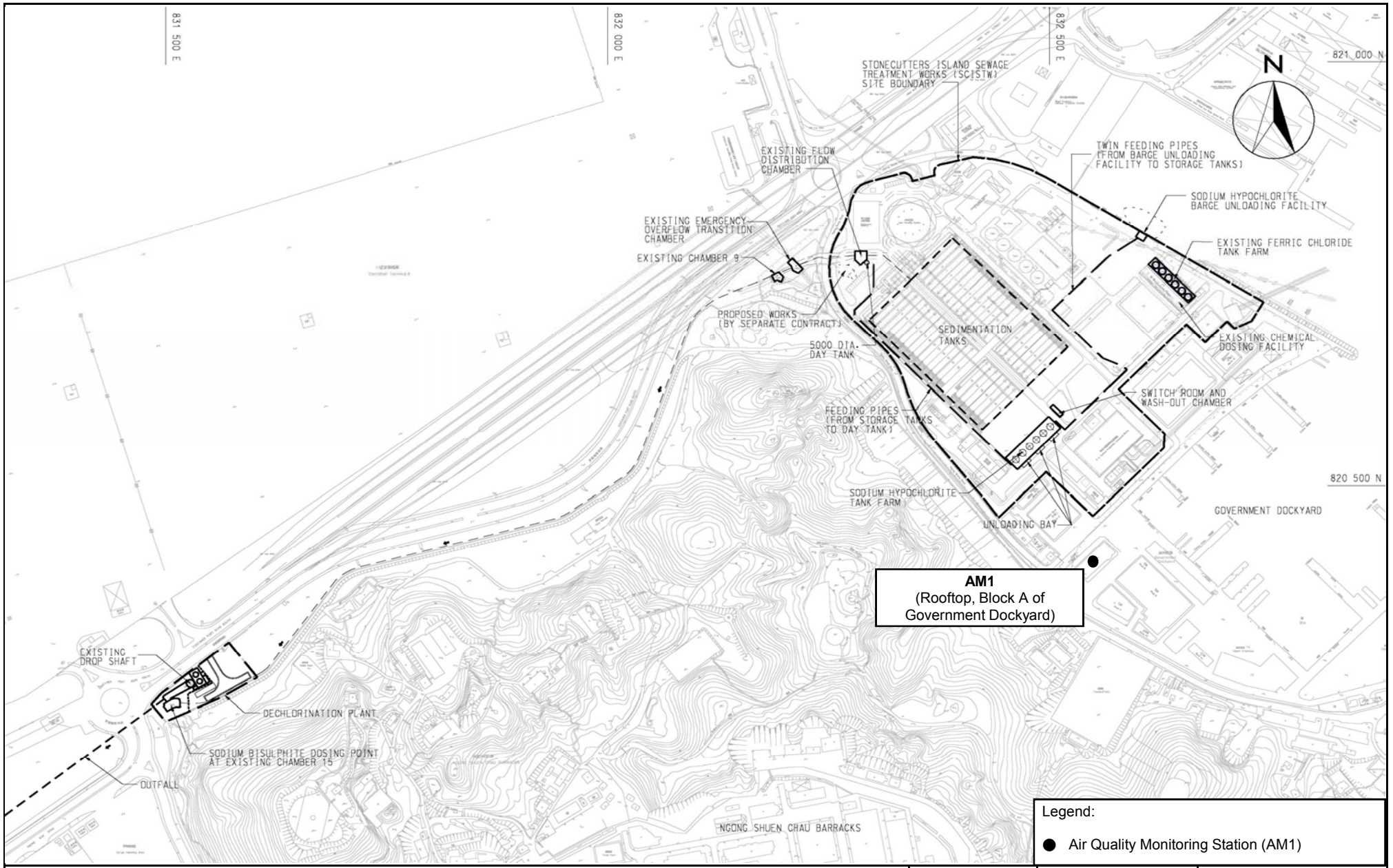
Title	Contract No. DC/2007/20	Scale	Project
HARBOUR AREA TREATMENT SCHEME STAGE 2A - CONSTRUCTION OF ADVANCE DISINFECTION FACILITIES AT STONECUTTERES ISLAND SEWAGE TREATMENT WORKS		N.T.S	No. MA8009
Project Site Layout Plan (Page 1 of 2)		Date Jun-08	Figure 1.1

CINOTECH



Title	Contract No. DC/2007/20	Scale	Project
HARBOUR AREA TREATMENT SCHEME STAGE 2A - CONSTRUCTION OF ADVANCE DISINFECTION FACILITIES AT STONECUTTERES ISLAND SEWAGE TREATMENT WORKS		N.T.S	No. MA8009
Project Site Layout Plan (Page 2 of 2)		Date Jun-08	Figure 1.1

CINOTECH



Title

Contract No. DC/2007/20

HARBOUR AREA TREATMENT SCHEME STAGE 2A - CONSTRUCTION OF ADVANCE DISINFECTION FACILITIES AT STONECUTTERES ISLAND SEWAGE TREATMENT WORKS

LOCATIONS OF ENVIRONMENTAL MONITORING STATION

Scale	Project No.
N.T.S	MA8009
Date	Figure
Sep-08	1.2

CINOTECH

APPENDIX A
ACTION AND LIMIT LEVELS

APPENDIX A - Action and Limit Levels

Table A-1 Action and Limit Levels for 1-Hour TSP

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM1	307	500

Table A-2 Action and Limit Levels for 24-Hour TSP

Location	Action Level, µg/m^3	Limit Level, µg/m^3
AM1	158	260

APPENDIX B
COPIES OF CALIBRATION CERTIFCATES

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA8009/17/0008

Station: Rooftop of Block A, Government Dockyard — Operator: WK

Date: 24-Jul-09 — Next Due Date: 23-Sep-09

Equipment No.: A-01-17 — Serial No. 3460

Ambient Condition			
Temperature, Ta (K)	302.1	Pressure, Pa (mmHg)	754.7

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0575	Intercept, bc	0.0395
Last Calibration Date:	6-Mar-09	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	5-Mar-10	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.5	3.36	57.68	7.8	2.76
2	9.4	3.03	52.09	6.4	2.50
3	7.8	2.76	47.39	4.8	2.17
4	5.3	2.28	38.94	3.2	1.77
5	3.2	1.77	30.10	1.8	1.33

By Linear Regression of Y on X

Slope , mw = 0.0525 — **Intercept, bw =** -0.2677

Correlation coefficient* = 0.9984

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ **4.04**

Remarks:

Conducted by: WK Tang — Signature: Kwai — Date: 24/7/09

Checked by: [illegible] — Signature: [illegible] — Date: 24 Jul 2009

High-Volume TSP Sampler
5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA8009/17/0009

Station: Rooftop of Block A, Government Dockyard Operator: WK

Date: 23-Sep-09 Next Due Date: 22-Nov-09

Equipment No.: A-01-17 Serial No. 3460

Ambient Condition			
Temperature, Ta (K)	303.1	Pressure, Pa (mmHg)	758.5

Orifice Transfer Standard Information					
Equipment No.:	A-04-06	Slope, mc	0.0575	Intercept, bc	0.0395
Last Calibration Date:	6-Mar-09	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	5-Mar-10	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Calibration Point	Orfice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	11.5	3.36	57.73	7.8	2.77
2	9.7	3.09	52.97	6.5	2.53
3	7.5	2.71	46.49	4.9	2.19
4	5.4	2.30	39.35	3.1	1.74
5	3.2	1.77	30.13	1.9	1.37

By Linear Regression of Y on X

Slope , mw = 0.0519 **Intercept, bw =** -0.2329

Correlation coefficient* = 0.9978

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.07

Remarks:

Conducted by: WK. Tang Signature: [signature] Date: 23/9/09

Checked by: [signature] Signature: [signature] Date: 23 Sep 2009

TISCH ENVIROMENTAL, INC.
145 SOUTH MIAMI AVE.
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AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 06, 2009 Rootsmeter S/N 9833640 Ta (K) - 296
Operator Tisch Orifice I.D. - 0999 Pa (mm) - 747.20

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3890	3.2	2.00
2	NA	NA	1.00	0.9850	6.3	4.00
3	NA	NA	1.00	0.8810	7.8	5.00
4	NA	NA	1.00	0.8410	8.6	5.50
5	NA	NA	1.00	0.6950	12.5	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9917	0.7139	1.4113		0.9957	0.7168	0.8874
0.9876	1.0026	1.9959		0.9916	1.0067	1.2549
0.9854	1.1185	2.2315		0.9894	1.1231	1.4030
0.9844	1.1706	2.3405		0.9884	1.1753	1.4715
0.9792	1.4090	2.8227		0.9832	1.4147	1.7747
Qstd slope (m) =		2.03154		Qa slope (m) =		1.27212
intercept (b) =		-0.03970		intercept (b) =		-0.02496
coefficient (r) =		0.99999		coefficient (r) =		0.99999
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

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 = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

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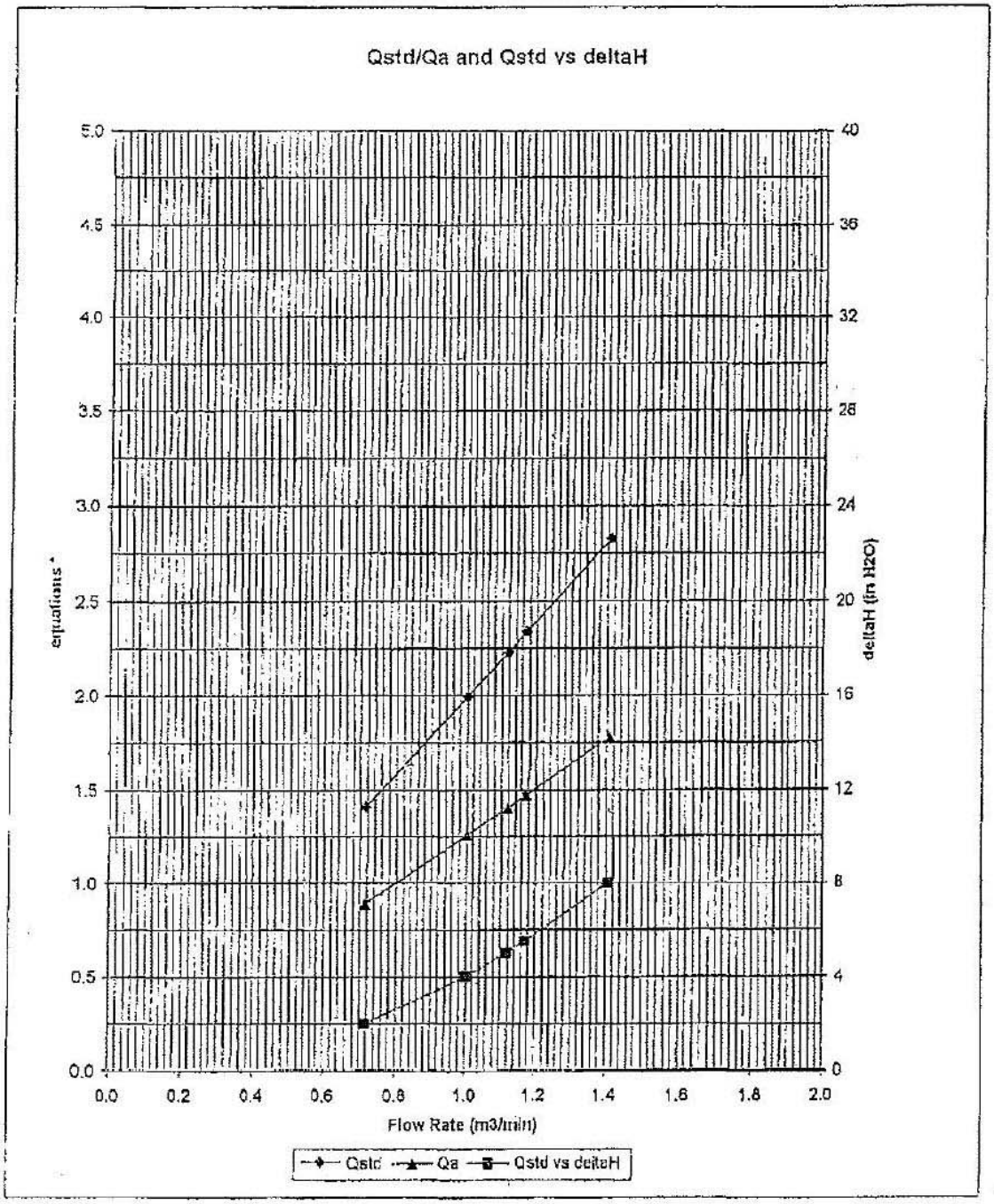
AIR POLLUTION MONITORING EQUIPMENT



* y-axis equations:

Qstd series: $\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$

Qa series: $\sqrt{(\Delta H\ (Ta\ /\ Pa))}$

WELLAB 匯
Testing and Research 力

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18 On Lai Street, Shatin, N.T., Hong Kong
Tel: 2898 7388 Fax: 2898 7076
Website: http://www.wellab.com.hk
E-mail: wellab@wellab.com.hk

TEST REPORT

APPLICANT:	**Cinotech Consultants Limited** **Room 1710, Technology Park,** **18 On Lai Street,** **Shatin, NT, Hong Kong**	Test Report No.: Date of Issue: Date Received: Date Tested: Date Completed:	C/09/90603A 2009-06-03 2009-06-03 2009-06-03 2009-06-03
ATTN:	**Mr. Henry Leung**	Page:	1 of 2

Certificate of Calibration

Item for calibration:

Description	: Weather Monitor II
Manufacturer	: Davis Instruments
Model No.	: 7440
Serial No.	: MC20813A11

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 59%

Test Specifications:

1. Performance check of anemometer
2. Performance check of wind direction sensor

Methodology:

In-house method with reference anemometer (RS232 Integral Vane Digital Anemometer)

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

PATRICK TSE
Laboratory Manager

WELLAB 匯
Testing and Research 力

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18 On Lai Street, Shatin, N.T., Hong Kong
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E-mail: wellab@wellab.com.hk

TEST REPORT

Test Report No.:	C/09/90603A
Date of Issue:	2009-06-03
Date Received:	2009-06-03
Date Tested:	2009-06-03
Date Completed:	2009-06-03

Results:

1. Performance check of anemometer

Air Velocity, m/s		Difference D (m/s)
Instrument Reading (V1)	Reference Value (V1)	D = V1 – V2
2.00	2.00	0.00

2. Performance check of wind direction sensor

Wind Direction (°)		Difference D (°)
Instrument Reading (W1)	Reference Value (W2)	D = W1 - W2
0.0	0.0	0.0
45.3	45.0	0.3
90.7	90.5	0.2
134.8	135.0	-0.2
180.1	180.0	0.1
225.6	225.0	0.6
270.4	270.0	0.4
315.0	315.0	0.0
359.7	360.0	-0.3

**********END OF REPORT**********

APPENDIX C
ENVIRONMENTAL MONITORING SCHEDULES

Contract No. DC/2007/20
HATS Stage 2A – Construction of Advance Disinfection Facilities at SCISTW
Impact Environmental Monitoring Schedule for September 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Sep	2-Sep	3-Sep	4-Sep	5-Sep
		1hr TSP at AM1	1hr TSP at AM1 24hr TSP at AM1	1hr TSP at AM1		
6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep
		1hr TSP at AM1 24hr TSP at AM1	1hr TSP at AM1	1hr TSP at AM1		
13-Sep	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep
	24hr TSP at AM1	1hr TSP at AM1		1hr TSP at AM1	1hr TSP at AM1	24hr TSP at AM1
20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep
	1hr TSP at AM1		1hr TSP at AM1	1hr TSP at AM1	24hr TSP at AM1	
27-Sep	28-Sep	29-Sep	30-Sep			
	1hr TSP at AM1	1hr TSP at AM1				

AM1 - Air Quality monitoring station at Rooftop of Block A, Government Dockyard

Contract No. DC/2007/20

HATS Stage 2A – Construction of Advance Disinfection Facilities at SCISTW

Tentative Impact Environmental Monitoring Schedule for October 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28-Sep	29-Sep	30-Sep	**1-Oct**	2-Oct	3-Oct	4-Oct
	1hr TSP at AM1	1hr TSP at AM1			1hr TSP at AM1 24hrs TSP at AM1	
5-Oct	6-Oct	**7-Oct**	8-Oct	9-Oct	10-Oct	11-Oct
	1hr TSP at AM1			1hr TSP at AM1 24hrs TSP at AM1	1hr TSP at AM1	
12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct
		1hr TSP at AM1	1hr TSP at AM1 24hrs TSP at AM1	1hr TSP at AM1		
19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct
		1hr TSP at AM1 24hrs TSP at AM1	1hr TSP at AM1	1hr TSP at AM1		
26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	1-Nov
	24hrs TSP at AM1	1hr TSP at AM1	1hr TSP at AM1		1hr TSP at AM1	

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

AM1 - Air monitoring station at Rooftop of Block A, Government Dockyard

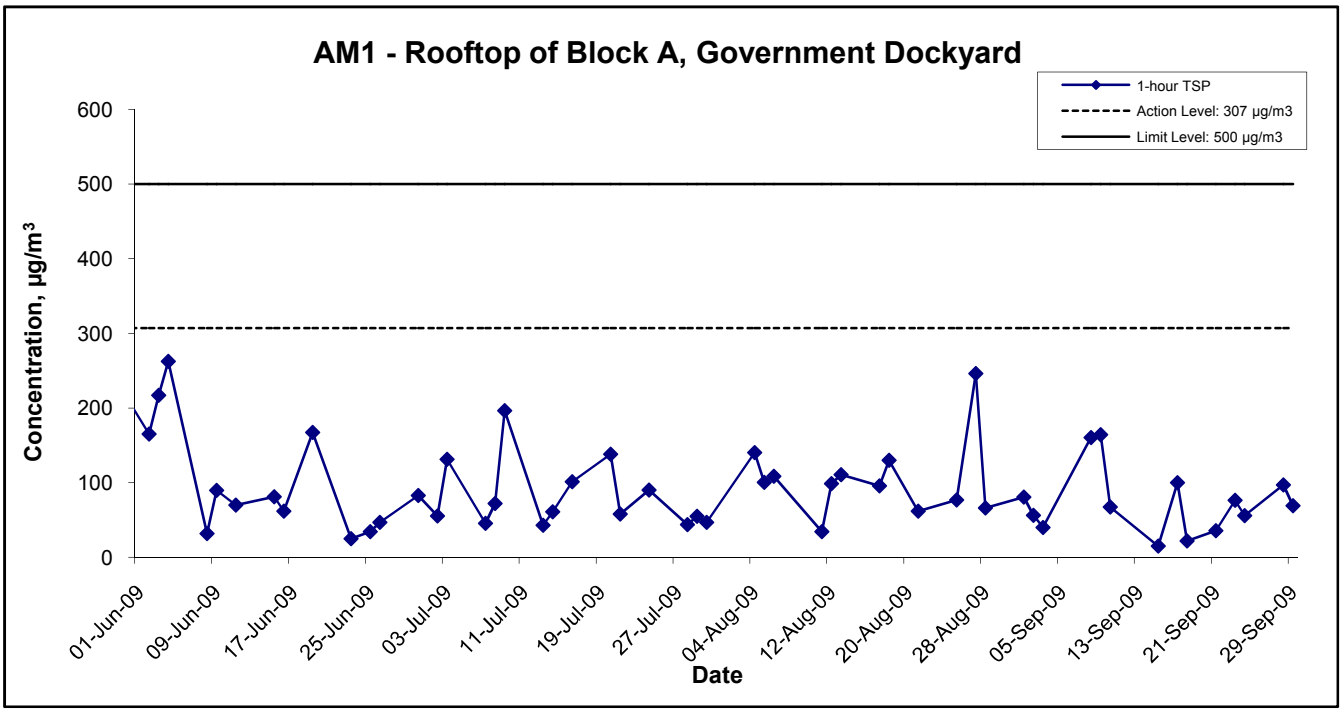
APPENDIX D
1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix D - 1-hour TSP Monitoring Results

Station AM1 - Rooftop of Block A, Government Dockyard

Date	Sampling Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure (Pa)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. ($\mu g/m^3$)
					Initial	Final		Initial	Final		Initial	Final			
1-Sep-09	09:00	Sunny	301.9	759.6	3.4640	3.4699	0.0059	7153.0	7154.0	1.0	1.22	1.21	1.22	72.9	80.9
2-Sep-09	09:00	Sunny	302.9	759.1	3.1800	3.1841	0.0041	7154.0	7155.0	1.0	1.21	1.21	1.21	72.8	56.3
3-Sep-09	11:00	Sunny	303.8	756.9	3.2209	3.2238	0.0029	7179.0	7180.0	1.0	1.21	1.21	1.21	72.6	39.9
8-Sep-09	09:00	Sunny	302.6	759.1	3.1721	3.1838	0.0117	7180.0	7181.0	1.0	1.21	1.21	1.21	72.8	160.7
9-Sep-09	10:00	Sunny	300.8	758.6	3.3495	3.3615	0.0120	7205.0	7206.0	1.0	1.22	1.22	1.22	73.0	164.4
10-Sep-09	09:00	Cloudy	302.2	758.4	3.1874	3.1923	0.0049	7206.0	7207.0	1.0	1.21	1.21	1.21	72.8	67.3
15-Sep-09	16:00	Cloudy	300.1	755.1	3.2570	3.2581	0.0011	7231.0	7232.0	1.0	1.22	1.21	1.22	72.9	15.1
17-Sep-09	09:00	Cloudy	301.2	762.3	3.1746	3.1819	0.0073	7232.0	7233.0	1.0	1.22	1.22	1.22	73.1	99.9
18-Sep-09	09:00	Sunny	302.6	760.9	3.3071	3.3087	0.0016	7233.0	7234.0	1.0	1.22	1.21	1.21	72.9	21.9
21-Sep-09	09:00	Sunny	302.4	760.0	3.2908	3.2934	0.0026	7258.0	7259.0	1.0	1.21	1.21	1.21	72.9	35.7
23-Sep-09	09:00	Sunny	300.1	760.4	3.2410	3.2466	0.0056	7259.0	7260.0	1.0	1.22	1.22	1.22	73.1	76.6
24-Sep-09	09:00	Sunny	302.5	760.3	3.4006	3.4047	0.0041	7260.0	7261.0	1.0	1.22	1.22	1.22	73.4	55.9
28-Sep-09	11:00	Cloudy	302.3	756.2	3.3307	3.3378	0.0071	7285.0	7286.0	1.0	1.22	1.22	1.22	73.2	97.0
29-Sep-09	09:00	Cloudy	297.6	757.0	3.3937	3.3988	0.0051	7286.0	7287.0	1.0	1.23	1.23	1.23	73.8	69.1
														Min	15.1
														Max	164.4
														Average	74.3

1-hr TSP Concentration Levels



Title: Contract No. DC/2007/20 HATS Stage 2A – Construction of Advance Disinfection Facilities at SCISTW Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Sep 09	Project No.: MA8009 Appendix: D	CINOTECH

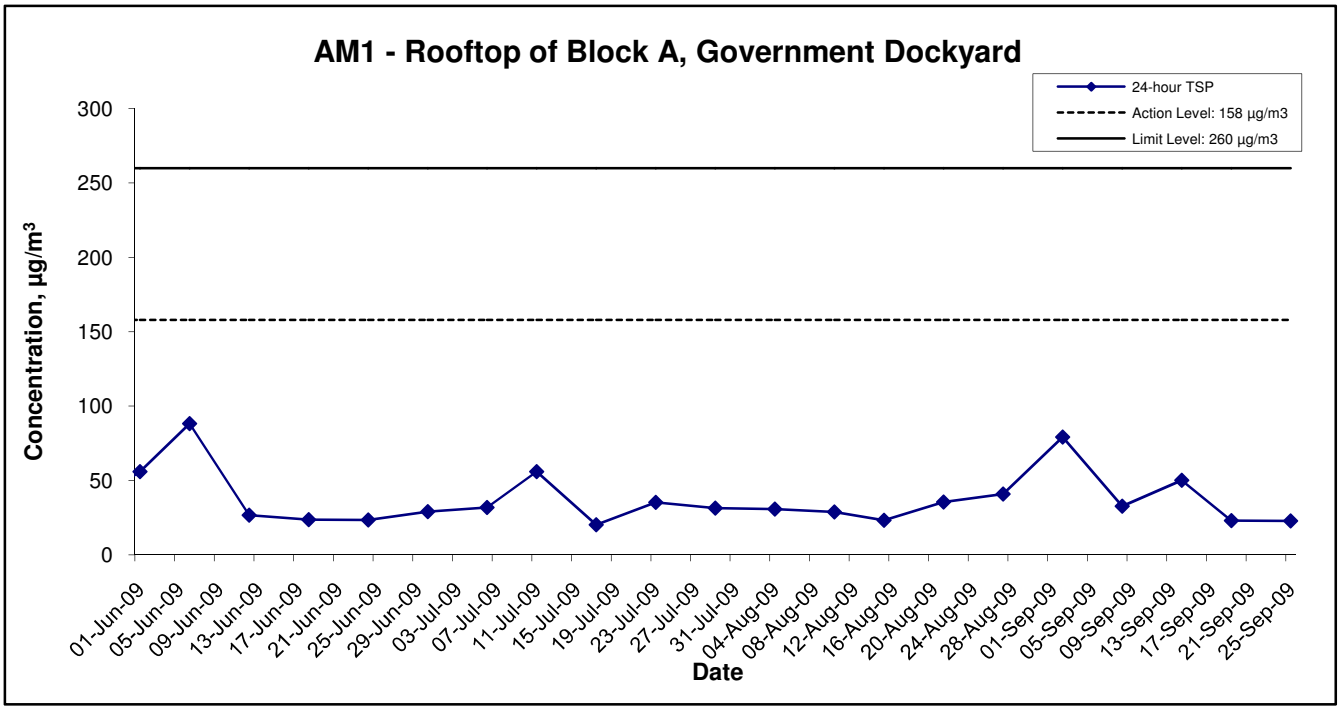
APPENDIX E
24-HOURS TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

Appendix E - 24-hour TSP Monitoring Results

Station AM1 - Rooftop of Block A, Government Dockyard

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure (Pa)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Conc. (µg/m^3)
				Initial	Final		Initial	Final		Initial	Final			
2-Sep-09	Sunny	303.1	758.9	3.3551	3.4934	0.1383	7155.0	7179.0	24.0	1.21	1.21	1.21	1746.0	79.2
8-Sep-09	Sunny	303.1	758.7	3.3007	3.3575	0.0568	7181.0	7205.0	24.0	1.21	1.21	1.21	1745.8	32.5
14-Sep-09	Cloudy	300.3	756.8	3.3239	3.4114	0.0875	7207.0	7231.0	24.0	1.22	1.22	1.22	1751.0	50.0
19-Sep-09	Sunny	303.3	759.2	3.3107	3.3509	0.0402	7234.0	7258.0	24.0	1.21	1.21	1.21	1745.8	23.0
25-Sep-09	Sunny	302.4	760.9	3.4340	3.4741	0.0401	7261.0	7285.0	24.0	1.22	1.22	1.22	1762.2	22.8
													Min	22.8
													Max	79.2
													Average	41.5

24-hr TSP Concentration Levels



Title: Contract No. DC/2007/20 HATS Stage 2A – Construction of Advance Disinfection Facilities at SCISTW Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Sep 09	Project No.: MA8009 Appendix: E	CINOTECH

APPENDIX F
WIND DATA

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
1-Sep-2009	00:00	2.1	E
1-Sep-2009	01:00	1.8	NE
1-Sep-2009	02:00	1.2	ENE
1-Sep-2009	03:00	1.8	NE
1-Sep-2009	04:00	1.6	NE
1-Sep-2009	05:00	1.6	ENE
1-Sep-2009	06:00	1.9	NE
1-Sep-2009	07:00	1.6	ENE
1-Sep-2009	08:00	1.6	NNE
1-Sep-2009	09:00	1.5	NNE
1-Sep-2009	10:00	1.8	NNE
1-Sep-2009	11:00	2.5	NNE
1-Sep-2009	12:00	2.1	NE
1-Sep-2009	13:00	1.8	NE
1-Sep-2009	14:00	1.9	NE
1-Sep-2009	15:00	1.9	NE
1-Sep-2009	16:00	1.9	NE
1-Sep-2009	17:00	1.9	N
1-Sep-2009	18:00	1.5	NNE
1-Sep-2009	19:00	1.9	NE
1-Sep-2009	20:00	1.9	ENE
1-Sep-2009	21:00	2.4	NNE
1-Sep-2009	22:00	1.8	ENE
1-Sep-2009	23:00	1.6	NNE
2-Sep-2009	00:00	1.6	N
2-Sep-2009	01:00	1.2	NNE
2-Sep-2009	02:00	1.5	NNE
2-Sep-2009	03:00	1.6	N
2-Sep-2009	04:00	1.5	NE
2-Sep-2009	05:00	0.7	ENE
2-Sep-2009	06:00	0.4	E
2-Sep-2009	07:00	0.6	E
2-Sep-2009	08:00	0.7	E
2-Sep-2009	09:00	0.9	E
2-Sep-2009	10:00	0.7	E
2-Sep-2009	11:00	1.0	NE
2-Sep-2009	12:00	1.6	NNE
2-Sep-2009	13:00	1.6	NE
2-Sep-2009	14:00	2.1	NE
2-Sep-2009	15:00	1.3	NE
2-Sep-2009	16:00	0.7	SSE
2-Sep-2009	17:00	0.9	NE
2-Sep-2009	18:00	0.9	ESE
2-Sep-2009	19:00	0.6	NNE
2-Sep-2009	20:00	0.7	NE
2-Sep-2009	21:00	0.7	NE
2-Sep-2009	22:00	0.7	NE
2-Sep-2009	23:00	0.6	N
3-Sep-2009	00:00	0.7	NNE
3-Sep-2009	01:00	0.9	NNE
3-Sep-2009	02:00	0.7	N
3-Sep-2009	03:00	0.3	NNE
3-Sep-2009	04:00	0.3	NNE
3-Sep-2009	05:00	0.3	ENE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
3-Sep-2009	06:00	0.3	ENE
3-Sep-2009	07:00	0.3	NNE
3-Sep-2009	08:00	0.4	NW
3-Sep-2009	09:00	0.3	NW
3-Sep-2009	10:00	0.3	E
3-Sep-2009	11:00	0.4	NNE
3-Sep-2009	12:00	1.0	NE
3-Sep-2009	13:00	1.5	ENE
3-Sep-2009	14:00	1.8	ENE
3-Sep-2009	15:00	2.1	N
3-Sep-2009	16:00	2.1	ENE
3-Sep-2009	17:00	1.9	ENE
3-Sep-2009	18:00	1.3	SW
3-Sep-2009	19:00	1.3	NNE
3-Sep-2009	20:00	1.3	N
3-Sep-2009	21:00	0.7	NW
3-Sep-2009	22:00	1.0	NE
3-Sep-2009	23:00	0.7	ENE
4-Sep-2009	00:00	2.0	SSE
4-Sep-2009	01:00	2.2	SE
4-Sep-2009	02:00	2.2	WNW
4-Sep-2009	03:00	1.9	SW
4-Sep-2009	04:00	2.0	WSW
4-Sep-2009	05:00	1.9	WSW
4-Sep-2009	06:00	2.2	WSW
4-Sep-2009	07:00	2.0	W
4-Sep-2009	08:00	1.7	W
4-Sep-2009	09:00	2.2	W
4-Sep-2009	10:00	2.9	W
4-Sep-2009	11:00	3.1	W
4-Sep-2009	12:00	3.2	WSW
4-Sep-2009	13:00	2.9	NNE
4-Sep-2009	14:00	2.5	NNE
4-Sep-2009	15:00	2.9	ESE
4-Sep-2009	16:00	2.0	SSE
4-Sep-2009	17:00	3.4	ESE
4-Sep-2009	18:00	3.1	ESE
4-Sep-2009	19:00	2.8	ESE
4-Sep-2009	20:00	2.2	E
4-Sep-2009	21:00	2.2	E
4-Sep-2009	22:00	2.2	ESE
4-Sep-2009	23:00	2.3	E
5-Sep-2009	00:00	2.3	ENE
5-Sep-2009	01:00	2.5	E
5-Sep-2009	02:00	2.9	E
5-Sep-2009	03:00	1.6	ENE
5-Sep-2009	04:00	1.9	ENE
5-Sep-2009	05:00	2.1	ENE
5-Sep-2009	06:00	1.8	ENE
5-Sep-2009	07:00	1.9	SSE
5-Sep-2009	08:00	1.8	E
5-Sep-2009	09:00	1.6	SE
5-Sep-2009	10:00	1.6	NNE
5-Sep-2009	11:00	1.8	NNE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
5-Sep-2009	12:00	1.5	NE
5-Sep-2009	13:00	1.9	NNE
5-Sep-2009	14:00	2.1	NNE
5-Sep-2009	15:00	2.4	NE
5-Sep-2009	16:00	2.2	NNE
5-Sep-2009	17:00	2.4	NNE
5-Sep-2009	18:00	2.1	NNE
5-Sep-2009	19:00	1.8	N
5-Sep-2009	20:00	2.1	NNE
5-Sep-2009	21:00	2.1	NE
5-Sep-2009	22:00	2.1	NE
5-Sep-2009	23:00	1.8	NNE
6-Sep-2009	00:00	1.8	NNE
6-Sep-2009	01:00	2.1	NNE
6-Sep-2009	02:00	2.4	NNE
6-Sep-2009	03:00	2.5	NNE
6-Sep-2009	04:00	2.1	ENE
6-Sep-2009	05:00	1.9	NE
6-Sep-2009	06:00	2.2	NNE
6-Sep-2009	07:00	2.2	ESE
6-Sep-2009	08:00	2.5	NE
6-Sep-2009	09:00	2.8	SE
6-Sep-2009	10:00	2.7	SE
6-Sep-2009	11:00	2.7	SE
6-Sep-2009	12:00	2.5	SE
6-Sep-2009	13:00	2.8	ESE
6-Sep-2009	14:00	2.5	ESE
6-Sep-2009	15:00	2.7	ESE
6-Sep-2009	16:00	2.1	NNE
6-Sep-2009	17:00	1.9	NE
6-Sep-2009	18:00	2.1	ESE
6-Sep-2009	19:00	2.5	E
6-Sep-2009	20:00	2.4	E
6-Sep-2009	21:00	2.7	E
6-Sep-2009	22:00	2.8	ENE
6-Sep-2009	23:00	2.2	ENE
7-Sep-2009	00:00	1.6	ENE
7-Sep-2009	01:00	2.2	ESE
7-Sep-2009	02:00	1.8	ESE
7-Sep-2009	03:00	2.1	ESE
7-Sep-2009	04:00	2.2	ESE
7-Sep-2009	05:00	2.1	ESE
7-Sep-2009	06:00	1.8	SE
7-Sep-2009	07:00	1.5	SE
7-Sep-2009	08:00	2.2	SE
7-Sep-2009	09:00	1.6	SE
7-Sep-2009	10:00	1.0	SE
7-Sep-2009	11:00	1.0	SE
7-Sep-2009	12:00	1.3	SE
7-Sep-2009	13:00	1.3	SE
7-Sep-2009	14:00	0.9	E
7-Sep-2009	15:00	1.0	ESE
7-Sep-2009	16:00	1.3	ESE
7-Sep-2009	17:00	1.2	ESE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
7-Sep-2009	18:00	1.5	SSE
7-Sep-2009	19:00	1.5	SSE
7-Sep-2009	20:00	1.0	SSE
7-Sep-2009	21:00	0.7	E
7-Sep-2009	22:00	1.0	ESE
7-Sep-2009	23:00	0.3	ESE
8-Sep-2009	00:00	0.0	ESE
8-Sep-2009	01:00	0.0	ENE
8-Sep-2009	02:00	0.0	ENE
8-Sep-2009	03:00	0.1	ESE
8-Sep-2009	04:00	0.1	NNE
8-Sep-2009	05:00	0.3	ESE
8-Sep-2009	06:00	0.3	ENE
8-Sep-2009	07:00	0.3	SSE
8-Sep-2009	08:00	0.7	SSE
8-Sep-2009	09:00	1.3	SSE
8-Sep-2009	10:00	2.1	SSE
8-Sep-2009	11:00	1.0	SSE
8-Sep-2009	12:00	1.5	ESE
8-Sep-2009	13:00	1.5	S
8-Sep-2009	14:00	2.7	S
8-Sep-2009	15:00	2.2	S
8-Sep-2009	16:00	1.8	SE
8-Sep-2009	17:00	1.0	SE
8-Sep-2009	18:00	0.9	SE
8-Sep-2009	19:00	1.0	SSE
8-Sep-2009	20:00	0.9	SE
8-Sep-2009	21:00	1.2	SE
8-Sep-2009	22:00	1.2	SSE
8-Sep-2009	23:00	1.0	SSE
9-Sep-2009	00:00	1.5	E
9-Sep-2009	01:00	1.3	E
9-Sep-2009	02:00	1.2	E
9-Sep-2009	03:00	1.2	SE
9-Sep-2009	04:00	1.0	E
9-Sep-2009	05:00	0.9	ENE
9-Sep-2009	06:00	0.7	ESE
9-Sep-2009	07:00	0.3	E
9-Sep-2009	08:00	0.1	SSE
9-Sep-2009	09:00	0.9	WSW
9-Sep-2009	10:00	1.5	SW
9-Sep-2009	11:00	1.6	WSW
9-Sep-2009	12:00	1.2	ENE
9-Sep-2009	13:00	1.2	S
9-Sep-2009	14:00	1.2	WSW
9-Sep-2009	15:00	1.3	NE
9-Sep-2009	16:00	0.9	NE
9-Sep-2009	17:00	0.7	SW
9-Sep-2009	18:00	0.9	SW
9-Sep-2009	19:00	0.4	SE
9-Sep-2009	20:00	0.3	ENE
9-Sep-2009	21:00	0.3	ENE
9-Sep-2009	22:00	0.0	ENE
9-Sep-2009	23:00	0.0	ENE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
10-Sep-2009	00:00	0.1	W
10-Sep-2009	01:00	0.6	SW
10-Sep-2009	02:00	0.9	SW
10-Sep-2009	03:00	0.6	W
10-Sep-2009	04:00	1.0	NE
10-Sep-2009	05:00	1.2	SW
10-Sep-2009	06:00	1.5	SW
10-Sep-2009	07:00	1.5	W
10-Sep-2009	08:00	1.5	WSW
10-Sep-2009	09:00	1.3	ESE
10-Sep-2009	10:00	1.6	E
10-Sep-2009	11:00	2.5	E
10-Sep-2009	12:00	2.4	E
10-Sep-2009	13:00	2.5	ESE
10-Sep-2009	14:00	2.7	ENE
10-Sep-2009	15:00	2.1	ENE
10-Sep-2009	16:00	2.4	ENE
10-Sep-2009	17:00	2.7	ENE
10-Sep-2009	18:00	2.2	ENE
10-Sep-2009	19:00	2.5	ENE
10-Sep-2009	20:00	2.4	NE
10-Sep-2009	21:00	1.9	ENE
10-Sep-2009	22:00	1.6	ENE
10-Sep-2009	23:00	2.2	ENE
11-Sep-2009	00:00	2.5	ESE
11-Sep-2009	01:00	2.4	ESE
11-Sep-2009	02:00	2.7	SE
11-Sep-2009	03:00	1.6	SE
11-Sep-2009	04:00	1.3	SSE
11-Sep-2009	05:00	2.2	SSE
11-Sep-2009	06:00	2.4	SE
11-Sep-2009	07:00	1.8	SSE
11-Sep-2009	08:00	1.5	SE
11-Sep-2009	09:00	1.6	S
11-Sep-2009	10:00	2.4	ESE
11-Sep-2009	11:00	2.8	ESE
11-Sep-2009	12:00	3.4	SE
11-Sep-2009	13:00	2.7	SSE
11-Sep-2009	14:00	2.7	NE
11-Sep-2009	15:00	4.3	ENE
11-Sep-2009	16:00	3.8	ENE
11-Sep-2009	17:00	4.0	ESE
11-Sep-2009	18:00	3.8	ESE
11-Sep-2009	19:00	3.1	ESE
11-Sep-2009	20:00	3.7	ESE
11-Sep-2009	21:00	3.4	SE
11-Sep-2009	22:00	3.7	SSE
11-Sep-2009	23:00	3.4	SSE
12-Sep-2009	00:00	3.1	SSE
12-Sep-2009	01:00	2.8	SSE
12-Sep-2009	02:00	2.5	SSE
12-Sep-2009	03:00	2.9	SSE
12-Sep-2009	04:00	2.6	S
12-Sep-2009	05:00	2.6	S

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
12-Sep-2009	06:00	2.2	S
12-Sep-2009	07:00	1.9	ENE
12-Sep-2009	08:00	1.9	ESE
12-Sep-2009	09:00	2.3	ESE
12-Sep-2009	10:00	2.6	ESE
12-Sep-2009	11:00	3.2	ESE
12-Sep-2009	12:00	3.1	ESE
12-Sep-2009	13:00	3.1	SE
12-Sep-2009	14:00	3.2	E
12-Sep-2009	15:00	3.4	ESE
12-Sep-2009	16:00	2.8	ESE
12-Sep-2009	17:00	3.1	SE
12-Sep-2009	18:00	2.6	ENE
12-Sep-2009	19:00	2.3	SSE
12-Sep-2009	20:00	2.2	SSE
12-Sep-2009	21:00	2.2	SE
12-Sep-2009	22:00	2.3	SE
12-Sep-2009	23:00	2.3	SE
13-Sep-2009	00:00	2.3	SE
13-Sep-2009	01:00	2.2	W
13-Sep-2009	02:00	1.9	W
13-Sep-2009	03:00	2.2	WSW
13-Sep-2009	04:00	2.3	W
13-Sep-2009	05:00	2.0	WNW
13-Sep-2009	06:00	1.9	N
13-Sep-2009	07:00	2.0	W
13-Sep-2009	08:00	2.2	WSW
13-Sep-2009	09:00	2.0	WSW
13-Sep-2009	10:00	2.5	S
13-Sep-2009	11:00	2.8	SE
13-Sep-2009	12:00	3.4	SE
13-Sep-2009	13:00	3.5	S
13-Sep-2009	14:00	3.2	S
13-Sep-2009	15:00	3.2	SSW
13-Sep-2009	16:00	3.2	S
13-Sep-2009	17:00	3.4	S
13-Sep-2009	18:00	3.2	S
13-Sep-2009	19:00	2.3	SSE
13-Sep-2009	20:00	1.7	W
13-Sep-2009	21:00	2.0	ENE
13-Sep-2009	22:00	1.9	WNW
13-Sep-2009	23:00	1.6	WNW
14-Sep-2009	00:00	2.2	W
14-Sep-2009	01:00	3.1	WSW
14-Sep-2009	02:00	2.8	W
14-Sep-2009	03:00	2.9	W
14-Sep-2009	04:00	2.8	WNW
14-Sep-2009	05:00	2.9	SSW
14-Sep-2009	06:00	3.1	NNE
14-Sep-2009	07:00	3.9	WSW
14-Sep-2009	08:00	3.8	ESE
14-Sep-2009	09:00	3.9	ESE
14-Sep-2009	10:00	4.5	ESE
14-Sep-2009	11:00	5.6	WSW

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
14-Sep-2009	12:00	8.4	W
14-Sep-2009	13:00	8.4	WNW
14-Sep-2009	14:00	7.6	W
14-Sep-2009	15:00	10.8	NNE
14-Sep-2009	16:00	10.6	NNE
14-Sep-2009	17:00	7.5	ENE
14-Sep-2009	18:00	7.0	E
14-Sep-2009	19:00	7.2	NE
14-Sep-2009	20:00	7.2	SSE
14-Sep-2009	21:00	10.0	ENE
14-Sep-2009	22:00	9.9	ENE
14-Sep-2009	23:00	10.2	ENE
15-Sep-2009	00:00	9.4	ENE
15-Sep-2009	01:00	12.6	ENE
15-Sep-2009	02:00	9.6	ENE
15-Sep-2009	03:00	10.0	NE
15-Sep-2009	04:00	9.9	ENE
15-Sep-2009	05:00	10.2	ENE
15-Sep-2009	06:00	10.6	ENE
15-Sep-2009	07:00	7.5	ENE
15-Sep-2009	08:00	7.6	ENE
15-Sep-2009	09:00	7.8	ENE
15-Sep-2009	10:00	5.1	E
15-Sep-2009	11:00	5.1	E
15-Sep-2009	12:00	5.2	E
15-Sep-2009	13:00	5.2	ENE
15-Sep-2009	14:00	5.1	ENE
15-Sep-2009	15:00	5.1	ENE
15-Sep-2009	16:00	5.2	NE
15-Sep-2009	17:00	5.1	ENE
15-Sep-2009	18:00	4.8	ENE
15-Sep-2009	19:00	4.3	ENE
15-Sep-2009	20:00	3.7	E
15-Sep-2009	21:00	3.6	E
15-Sep-2009	22:00	3.7	E
15-Sep-2009	23:00	3.6	N
16-Sep-2009	00:00	3.3	ENE
16-Sep-2009	01:00	3.4	ENE
16-Sep-2009	02:00	3.1	ENE
16-Sep-2009	03:00	3.0	NNE
16-Sep-2009	04:00	3.1	NNE
16-Sep-2009	05:00	3.4	N
16-Sep-2009	06:00	3.1	N
16-Sep-2009	07:00	3.6	N
16-Sep-2009	08:00	3.9	NE
16-Sep-2009	09:00	4.3	ENE
16-Sep-2009	10:00	4.3	ENE
16-Sep-2009	11:00	4.0	ENE
16-Sep-2009	12:00	4.6	ENE
16-Sep-2009	13:00	4.8	ESE
16-Sep-2009	14:00	4.8	ESE
16-Sep-2009	15:00	4.6	E
16-Sep-2009	16:00	4.5	E
16-Sep-2009	17:00	4.3	ENE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
16-Sep-2009	18:00	1.2	ESE
16-Sep-2009	19:00	0.4	ESE
16-Sep-2009	20:00	0.4	NNE
16-Sep-2009	21:00	0.1	ENE
16-Sep-2009	22:00	0.4	SSW
16-Sep-2009	23:00	0.0	W
17-Sep-2009	00:00	0.1	NW
17-Sep-2009	01:00	0.3	N
17-Sep-2009	02:00	0.1	ESE
17-Sep-2009	03:00	0.4	E
17-Sep-2009	04:00	0.3	ESE
17-Sep-2009	05:00	0.3	SSE
17-Sep-2009	06:00	0.4	NE
17-Sep-2009	07:00	0.4	N
17-Sep-2009	08:00	0.9	NE
17-Sep-2009	09:00	0.7	ENE
17-Sep-2009	10:00	0.9	W
17-Sep-2009	11:00	1.6	SW
17-Sep-2009	12:00	1.6	WSW
17-Sep-2009	13:00	1.9	SSW
17-Sep-2009	14:00	2.2	WNW
17-Sep-2009	15:00	2.5	WNW
17-Sep-2009	16:00	2.2	NE
17-Sep-2009	17:00	1.5	N
17-Sep-2009	18:00	1.6	N
17-Sep-2009	19:00	1.6	N
17-Sep-2009	20:00	1.5	NNE
17-Sep-2009	21:00	1.2	NNE
17-Sep-2009	22:00	1.3	NNE
17-Sep-2009	23:00	0.6	E
18-Sep-2009	00:00	0.4	E
18-Sep-2009	01:00	0.7	ESE
18-Sep-2009	02:00	0.3	E
18-Sep-2009	03:00	0.1	E
18-Sep-2009	04:00	0.1	ESE
18-Sep-2009	05:00	0.3	N
18-Sep-2009	06:00	0.0	N
18-Sep-2009	07:00	0.0	N
18-Sep-2009	08:00	0.4	NE
18-Sep-2009	09:00	1.3	N
18-Sep-2009	10:00	2.1	NE
18-Sep-2009	11:00	1.9	ENE
18-Sep-2009	12:00	2.1	NNE
18-Sep-2009	13:00	1.9	NNE
18-Sep-2009	14:00	1.9	E
18-Sep-2009	15:00	2.1	E
18-Sep-2009	16:00	2.1	NE
18-Sep-2009	17:00	1.8	E
18-Sep-2009	18:00	1.6	E
18-Sep-2009	19:00	1.2	E
18-Sep-2009	20:00	1.8	E
18-Sep-2009	21:00	1.3	E
18-Sep-2009	22:00	0.7	NE
18-Sep-2009	23:00	1.3	WNW

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
19-Sep-2009	00:00	1.8	W
19-Sep-2009	01:00	1.0	NNE
19-Sep-2009	02:00	1.8	NNE
19-Sep-2009	03:00	1.6	NE
19-Sep-2009	04:00	1.5	NE
19-Sep-2009	05:00	1.3	ENE
19-Sep-2009	06:00	1.5	E
19-Sep-2009	07:00	1.0	E
19-Sep-2009	08:00	1.2	ENE
19-Sep-2009	09:00	1.5	E
19-Sep-2009	10:00	1.8	E
19-Sep-2009	11:00	2.1	WNW
19-Sep-2009	12:00	3.0	NW
19-Sep-2009	13:00	1.6	SW
19-Sep-2009	14:00	2.2	SW
19-Sep-2009	15:00	1.6	W
19-Sep-2009	16:00	2.1	W
19-Sep-2009	17:00	2.1	SW
19-Sep-2009	18:00	1.5	SSW
19-Sep-2009	19:00	0.9	W
19-Sep-2009	20:00	0.7	W
19-Sep-2009	21:00	0.3	WNW
19-Sep-2009	22:00	0.4	WSW
19-Sep-2009	23:00	0.4	WSW
20-Sep-2009	00:00	0.4	WSW
20-Sep-2009	01:00	0.1	WSW
20-Sep-2009	02:00	0.6	WSW
20-Sep-2009	03:00	0.3	WSW
20-Sep-2009	04:00	0.7	WSW
20-Sep-2009	05:00	0.6	WNW
20-Sep-2009	06:00	0.4	WNW
20-Sep-2009	07:00	0.3	WSW
20-Sep-2009	08:00	0.6	WNW
20-Sep-2009	09:00	0.6	WNW
20-Sep-2009	10:00	2.1	WSW
20-Sep-2009	11:00	2.1	WSW
20-Sep-2009	12:00	1.9	W
20-Sep-2009	13:00	1.8	WSW
20-Sep-2009	14:00	2.4	W
20-Sep-2009	15:00	2.4	W
20-Sep-2009	16:00	2.4	WSW
20-Sep-2009	17:00	2.2	S
20-Sep-2009	18:00	2.2	W
20-Sep-2009	19:00	1.5	WNW
20-Sep-2009	20:00	1.2	WNW
20-Sep-2009	21:00	1.0	WSW
20-Sep-2009	22:00	1.3	WSW
20-Sep-2009	23:00	1.0	WSW
21-Sep-2009	00:00	1.2	WSW
21-Sep-2009	01:00	1.0	SW
21-Sep-2009	02:00	1.2	N
21-Sep-2009	03:00	1.3	SSW
21-Sep-2009	04:00	1.3	NNE
21-Sep-2009	05:00	1.0	NE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
21-Sep-2009	06:00	1.2	ENE
21-Sep-2009	07:00	0.9	S
21-Sep-2009	08:00	0.9	S
21-Sep-2009	09:00	1.2	NE
21-Sep-2009	10:00	1.2	NE
21-Sep-2009	11:00	1.8	NE
21-Sep-2009	12:00	1.5	NE
21-Sep-2009	13:00	1.6	NNE
21-Sep-2009	14:00	1.5	NE
21-Sep-2009	15:00	1.5	NE
21-Sep-2009	16:00	1.5	ENE
21-Sep-2009	17:00	1.8	E
21-Sep-2009	18:00	1.3	E
21-Sep-2009	19:00	1.0	NE
21-Sep-2009	20:00	1.2	NE
21-Sep-2009	21:00	1.2	E
21-Sep-2009	22:00	1.2	NE
21-Sep-2009	23:00	1.3	NNE
22-Sep-2009	00:00	1.5	NE
22-Sep-2009	01:00	1.5	N
22-Sep-2009	02:00	1.3	NNE
22-Sep-2009	03:00	1.0	ENE
22-Sep-2009	04:00	1.2	ENE
22-Sep-2009	05:00	1.2	NE
22-Sep-2009	06:00	0.9	NE
22-Sep-2009	07:00	0.7	NE
22-Sep-2009	08:00	1.5	NNE
22-Sep-2009	09:00	1.3	NNE
22-Sep-2009	10:00	1.2	NNE
22-Sep-2009	11:00	1.5	NE
22-Sep-2009	12:00	1.8	NE
22-Sep-2009	13:00	1.5	ENE
22-Sep-2009	14:00	2.1	E
22-Sep-2009	15:00	1.6	E
22-Sep-2009	16:00	1.6	ENE
22-Sep-2009	17:00	1.0	E
22-Sep-2009	18:00	1.6	E
22-Sep-2009	19:00	1.6	ESE
22-Sep-2009	20:00	1.9	ESE
22-Sep-2009	21:00	1.9	SSE
22-Sep-2009	22:00	1.5	NNE
22-Sep-2009	23:00	1.5	NNE
23-Sep-2009	00:00	1.3	NNE
23-Sep-2009	01:00	1.5	ENE
23-Sep-2009	02:00	1.3	ENE
23-Sep-2009	03:00	1.0	ESE
23-Sep-2009	04:00	1.2	ESE
23-Sep-2009	05:00	1.5	ESE
23-Sep-2009	06:00	1.2	NE
23-Sep-2009	07:00	0.9	NE
23-Sep-2009	08:00	1.3	NE
23-Sep-2009	09:00	1.3	NE
23-Sep-2009	10:00	2.4	NE
23-Sep-2009	11:00	2.4	E

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
23-Sep-2009	12:00	2.1	NE
23-Sep-2009	13:00	1.9	ENE
23-Sep-2009	14:00	2.7	NE
23-Sep-2009	15:00	2.5	NNE
23-Sep-2009	16:00	2.2	ENE
23-Sep-2009	17:00	2.1	ENE
23-Sep-2009	18:00	1.6	NE
23-Sep-2009	19:00	1.6	N
23-Sep-2009	20:00	1.5	ENE
23-Sep-2009	21:00	1.0	NE
23-Sep-2009	22:00	0.7	NE
23-Sep-2009	23:00	0.1	NE
24-Sep-2009	00:00	0.3	W
24-Sep-2009	01:00	0.3	N
24-Sep-2009	02:00	0.1	NE
24-Sep-2009	03:00	0.1	N
24-Sep-2009	04:00	0.0	N
24-Sep-2009	05:00	0.7	ENE
24-Sep-2009	06:00	0.3	ENE
24-Sep-2009	07:00	0.3	ENE
24-Sep-2009	08:00	1.0	NE
24-Sep-2009	09:00	1.5	ENE
24-Sep-2009	10:00	1.9	NE
24-Sep-2009	11:00	2.1	NE
24-Sep-2009	12:00	2.4	NE
24-Sep-2009	13:00	2.4	NE
24-Sep-2009	14:00	2.5	NE
24-Sep-2009	15:00	2.4	NNE
24-Sep-2009	16:00	2.2	ENE
24-Sep-2009	17:00	1.5	ENE
24-Sep-2009	18:00	0.7	E
24-Sep-2009	19:00	0.1	ENE
24-Sep-2009	20:00	0.6	NNE
24-Sep-2009	21:00	0.4	NNE
24-Sep-2009	22:00	0.1	NE
24-Sep-2009	23:00	0.0	ENE
25-Sep-2009	00:00	0.0	ENE
25-Sep-2009	01:00	0.0	N
25-Sep-2009	02:00	0.1	ENE
25-Sep-2009	03:00	0.0	ENE
25-Sep-2009	04:00	0.0	NE
25-Sep-2009	05:00	0.0	ENE
25-Sep-2009	06:00	0.0	E
25-Sep-2009	07:00	0.3	NE
25-Sep-2009	08:00	1.0	ENE
25-Sep-2009	09:00	1.8	NE
25-Sep-2009	10:00	2.1	NE
25-Sep-2009	11:00	2.2	NE
25-Sep-2009	12:00	1.9	NE
25-Sep-2009	13:00	2.2	NNE
25-Sep-2009	14:00	2.7	NE
25-Sep-2009	15:00	2.8	NE
25-Sep-2009	16:00	2.4	NE
25-Sep-2009	17:00	1.8	E

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
25-Sep-2009	18:00	1.2	ENE
25-Sep-2009	19:00	0.6	NE
25-Sep-2009	20:00	0.4	NE
25-Sep-2009	21:00	0.9	ENE
25-Sep-2009	22:00	0.6	NE
25-Sep-2009	23:00	0.9	NE
26-Sep-2009	00:00	0.3	E
26-Sep-2009	01:00	0.1	ENE
26-Sep-2009	02:00	0.0	E
26-Sep-2009	03:00	0.0	ENE
26-Sep-2009	04:00	0.0	E
26-Sep-2009	05:00	0.0	E
26-Sep-2009	06:00	0.0	E
26-Sep-2009	07:00	0.0	ENE
26-Sep-2009	08:00	1.0	ENE
26-Sep-2009	09:00	1.2	W
26-Sep-2009	10:00	1.3	WNW
26-Sep-2009	11:00	1.0	WNW
26-Sep-2009	12:00	1.3	N
26-Sep-2009	13:00	1.9	N
26-Sep-2009	14:00	1.8	N
26-Sep-2009	15:00	1.9	NW
26-Sep-2009	16:00	1.5	NW
26-Sep-2009	17:00	1.3	NW
26-Sep-2009	18:00	0.7	NW
26-Sep-2009	19:00	0.7	S
26-Sep-2009	20:00	0.7	SSW
26-Sep-2009	21:00	2.8	SSW
26-Sep-2009	22:00	2.8	WSW
26-Sep-2009	23:00	2.6	W
27-Sep-2009	00:00	2.2	W
27-Sep-2009	01:00	2.3	SSW
27-Sep-2009	02:00	2.2	NW
27-Sep-2009	03:00	2.0	W
27-Sep-2009	04:00	2.0	N
27-Sep-2009	05:00	2.0	NNE
27-Sep-2009	06:00	2.0	NNE
27-Sep-2009	07:00	2.3	N
27-Sep-2009	08:00	2.2	NNE
27-Sep-2009	09:00	2.3	NNE
27-Sep-2009	10:00	2.2	E
27-Sep-2009	11:00	2.3	ENE
27-Sep-2009	12:00	3.4	NE
27-Sep-2009	13:00	3.4	NNE
27-Sep-2009	14:00	3.2	NNE
27-Sep-2009	15:00	3.4	NNE
27-Sep-2009	16:00	3.2	ENE
27-Sep-2009	17:00	3.1	S
27-Sep-2009	18:00	2.6	SW
27-Sep-2009	19:00	2.2	SW
27-Sep-2009	20:00	1.7	NNE
27-Sep-2009	21:00	2.0	ENE
27-Sep-2009	22:00	1.7	N
27-Sep-2009	23:00	1.7	ENE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
28-Sep-2009	00:00	1.7	NNE
28-Sep-2009	01:00	1.9	NNE
28-Sep-2009	02:00	2.0	NNE
28-Sep-2009	03:00	2.0	NNE
28-Sep-2009	04:00	1.9	ENE
28-Sep-2009	05:00	2.0	ENE
28-Sep-2009	06:00	2.0	NNE
28-Sep-2009	07:00	1.9	NNE
28-Sep-2009	08:00	2.2	NNE
28-Sep-2009	09:00	2.9	N
28-Sep-2009	10:00	3.5	NE
28-Sep-2009	11:00	3.7	N
28-Sep-2009	12:00	3.8	ENE
28-Sep-2009	13:00	4.1	NNE
28-Sep-2009	14:00	4.1	NE
28-Sep-2009	15:00	4.0	N
28-Sep-2009	16:00	3.5	N
28-Sep-2009	17:00	3.8	N
28-Sep-2009	18:00	3.1	NE
28-Sep-2009	19:00	2.6	N
28-Sep-2009	20:00	2.5	ENE
28-Sep-2009	21:00	2.2	ESE
28-Sep-2009	22:00	2.2	E
28-Sep-2009	23:00	2.2	ENE
29-Sep-2009	00:00	2.2	ENE
29-Sep-2009	01:00	2.2	ESE
29-Sep-2009	02:00	2.2	ESE
29-Sep-2009	03:00	2.0	SE
29-Sep-2009	04:00	2.0	SSE
29-Sep-2009	05:00	2.2	SSE
29-Sep-2009	06:00	2.0	S
29-Sep-2009	07:00	2.0	S
29-Sep-2009	08:00	2.2	ESE
29-Sep-2009	09:00	2.8	ESE
29-Sep-2009	10:00	3.4	ESE
29-Sep-2009	11:00	3.2	E
29-Sep-2009	12:00	3.7	ENE
29-Sep-2009	13:00	3.8	ENE
29-Sep-2009	14:00	3.8	ESE
29-Sep-2009	15:00	4.1	ESE
29-Sep-2009	16:00	3.7	SE
29-Sep-2009	17:00	3.4	SSE
29-Sep-2009	18:00	2.8	SSE
29-Sep-2009	19:00	2.5	S
29-Sep-2009	20:00	2.5	S
29-Sep-2009	21:00	2.2	ESE
29-Sep-2009	22:00	2.0	ESE
29-Sep-2009	23:00	1.9	SSE
30-Sep-2009	00:00	2.0	E
30-Sep-2009	01:00	0.7	NE
30-Sep-2009	02:00	0.1	NNE
30-Sep-2009	03:00	0.4	ENE
30-Sep-2009	04:00	0.9	ENE
30-Sep-2009	05:00	0.9	ENE

Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
30-Sep-2009	06:00	1.0	ENE
30-Sep-2009	07:00	0.6	E
30-Sep-2009	08:00	1.2	NE
30-Sep-2009	09:00	1.8	ESE
30-Sep-2009	10:00	1.8	SSE
30-Sep-2009	11:00	2.4	ENE
30-Sep-2009	12:00	3.8	ENE
30-Sep-2009	13:00	3.1	SSE
30-Sep-2009	14:00	3.2	SSE
30-Sep-2009	15:00	3.4	SSE
30-Sep-2009	16:00	3.1	ENE
30-Sep-2009	17:00	2.9	NE
30-Sep-2009	18:00	2.9	N
30-Sep-2009	19:00	2.6	N
30-Sep-2009	20:00	2.5	WSW
30-Sep-2009	21:00	2.5	SW
30-Sep-2009	22:00	2.2	SW
30-Sep-2009	23:00	2.3	SW

APPENDIX G
SUMMARY OF EXCEEDANCE

APPENDIX G – Summary of Exceedance

(A) Exceedance Report for 1-hr TSP
(NIL in the reporting month)

(B) Exceedance Report for 24-hr TSP
(NIL in the reporting month)

(C) Exceedance Report for Construction Noise
(NIL in the reporting month)

APPENDIX H
SITE AUDIT SUMMARY

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	90902
Date	2 September 2009
Time	14:45 – 16:15

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

Ref. No.	Remarks/Observations	Related Item No.
90904 – O01	*Water Quality* • Sand was observed near the gully at the yard behind the NaOCl Storage Compound. Contractor was reminded to clear it.	B7
90904 – O02	*Air Quality* • Dusty paved road was observed at the yard behind the NaOCl Storage Compound and Day Tank Storage Area. Contractor was reminded to clear it up.	C3
	Noise • No environmental deficiency was identified during site inspection	
	Waste / Chemical Management • No environmental deficiency was identified during site inspection	
	Permit / Licenses • No environmental deficiency was identified during site inspection.	
	Others • No environmental deficiency was identified during site inspection • Follow-up on previous audit session (Ref. No. 90826), all environmental deficiencies were improved/ rectified during the site inspection.	

	Name	Signature	Date
Recorded by	Cherry Mak		3 September 2009
Checked by	Dr. Priscilla Choy		3 September 2009

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	90909
Date	9 September 2009
Time	14:30 – 16:00

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

Ref. No.	Remarks/Observations	Related Item No.
90909 – O02	*Water Quality* • Stagnant water was accumulated in the trench near NaOCl Storage Compound. Contractor was reminded to pump the water out or other measures.	B12
90909 – O04	• Sand and concrete debris were accumulated in the U-channel at Chamber 15. Contractor was reminded to clear it for the protection of storm drain system.	B7
90909 – O01	*Air Quality* • Dusty paved road was observed at the NaOCl Storage Compound. Contractor was reminded to clear it up as soon as possible.	C3
	Noise • No environmental deficiency was identified during site inspection	
90909 – O03	*Waste / Chemical Management* • Chemical containers were accumulated at Day Tank Storage Area. Contractor was reminded to provide drip tray and proper label for the containers	E7ii
	Permit / Licenses • No environmental deficiency was identified during site inspection.	
	Others • No environmental deficiency was identified during site inspection	
	• Follow-up on previous audit session (Ref. No. 90902), all environmental deficiencies were improved/ rectified during the site inspection.	

	Name	Signature	Date
Recorded by	Cherry Mak		10 September 2009
Checked by	Dr. Priscilla Choy		10 September 2009

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	90917
Date	17 September 2009
Time	14:45 – 16:15

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

Ref. No.	Remarks/Observations	Related Item No.
90917 – O01	*Water Quality* • No environmental deficiency was identified during site inspection *Air Quality* • Dusty road was observed adjacent to the NaOCl Storage Compound. Contractor was reminded to clear it up after daily work *Noise* • No environmental deficiency was identified during site inspection	C3
90917 – R01	*Waste / Chemical Management* • The packing material should be cleared up regularly for the maintenance of site tidiness. *Permit / Licenses* • No environmental deficiency was identified during site inspection. *Others* • No environmental deficiency was identified during site inspection • Follow-up on previous audit session (Ref. No. 90909), all environmental deficiencies were improved/ rectified except item no. 90909-O04 due to no site inspection at Chamber 15. Follow-up action is needed in the coming site inspection.	E8

	Name	Signature	Date
Recorded by	Cherry Mak		18 September 2009
Checked by	Dr. Priscilla Choy		18 September 2009

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	90924
Date	24 September 2009
Time	14:45 – 16:25

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

Ref. No.	Remarks/Observations	Related Item No.
90924 – O02	*Water Quality* • No environmental deficiency was identified during site inspection *Air Quality* • Soil was observed on the road adjacent to NaOCl Storage Chamber and near the U-channel of Day Tank Storage Area. The Contractor was reminded to clear it as soon as possible. *Noise* • No environmental deficiency was identified during site inspection	C3
90924 – O01	*Waste / Chemical Management* • Chemical containers were placed at the staircase of Sedimentation Tank. The Contractor was reminded to relocate them to adequate storage area and provide drip tray under them. *Permit / Licenses* • No environmental deficiency was identified during site inspection. *Others* • No environmental deficiency was identified during site inspection • Follow-up on previous audit session (Ref. No. 90917), all environmental deficiencies were improved/ rectified except item no. 90917-O01. This item is remarked as 90924 – O02 for the follow-up action.	E7ii

	Name	Signature	Date
Recorded by	Cherry Mak		25 September 2009
Checked by	Dr. Priscilla Choy		25 September 2009

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	90929
Date	29 September 2009
Time	14:45 – 16:00

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

Ref. No.	Remarks/Observations	Related Item No.
90929 - R01	***Water Quality*** • All runoff should be treated with sediment tank prior to discharge to public drains. ***Air Quality*** • No environmental deficiency was identified during site inspection ***Noise*** • No environmental deficiency was identified during site inspection ***Waste / Chemical Management*** • No environmental deficiency was identified during the site inspection. ***Permit / Licenses*** • No environmental deficiency was identified during site inspection. ***Others*** • No environmental deficiency was identified during site inspection • Follow-up on previous audit session (Ref. No. 90924), all environmental deficiencies were improved/ rectified during the site inspection.	N/A

	Name	Signature	Date
Recorded by	Cherry Mak		29 September 2009
Checked by	Dr. Priscilla Choy		29 September 2009

APPENDIX I
EVENT/ACTION PLANS

APPENDIX I – Event / Action Plan

Table I-1 Event / Action Plan for Air Quality

EVENT	ACTION			
	ET	**IEC**	**ER**	**CONTRACTOR**
ACTION LEVEL				
1.Exceedance for one sample	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and ER; 3. Repeat measurement to confirm finding.	1. Check monitoring data submitted by ET; and 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; and 2. Amend working methods if appropriate.
2.Exceedance for two or more consecutive samples	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC and ER; 3. Increase monitoring frequency to daily; 4. Discuss with IEC and Contractor on remedial actions required; 5. Assess the effectiveness of Contractor's remedial actions; 6. If exceedance continues, arrange meeting with IEC and ER; and 7. If exceedance stops, cease additional monitoring.	1. Checking monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; and 4. Advise the ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; and 5. Conduct meeting with ET and IEC if exceedance continues.	1. Discuss with ET and IEC on proper remedial actions; 2. Submit proposals for remedial actions to ER and IEC within 3 working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal if appropriate.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
1.Exceedance for one sample	1. Identify source and investigate the causes of exceedance; 2. Inform Contractor, IEC, ER and EPD; 3. Repeat measurement to confirm finding; and 4. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; and 4. Advise the ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; and 5. Conduct meeting with ET and IEC if exceedance continues.	1. Take immediate action to avoid further exceedance; 2. Discuss with ET and IEC on proper remedial actions; 3. Submit proposals for remedial actions to ER and IEC within 3 working days of notification; and 4. Implement the agreed proposals.
2.Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Carry out analysis of Contractor's working procedures to investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, ER and Contractor to discuss the remedial actions to be taken; 6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and ER informed of the results; and 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ER, ET and Contractor on possible remedial measures; and 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; and 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	1.Take immediate action to avoid further exceedance; 2. Discuss with ET, ER and IEC on proper remedial actions; 3.Submit proposals for remedial actions to ER and IEC within 3 working days of notification; 3.Implement the agreed proposals; 4.Submit further proposals for remedial actions if problem still not under control; and 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

Table I-2 Event / Action Plan for Construction Noise

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; and 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; and 3. Advise the ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; and 4. Supervise the implementation of remedial measures.	1. Submit noise mitigation proposal to IEC and ER; and 2. Implement noise mitigation proposals.
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurement to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; and 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; and 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposal for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; and 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

APPENDIX J
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

APPENDIX J - Environmental Mitigation Implementation Schedule (EMIS)

EIA Ref	Environmental Protection Measures/Mitigation Measures	Location/Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.29	Dust mitigation measures stipulated in the Air Pollution Control (Construction Dust) Regulation should be incorporated to control dust emission from the site. Control measures relevant to this Project are listed below: • Skip hoist for material transport should be totally enclosed by impervious sheeting; • Vehicle washing facilities should be provided at every vehicle exit point; • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore; • Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit; • Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather; • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines; • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs; • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; • Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per	Work sites / During the construction period	Contractor		√			EIAO-TM and Air Pollution Control (Construction Dust) Regulation

EIA Ref	Environmental Protection Measures/Mitigation Measures	Location/Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	hour is the recommended limit; • Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides; • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites; and • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.							
S4.48 – S4.50	Use of quiet PME	Work sites / During the construction period	Contractor		√			EIAO-TM and Noise Control Ordinance
S4.51	*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.	Work sites / During the construction period	Contractor		√			EIAO-TM and Noise Control Ordinance

EIA Ref	Environmental Protection Measures/Mitigation Measures	Location/Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S4.56 & S13	Noise monitoring should be carried out to ensure that noise mitigation measures would be properly implemented. Details of the monitoring requirements are specified in the EM&A Manual.	Barrack / During the construction period	Contractor		√			EIAO-TM and Noise Control Ordinance
S5.212	The practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted. It is recommended to install perimeter channels in the works areas to intercept runoff at site boundary prior to the commencement of any earthwork. To prevent storm runoff from washing across exposed soil surfaces, intercepting channels should be provided. Drainage channels are also required to convey site runoff to sand/silt traps and oil interceptors. Provision of regular cleaning and maintenance can ensure the normal operation of these facilities throughout the construction period. Any practical options for the diversion and realignment of drainage should comply with both engineering and environmental requirements in order to ensure adequate hydraulic capacity of all drains.	Work sites / During the construction period	Contractor		√			EIAO-TM and Water Pollution Control Ordinance
S5.213	There is a need to apply to EPD for a discharge licence under the WPCO 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 all the standards listed in the TM-DSS. Reuse and recycling of the treated effluent can minimise water consumption and reduce the effluent discharge volume. The beneficial uses of the treated effluent may include dust suppression, wheel washing and general cleaning. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD.	Work sites / During the construction period	Contractor		√			EIAO-TM and Water Pollution Control Ordinance

EIA Ref	Environmental Protection Measures/Mitigation Measures	Location/Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S5.214	The construction programme should be properly planned to minimise 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 minimise 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 times. The stockpiles of materials should be placed at 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 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.	Work sites / During the construction period	Contractor		√			EIAO-TM and Water Pollution Control Ordinance
S5.215	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 spreading from the site area. It is recommended to clean the construction sites on a regular basis.	Work sites / During the construction period	Contractor		√			EIAO-TM and Water Pollution Control Ordinance
S5.216	The presence of construction workers generates sewage. It is recommended to provide sufficient chemical toilets in the works areas. The toilet facilities should be more than 30 m from any watercourse. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis. The construction workers can also make use of the existing toilet facilities within the SCISTW as necessary.	Work sites / During the construction period	Contractor		√			EIAO-TM and Water Pollution Control Ordinance

EIA Ref	Environmental Protection Measures/Mitigation Measures	Location/Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S5.217	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. Regular environmental audit on the construction site can provide an effective control of any malpractices and can achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures.	Work sites / During the construction period	Contractor		√			EIAO-TM and Water Pollution Control Ordinance
S5.218	Contractor must 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.	Work sites / During the construction period	Contractor		√			EIAO-TM and Waste Disposal Ordinance
S5.219	Any service shop and 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 within the areas appropriately equipped to control these discharges.	Work sites / During the construction period	Contractor		√			EIAO-TM, Waste Disposal Ordinance and Water Pollution Control Ordinance
S5.220	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 labeled, to notify and warn the personnel who are handling the wastes, to avoid accidents.	Work sites / During the construction period	Contractor		√			EIAO-TM and Waste Disposal Ordinance

EIA Ref	Environmental Protection Measures/Mitigation Measures	Location/Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	• Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.							
S10.21	*Good Site Practices* Recommendations for good site practices during the construction activities include: • Nomination of an approved person, 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 handling procedures • Provision of sufficient waste disposal points and regular collection of waste • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. • Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility.	Work sites / During the construction period	Contractor		√			Waste Disposal Ordinance (Cap.54) ETWB TCW No. 19/2005

EIA Ref	Environmental Protection Measures/Mitigation Measures	Location/Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S10.22	*Waste Reduction Measures* 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 indifferent containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal • Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce • Proper storage and site practices to minimise the potential for damage or contamination of construction materials • Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. • A recording system for the amount of wastes generated, recycled and disposed (including disposal sites) should be proposed. • Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.	Work sites / During planning & design stage, and construction stage	Contractor	√	√			
S10.24	*General Refuse* General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	Work sites / During the construction period	Contractor		√			Public Health and Municipal Services Ordinance (Cap. 132)

EIA Ref	Environmental Protection Measures/Mitigation Measures	Location/Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S10.25	*Construction and Demolition Material* In order to minimise impacts resulting from collection and transportation of C&D material for off-site disposal, the excavated material generated from excavation works for the proposed chlorination plant, dechlorination plant, day tank and pipe trenches should be reused on-site as backfilling material as far as practicable. The surplus excavated material should be disposed of at the designated public fill reception facility, as agreed with the Secretary of the Public Fill Committee, for other beneficial uses. C&D waste generated from site clearance and dismantling of formwork would require disposal to the designated landfill site. In order to monitor the disposal of C&D material at the public fill reception facility and landfill and to control fly-tipping, a trip-ticket system should be included. One may make reference to ETWB TCW No. 31/2004 for details.	Work sites / During design stage and construction period	Contractor	√	√			ETWB TCW No. 33/2002 ETWB TCW No. 19/2005
S10.26	*Chemical Waste* If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work sites / During the construction period	Contractor		√			Waste Disposal (Chemical Waste) (General) Regulation

All recommendations and requirements resulted during the course of EIA/EA Process, including ACE and / or accepted public comment to the proposed project.

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

APPENDIX K
SUMMARY OF WASTE GENERATION IN THE REPORTING MONTH

Appendix K

Contract No.: DC/2007/20

Monthly Summary Waste Flow Table For 2009 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Waste Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 2)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 1)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	0.110	0.000	0.000	0.000	0.110	0.000	0.000	0.000	0.000	0.000	0.000
Feb	0.125	0.000	0.000	0.000	0.125	0.000	0.000	0.000	0.000	0.000	0.000
Mar	0.160	0.000	0.000	0.000	0.160	0.000	0.000	0.000	0.000	0.000	0.020
Apr	0.075	0.000	0.000	0.000	0.075	0.000	0.000	0.000	0.000	0.000	0.000
May	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.030
Jun	0.025	0.000	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.001
Sub-total	**0.745**	**0.000**	**0.000**	**0.000**	**0.745**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.051**
July	0.150	0.000	0.000	0.000	0.150	0.000	0.000	0.000	0.000	0.000	0.005
Aug	0.060	0.000	0.000	0.000	0.060	0.000	0.000	0.000	0.000	0.000	0.020
Sep	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
Oct											
Nov											
Dec											
Total	**1.184**	**0.000**	**0.000**	**0.000**	**0.955**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.077**

Notes: (1) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(2) Broken concrete for recycling into aggregates.

Monthly Summary Waste Flow Table For 2008 (year)

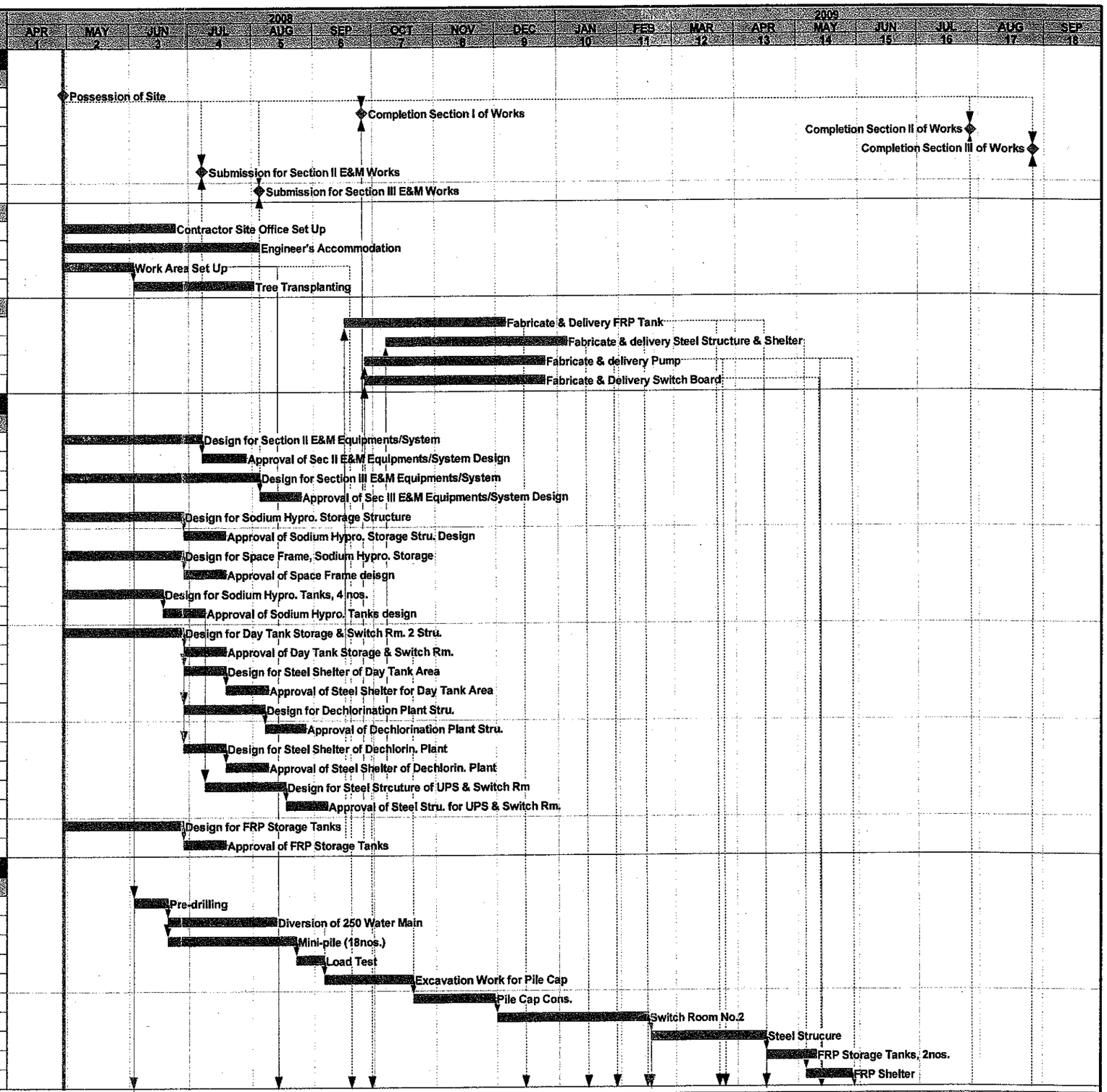
Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Waste Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 2)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 1)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan											
Feb											
Mar											
Apr											
May	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
Sub-total	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.060**
July	0.400	0.000	0.000	0.000	0.400	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.654	0.000	0.000	0.000	0.654	0.000	0.000	0.000	0.000	0.000	0.000
Sep	1.250	0.000	0.000	0.000	1.250	0.000	0.000	0.000	0.000	0.000	0.000
Oct	1.765	0.000	0.000	0.000	1.765	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.080	0.000	0.000	0.000	0.080	0.000	0.000	0.000	0.000	0.000	0.040
Dec	0.475	0.000	0.000	0.000	0.475	0.000	0.000	0.000	0.000	0.000	0.000
Total	**4.624**	**0.000**	**0.000**	**0.000**	**4.624**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.100**

Notes: (1) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(2) Broken concrete for recycling into aggregates.

APPENDIX L
CONSTRUCTION PROGRAMME

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float	Cal ID
General						
Project Key Date						
1000	Possession of Site	0	29/04/08*		0	3
1040	Completion Section I of Works	0		25/09/08*	0	3
1090	Completion Section II of Works	0		27/07/09*	0	3
1570	Completion Section III of Works	0		26/08/09*	0	3
1600	Submission for Section II E&M Works	0		07/07/08*	0	3
1610	Submission for Section III E&M Works	0		04/08/08*	0	3
Preliminaries						
1010	Contractor Site Office Set Up	45	29/04/08	23/06/08	349	2
1020	Engineer's Accommodation	80	29/04/08	04/08/08	314	2
1030	Work Area Set Up	28	29/04/08	02/06/08	0	2
1035	Tree Transplanting	50	03/06/08	01/08/08	316	2
Material Fabrication & Delivery						
1045	Fabricate & Delivery FRP Tank	80	17/09/08	05/12/08	9	3
1095	Fabricate & delivery Steel Structure & Shelter	90	08/10/08	05/01/09	10	3
1145	Fabricate & delivery Pump	90	27/09/08	25/12/08	90	3
1155	Fabricate & Delivery Switch Board	90	27/09/08	25/12/08	112	3
Section I						
Design Submission						
1002	Design for Section II E&M Equipments/System	70	29/04/08	07/07/08	0	3
1004	Approval of Sec II E&M Equipments/System Design	21	08/07/08	28/07/08	59	3
1006	Design for Section III E&M Equipments/System	98	29/04/08	04/08/08	0	3
1008	Approval of Sec III E&M Equipments/System Design	21	05/08/08	25/08/08	31	3
1050	Design for Sodium Hypro. Storage Structure	60	29/04/08	27/06/08	69	3
1055	Approval of Sodium Hypro. Storage Stru. Design	21	28/06/08	18/07/08	69	3
1060	Design for Space Frame, Sodium Hypro. Storage	60	29/04/08	27/06/08	69	3
1065	Approval of Space Frame deisgn	21	28/06/08	18/07/08	69	3
1070	Design for Sodium Hypro. Tanks, 4 nos.	50	29/04/08	17/06/08	18	3
1075	Approval of Sodium Hypro. Tanks design	21	18/06/08	08/07/08	18	3
1080	Design for Day Tank Storage & Switch Rm. 2 Stru.	60	29/04/08	27/06/08	9	3
1085	Approval of Day Tank Storage & Switch Rm.	21	28/06/08	18/07/08	9	3
1100	Design for Steel Shelter of Day Tank Area	21	28/06/08	18/07/08	10	3
1105	Approval of Steel Shelter for Day Tank Area	21	19/07/08	08/08/08	10	3
1110	Design for Dechlorination Plant Stru.	40	28/06/08	06/08/08	29	3
1115	Approval of Dechlorination Plant Stru.	21	07/08/08	27/08/08	29	3
1120	Design for Steel Shelter of Dechlorin. Plant	21	28/06/08	18/07/08	48	3
1125	Approval of Steel Shelter of Dechlorin. Plant	21	19/07/08	08/08/08	48	3
1130	Design for Steel Strcuture of UPS & Switch Rm	40	09/07/08	17/08/08	18	3
1135	Approval of Steel Stru. for UPS & Switch Rm.	21	18/08/08	07/09/08	18	3
1140	Design for FRP Storage Tanks	60	29/04/08	27/06/08	69	3
1470	Approval of FRP Storage Tanks	21	28/06/08	18/07/08	69	3
Section II						
Day Tank Storage Area & Switch Rm No.2						
1150	Pre-drilling	14	03/06/08	19/06/08	2	2
1153	Diversion of 250 Water Main	45	20/06/08	12/08/08	23	2
1160	Mini-pile (18nos.)	54	20/06/08	22/08/08	2	2
1170	Load Test	14	23/08/08	05/09/08	3	3
1175	Excavation Work for Pile Cap	35	06/09/08	20/10/08	2	2
1180	Pile Cap Cons.	35	21/10/08	29/11/08	2	2
1190	Switch Room No.2	60	01/12/08	14/02/09	2	2
1200	Steel Strucure	45	16/02/09	14/04/09	2	2
1215	FRP Storage Tanks, 2nos.	20	15/04/09	09/05/09	2	2
1220	FRP Shelter	20	05/05/09	27/05/09	2	2



Start Date	29/04/08
Finish Date	26/08/09
Data Date	29/04/08
Run Date	16/07/08 14:36

?Primavera Systems, Inc.

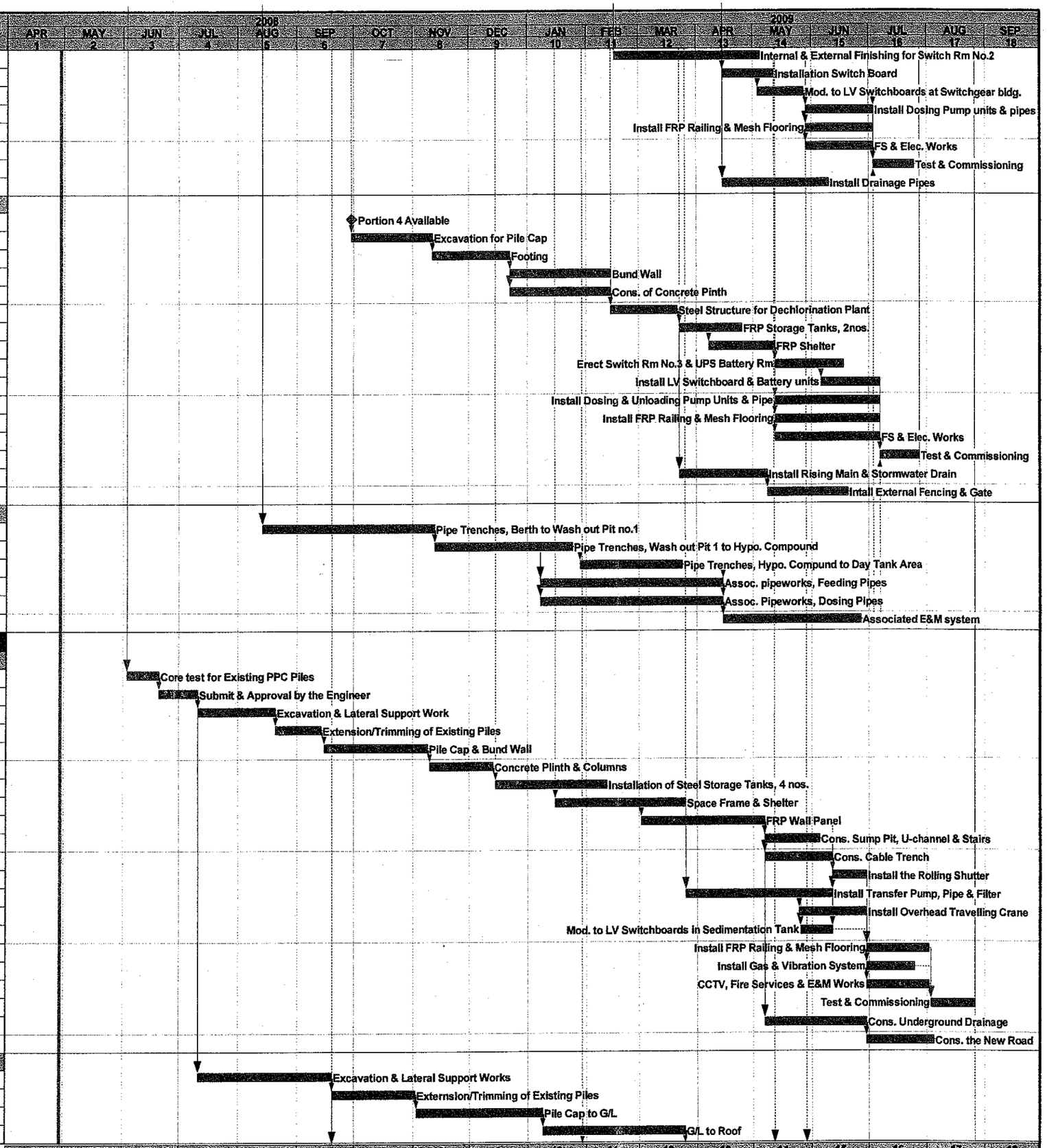
Early Bar
Progress Bar
Critical Activity

ST02 Sheet 1 of 3

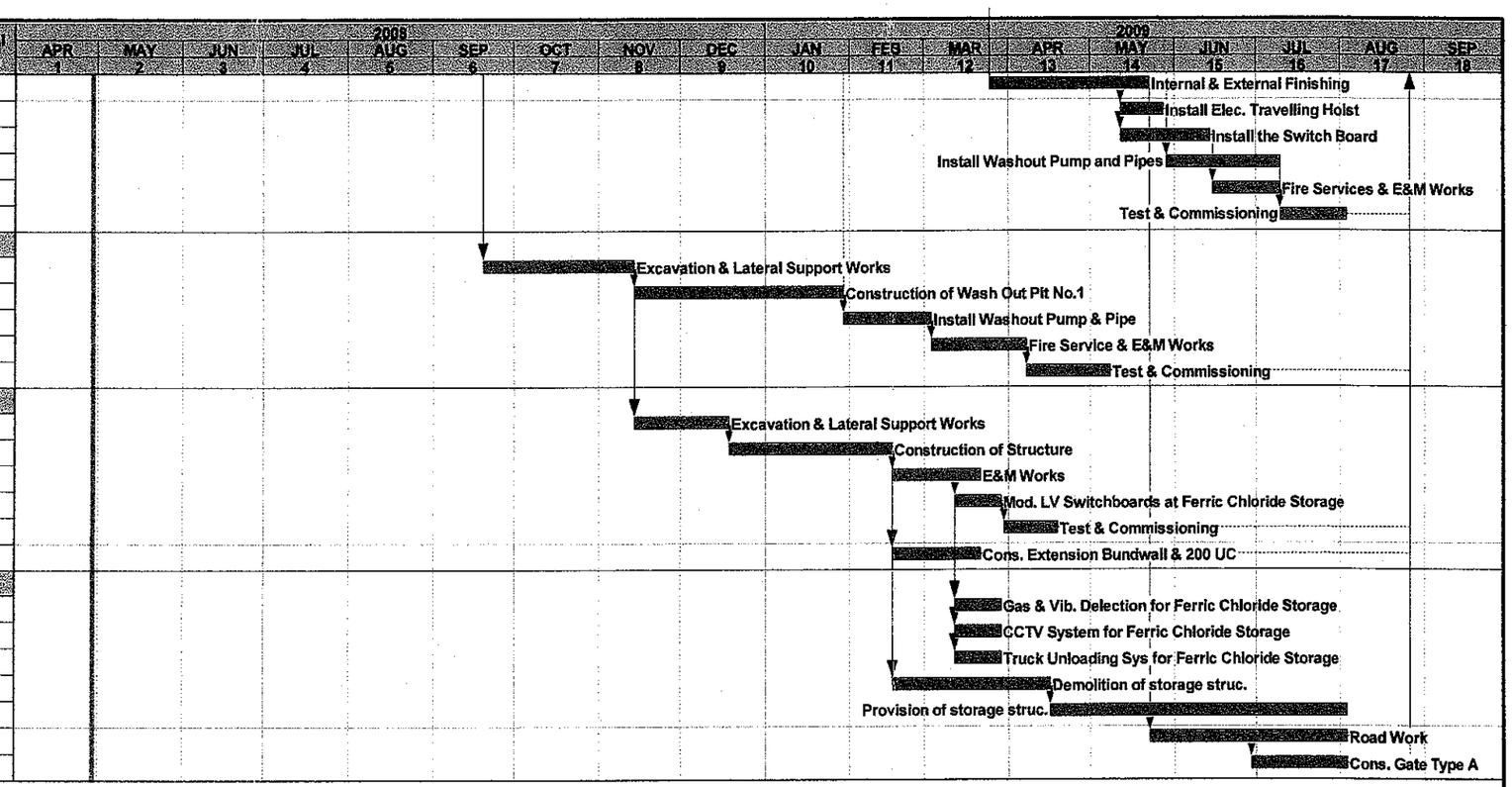
China Harbour Engineering Co. Ltd.
Contract No. DC/2007/20
Harbour Area Treatment Scheme Stage 2A
Works Programme

Date	Revision	Checked	Approved
16/07/08	Rev B	Tim	

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float	Cal ID
1280	Internal & External Finishing for Switch Rm No.2	60	16/02/09	04/05/09	2	2
1282	Installation Switch Board	21	15/04/09	11/05/09	2	2
1292	Mod. to LV Switchboards at Switchgear bldg.	21	04/05/09	27/05/09	2	2
1302	Install Dosing Pump units & pipes	30	29/05/09	03/07/09	2	2
1312	Install FRP Railing & Mesh Flooring	30	29/05/09	03/07/09	2	2
1322	FS & Elec. Works	30	29/05/09	03/07/09	2	2
1332	Test & Commissioning	18	04/07/09	24/07/09	2	2
1342	Install Drainage Pipes	45	15/04/09	09/06/09	40	2
Dechlorination Plant,Switch Rm No.3, UPS Battery						
1225	Portion 4 Available	0	30/09/08*		0	2
1230	Excavation for Pile Cap	35	30/09/08	11/11/08	0	2
1235	Footing	35	12/11/08	22/12/08	0	2
1238	Bund Wall	40	23/12/08	13/02/09	0	2
1239	Cons. of Concrete Pinth	40	23/12/08	13/02/09	0	2
1240	Steel Structure for Dechlorination Plant	30	14/02/09	21/03/09	0	2
1250	FRP Storage Tanks, 2nos.	25	23/03/09	24/04/09	0	2
1260	FRP Shelter	25	08/04/09	12/05/09	0	2
1270	Erect Switch Rm No.3 & UPS Battery Rm	30	13/05/09	17/06/09	0	2
1290	Install LV Switchboard & Battery units	25	06/06/09	06/07/09	0	2
1540	Install Dosing & Unloading Pump Units & Pipe	45	13/05/09	06/07/09	0	2
1550	Install FRP Railing & Mesh Flooring	45	13/05/09	06/07/09	0	2
1620	FS & Elec. Works	45	13/05/09	06/07/09	0	2
1630	Test & Commissioning	18	07/07/09	27/07/09	0	2
1640	Install Rising Main & Stormwater Drain	35	23/03/09	08/05/09	31	2
1650	Intall External Fencing & Gate	35	09/05/09	19/06/09	31	2
Associated Pipeworks & Utilities						
1300	Pipe Trenches, Berth to Wash out Pit no.1	75	14/08/08	12/11/08	7	2
1305	Pipe Trenches, Wash out Pit 1 to Hypo. Compound	60	13/11/08	24/01/09	7	2
1307	Pipe Trenches, Hypo. Compund to Day Tank Area	45	29/01/09	23/03/09	7	2
1310	Assoc. pipeworks, Feeding Pipes	75	08/01/09	14/04/09	7	2
1315	Assoc. Pipeworks, Dosing Pipes	75	08/01/09	14/04/09	7	2
1580	Associated E&M system	60	15/04/09	26/06/09	7	2
Section III						
Sodium Hypochlorite Storage Compund						
1335	Core test for Existing PPC Piles	14	03/06/08	19/06/08	0	2
1337	Submit & Approval by the Engineer	21	20/06/08	10/07/08	0	3
1340	Excavation & Lateral Support Work	35	11/07/08	20/08/08	0	2
1343	Extension/Trimming of Existing Piles	21	21/08/08	13/09/08	0	2
1345	Pile Cap & Bund Wall	45	16/09/08	08/11/08	0	2
1348	Concrete Plinth & Columns	30	10/11/08	13/12/08	0	2
1350	Installation of Steel Storage Tanks, 4 nos.	45	15/12/08	11/02/09	0	2
1360	Space Frame & Shelter	55	16/01/09	25/03/09	0	2
1370	FRP Wall Panel	50	02/03/09	06/05/09	0	2
1380	Cons. Sump Pit, U-channel & Stairs	24	07/05/09	04/06/09	6	2
1480	Cons. Cable Trench	30	07/05/09	11/06/09	0	2
1485	Install the Rolling Shutter	15	12/06/09	29/06/09	0	2
1590	Install Transfer Pump, Pipe & Filter	60	26/03/09	11/06/09	0	2
1660	Install Overhead Travelling Crane	30	25/05/09	29/06/09	0	2
1670	Mod. to LV Switchboards in Sedimentation Tank	14	26/05/09	11/06/09	22	2
1675	Install FRP Railing & Mesh Flooring	28	30/06/09	01/08/09	0	2
1680	Install Gas & Vibration System	21	30/06/09	24/07/09	7	2
1690	CCTV, Fire Services & E&M Works	28	30/06/09	01/08/09	0	2
1700	Test & Commissioning	21	03/08/09	26/08/09	0	2
1710	Cons. Underground Drainage	45	07/05/09	29/06/09	19	2
1720	Cons. the New Road	30	30/06/09	04/08/09	19	2
Switch Room No.1 & Wash Out Chamber NO.2						
1390	Excavation & Lateral Support Works	60	11/07/08	19/09/08	20	2
1395	Externsion/Trimming of Existing Piles	35	20/09/08	01/11/08	20	2
1400	Pile Cap to G/L	55	03/11/08	08/01/09	20	2
1410	G/L to Roof	60	09/01/09	24/03/09	20	2



Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float	Cal ID
1420	Internal & External Finishing	45	25/03/09	22/05/09	20	2
1430	Install Elec. Travelling Hoist	14	12/05/09	27/05/09	20	2
1530	Install the Switch Board	28	12/05/09	13/06/09	20	2
1730	Install Washout Pump and Pipes	35	29/05/09	09/07/09	20	2
1740	Fire Services & E&M Works	21	15/06/09	09/07/09	20	2
1750	Test & Commissioning	21	10/07/09	03/08/09	20	2
Washout Chamber No.1						
1435	Excavation & Lateral Support Works	45	20/09/08	13/11/08	20	2
1440	Construction of Wash Out Pit No.1	60	14/11/08	29/01/09	93	2
1760	Install Washout Pump & Pipe	28	30/01/09	03/03/09	93	2
1770	Fire Service & E&M Works	28	04/03/09	07/04/09	93	2
1775	Test & Commissioning	21	08/04/09	07/05/09	93	2
Barge Unloading Area						
1450	Excavation & Lateral Support Works	30	14/11/08	18/12/08	20	2
1460	Construction of Structure	45	19/12/08	16/02/09	20	2
1520	E&M Works	28	17/02/09	21/03/09	107	2
1780	Mod. LV Switchboards at Ferric Chloride Storage	14	12/03/09	28/03/09	107	2
1790	Test & Commissioning	14	30/03/09	18/04/09	107	2
1800	Cons. Extension Bundwall & 200 UC	28	17/02/09	21/03/09	127	2
Others						
1482	Gas & Vib. Delection for Ferric Chloride Storage	14	12/03/09	28/03/09	121	2
1484	CCTV System for Ferric Chloride Storage	14	12/03/09	28/03/09	121	2
1486	Truck Unloading Sys for Ferric Chloride Storage	14	12/03/09	28/03/09	121	2
1490	Demolition of storage struc.	45	17/02/09	15/04/09	20	2
1500	Provision of storage struc.	90	16/04/09	03/08/09	20	2
1510	Road Work	60	23/05/09	03/08/09	20	2
1810	Cons. Gate Type A	30	29/06/09	03/08/09	20	2



1 APR 2 MAY 3 JUN 4 JUL 5 AUG 2008 6 SEP 7 OCT 8 NOV 9 DEC 10 JAN 11 FEB 12 MAR 13 APR 14 MAY 2009 15 JUN 16 JUL 17 AUG 18 SEP

APPENDIX M
COMPLAINT LOG

APPENDIX M – Complaint Log

Reporting Month: August 2009

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 from July 2008 to July 2009.