Expansion of Shek Wu Hui Sewage Treatment Works

Monthly EM&A Report No. 31

for June 2008

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MAEDA

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Monthly EM&A Report No. 31 for June 2008

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Certified by Environmental Team Leader
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Hyder Consulting

Contents

1 Executive Summary 1

2 Introduction 3

2.1 Basic Information 3
2.2 Management Structure and Project Organisation 3
2.3 Construction Programme 4
2.4 Works Undertaken during the Reporting Month 4
2.5 Status of Environmental Permit/ Licence 4

3 Environmental Status 5

3.1 Works Undertaken during the Month with Illustrations 5
3.2 Project Area, Environmental Sensitive Receivers and Monitoring Locations 5

4 Brief Summary of EM&A Requirements 5

4.1 Monitoring Parameters 5
4.2 Action and Limit Levels 6
4.3 Event and Action Plans 6
4.4 Environmental Mitigation Measures and Requirements 9

5 Implementation Status of Environmental Protection and Pollution Control/ Mitigation Measures 9

6 Monitoring Results 9

6.1 Monitoring Methodology 9
6.2 Name of Laboratory, Types of Equipment Used and Calibration Details 11
6.3 Parameters Monitored 12
6.4 Monitoring Locations 12
6.5 Monitoring Date, Time, Frequency and Duration, Weather Condition and Other Factors 12
6.6 Results and Graphical Plots of Monitoring Parameters 14
6.7 Factors Which Might Affect the Monitoring Results 16
6.8 QA/QC Results and Detection Limit 16

7 Non-compliance, Complaints, Notifications of Summons and Successful Prosecutions 17

7.1 Non-compliance of Action and Limit Levels 17
7.2 Complaints Received 17
7.3 Notifications of Summons and Successful Prosecutions 17
7.4 Review of the Reasons and Implications of Non-compliance, Complaints, Summons and Prosecutions 18
7.5 Site Inspection 18

8 Waste Management Status 19

9 Future Key Issues 19

10 Comments, Recommendations and Conclusions 20

List of Tables

Table 2-1	Key Personnel Contact Names and Telephone Number for the Project	4
Table 2-2	Status of Permit/Licence for the Project	5
Table 4-1	Event/ Action Plan for Air Quality Monitoring	8
Table 4-2	Event/ Action Plan for Noise Monitoring	9
Table 6-1	Monitoring Equipment	12
Table 6-2	Air Quality Monitoring Locations	12
Table 6-3	Noise Monitoring Locations	12
Table 6-4	Sampling Schedule of Air Quality Monitoring	13
Table 6-5	Sampling Schedule of Noise Monitoring	14
Table 6-6	Air Quality Monitoring Results	16
Table 6-7	Noise Monitoring Results	16
Table 7-1	Summaries of Site Inspections and Recommendations	19

List of Appendices

Appendix 1	Project Organization
Appendix 2	Construction Programme
Appendix 3	Location of Works
Appendix 4	Project Area, Environmental Sensitive Receiver and Monitoring Location
Appendix 5	Action and Limit Levels
Appendix 6	Environmental Requirement and Implementation Status
Appendix 7	Calibration Records
Appendix 8	Monitoring Results and Graphical Plots
Appendix 9	QA/QC Results and Detection Limit
Appendix 10	Cumulative Number of Complaint, Notification of Summon and Successful Prosecution
Appendix 11	Upcoming EM&A Schedule
Appendix 12	Monitoring Changes for June 2008

1 Executive Summary

The expansion of Shek Wu Hui Sewage Treatment Works (SWHSTW) aims to increase the treatment capacity of the existing SWHSTW to cope with the increasing wastewater flows and loads as a result of the population growth in the catchment area of Fanling/Sheung Shui and the committed extension of sewerage system to unsewered areas. It is considered as a project constituting a material change to an exempted designated project under Schedule 2 of EIAO. Thus, the procedures under the EIAO have been followed and an Environmental Monitoring and Audit (EM&A) Programme has to be carried out. The present report documents the outcomes of the EM&A Works undertaken during June 2008.

Breaches of Action and Limit Levels

Noise

No non-compliance of action/limit level was recorded at all monitoring stations for noise during the reporting month.

1-hr and 24-hr TSP

An action-level exceedance has been measured from the first of the three 1-hr TSP measurements on 13 June 2008. The scheduled consecutive monitoring from14.20-15.20 & 15.20-16.20 have no action level exceedance.
The repeat measurements stated in the EM&A Event/Action Plan were not applicable, as consecutive monitoring had already been carried out under the scheduled program. In addition the scheduled Air Quality monitoring from 19 June is also below the action level.
It is not considered that the action-level exceedance is project related for the following reasons:

- close to the monitoring station (within 6 to 8m distance), it was observed that construction activities by China Light Power (CLP) were ongoing at the same time as the exceedance was recorded. These works included cable laying with sporadic opening of a trench, which is a potential dust generating operation.

It is considered that the exceedance was caused by nearby offsite (non-project) construction activities and not by activities carried out under this contract.

Complaints Log

During this reporting month, no environmental complaint was received.

Notifications of Any Summons and Successful Prosecutions

During the reporting month, no notification of summons or successful prosecution was recorded.

Reporting Changes

Due to adverse weather conditions and a mechanical failure of the HVAS at monitoring station CAM 1a the monitoring in the month of June 2008 is not completely in line with original schedule. For Noise Monitoring, 24 hr air monitoring and 1 hr air

monitoring the frequency of monitoring at the beginning of June is outside that stipulated in the EM&A Manual (Table 2.3 of section 2.6 and section 5.6).

Explanations for this and follow-up actions, which were undertaken, are detailed in section 6.5 and in the tables in Appendix 12.

Parameter	Monitoring location	Monitoring dates
1-hr TSP monitoring	San Po Street Pumping Station (CAM1a)	3 June, 7 June*, *12 June*, 13 June, 19 June, 25 June, 30 June
	Sheung Shui Heung Floodwater Pumping Station (CAM2a)	3 June, 7 June*, *12 June*, 13 June, 19 June, 25 June, 30 June
24-hr TSP monitoring	San Po Street Pumping Station (CAM1a)	3 June, 7 June*, *12 June****, 13 June****, *16 June*, 19 June, 25 June, 30 June
	Sheung Shui Heung Floodwater Pumping Station (CAM2a)	3 June, 7 June*, *12 June*, 13 June, 19 June, 25 June, 30 June
Noise monitoring	San Po Street Pumping Station (CAM1a)	3 June, 13 June**, 19 June, 25 June**, *27 June*, 30 June
	Sheung Shui Heung Floodwater Pumping Station (CAM2a)	3 June, 13 June**, 19 June, 25 June**, *27 June*, 30 June

Note: Dates in Italic refer to additional monitoring

*Black Rainstorm Warning Signal

**Heavy rainfall

***No Results due to power failure

Future Key Issues

The construction activities for the coming three months will include excavation and backfilling, temporary work including installation of waling and struts, pipe works, installation of cat ladders, roofing and finishing works, structural steelwork with FRP covers, roadwork, cable ducts and cable drawpits and landscaping work.

2 Introduction

2.1 Basic Information

Shek Wu Hui Sewage Treatment Works (SWHSTW) provides treatment to the wastewater generated from Fanling/Sheung Shui areas before discharge it into Mai Po Inner Deep Bay Ramsar Site through River Indus and Shenzhen River, thus helps protecting the water quality of River Indus, Shenzhen River and Mai Po Inner Deep Bay Ramsar Site. The expansion of SWHSTW aims to expand the treatment capacity of the existing SWHSTW to cope with the increasing wastewater flows and loads as a result of the population growth in the catchment area of Fanling/Sheung Shui and the committed extension of sewerage system to unsewered areas.

In accordance with Section 9(2)(g) of the Environmental Impact Assessment Ordinance (EIAO), the SWHSTW is an exempted designated project as the existing SWHSTW has been in operation before the EIAO came into effect on 1 April 1998. However, since the proposed works involve physical expansion and alternation to the existing SWHSTW (hereafter called "the Project") and may cause adverse environmental impacts if mitigation measures are not in place, it shall be considered as a project constituting a material change to an exempted designated project under Schedule 2 of EIAO. Hence the procedures under the EIAO have been followed. A Project Profile (PP) for direct application of the EP (Application No.DIR-121/2005) was approved by Environmental Protection Department (EPD) in May 2005 and an environmental permit (EP-218/2005) was obtained prior to the commencement of the expansion works.

Drainage Services Department (DSD) awarded the civil contract of the expansion of SWHSTW to Maeda Corporation (Maeda) in September 2005. Maeda appointed Hyder Consulting Limited (HCL) as the Contractor's Environmental Team (ET) during the construction period. CH2M HILL Hong Kong Limited (formerly known as CH2M-IDC Hong Kong Limited) is the independent environmental checker (IEC). The construction contract commenced in September 2005 and the total construction period is approximately 36 months. The notified commencement date of work to the Director of EPD is 14 December 2005.

2.2 Management Structure and Project Organisation

The Engineer (DSD) is responsible for overseeing the construction works and ensuring that they are undertaken by the Contractor (Maeda) in accordance with the specifications and contractual requirements. The Contractor shall report to the Engineer. The ET is employed by the Contractor and is responsible for conducting the EM&A programme. The IEC shall advise the Engineer on the environmental issues related to the Project.

The key personnel contact names and telephone number are summarised in Table 2-1. The project organisation is shown in Appendix 1.

Party	Position	Name	Telephone number
Project Proponent - DSD	Project Manager	Raymond Lee	2594 7457
	Engineer's Representative	Freddie Tsang	2594 7459
Contractor - Maeda	Site Agent	George Cheung	9268 1918
ET - Hyder	ET Leader	Alexi Bhanja	2911 2916
IEC – CH2M HILL	IEC	Y.T. Tang	3105 8686

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

2.3 Construction Programme

Construction programme of the Project is attached in Appendix 2.

2.4 Works Undertaken during the Reporting Month

Works undertaken during the reporting month included:

-Excavation and backfilling

-Temporary work including installation of waling and struts

-Manhole/Chamber construction

-Pipe laying

-Installation of FRP covers

-Finishing work

-Road Works; and

-Cable Ducts and Cable Drawpits.

2.5 Status of Environmental Permit/ Licence

The status of the Environmental Permit/Licence for the Project is shown below.

Permit/Licence	Application Date	Date of issue	Ref. No.	Valid Until
Environmental Permit	21 May 2005	16 June 2005	EP-218/2005	End of Project
Notification was made to EPD pursuant to Section 3(1) of the Air Pollution Control (Construction Dust) Regulation (Form NA was submitted)	22 Sep 2005	N/A	N/A	End of Project
Registration as a chemical waste producer	26 Sep 2005	4 Nov 2005	WPN: 5213-624-M2446-06	End of Project

Permit/Licence	Application Date	Date of issue	Ref. No.	Valid Until
Effluent Discharge Licence	11 Nov 2005	20 Dec 2005	Licence No.: W5/1I287/1	19 Dec 2010
Application for Exemption Account for Disposal of Construction Waste	12 Dec 2005	Approved by EPD on 31 Dec 2005	Application No.: RN/00134	25 Sep 2008
Construction Noise Permit	15 Nov 2007	29 Nov 2007	GW-RN0507-07	31 May 2008

Table 2-2 Status of Permit/Licence for the Project

3 Environmental Status

3.1 Works Undertaken during the Month with Illustrations

The site has been subdivided into different Works Areas/Portions as illustrated in Appendix 3. Excavation, backfilling, pipe laying and finishing work were undertaken in Portions 1,2 & 3. Installation of waling struts, Manhole/Chamber construction and the installation of FRP covers were undertaken in Portion 1.

3.2 Project Area, Environmental Sensitive Receivers and Monitoring Locations

The site is located at the existing Shek Wu Hui Sewage Treatment Plant, next to Chuk Wan Street. The project area, environmental sensitive receivers and monitoring locations are shown in Appendix 4.

4 Brief Summary of EM&A Requirements

4.1 Monitoring Parameters

4.1.1 Air Quality

During the construction phase impact monitoring, 1-hour and 24-hour Total Suspended Particulates (TSP) levels should be measured at the selected air monitoring locations in accordance with the EM&A Manual. These two parameters are aimed to indicate the impacts of construction dust on air quality.

4.1.2 Noise

The construction noise level should be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}) for 30 minutes. $L_{eq(30\ min)}$ is used as the monitoring parameter for the period between 0700 and 1900 hours on normal weekdays. For all other time periods, three consecutive $L_{eq(5min)}$ are employed for comparison with the Noise Control Ordinance (NCO) criteria.

Other noise parameters such as L_{10} and L_{90} should also be obtained for reference.

4.2 Action and Limit Levels

4.2.1 Air Quality

The baseline monitoring results documented in the Baseline Monitoring Report for the Project (our report ref.: EA01284R0012) form the basis for derivation of the Action and Limit Levels for air quality impact monitoring. Appendix 5 shows the derived Action and Limit Levels for the Project. If the air quality criteria are exceeded due to the Project, the Event/Action Plan summarised in Table 4-3 should be triggered immediately.

4.2.2 Noise

The Action and Limit Levels for construction noise are defined in Appendix 5. If valid non-compliance of the criteria occurs, actions in accordance with the Event and Action Plan in Table 4-4 should be implemented. If construction works are undertaken during the restricted hours, a construction noise permit under NCO shall be obtained by the Contractor.

4.3 Event and Action Plans

The Event and Action Plans for air quality and noise monitoring are shown in Tables 4-3 and 4-4, respectively.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
Exceedance for one sample	• Identify source, investigate the causes of exceedance and propose remedial measures; • Inform IEC and ER; • Repeat measurement to confirm finding.	• Check monitoring data submitted by ET; • Check Contractor's working method.	• Notify Contractor.	• Rectify any unacceptable practice; • Amend working methods if appropriate.
Exceedance for two or more consecutive samples	• Identify source, investigate the cause of exceedance and propose remedial measures; • Inform IEC and ER; • Advise ER on the effectiveness of the proposed remedial measures; • Repeat measurements to confirm findings; • Increase monitoring	• Check monitoring data submitted by ET; • Check Contractor's working method; • Discuss with ET and Contractor on possible remedial measures; • Advise the ET on the effectiveness of the proposed remedial measures; • Supervise	• Confirm receipt of notification of exceedance in writing; • Notify Contractor; • Ensure remedial measures properly implemented.	• Submit proposals for remedial to ER within 3 working days of notification; • Implement the agreed proposals; • Amend proposal if appropriate.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	frequency to daily; • Discuss with IEC and Contractor on remedial actions required; • If exceedance continues, arrange meeting with IEC and ER; • If exceedance stops, cease additional monitoring.	Implementation of remedial measures.		
LIMIT LEVEL				
Exceedance for one sample	• Identify source, investigate the causes of exceedance and propose remedial measures; • Inform IEC, ER, Contractor and EPD; • Repeat measurement to confirm finding; • Increase monitoring frequency to daily; • Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. • If exceedance stops, cease additional monitoring.	• Check monitoring data submitted by ET; • Check Contractor's working method; • Discuss with ET and Contractor on possible remedial measures; • Advise ER on the effectiveness of the proposed remedial measures; • Supervise implementation of remedial measures.	• Confirm receipt of notification of exceedance in writing; • Notify Contractor; • Ensure remedial measures properly implemented.	• Take immediate action to avoid further exceedance; • Submit proposals for remedial actions to IEC within 3 working days of notification; • Implement the agreed proposals; • Amend proposal if appropriate.
Exceedance for two or more consecutive samples	• Notify IEC, ER, Contractor and EPD; • Identify source, investigate the cause of exceedance and propose remedial measures; • Repeat measurement to confirm findings; • Increase monitoring frequency to daily; • Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; • Arrange meeting with IEC and ER to discuss the remedial actions to be taken;	• Discuss amongst ER, ET, and Contractor on the potential remedial actions; • Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly; • Supervise the implementation of remedial measures.	• Confirm receipt of notification of exceedance in writing; • Notify Contractor; • In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; • Ensure remedial measures properly implemented; • If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	• Take immediate action to avoid further exceedance; • Submit proposals for remedial actions to IEC within 3 working days of notification; • Implement the agreed proposals; • Resubmit proposals if problem still not under control; • Stop the relevant portion of works as determined by ER until the exceedance is abated.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	• Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; • If exceedance stops, cease additional monitoring.			

Table 4-1 Event/ Action Plan for Air Quality Monitoring

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

EVENT	Action			
	ET	IEC	ER	CONTRACTOR
	results; • If exceedance stops, cease additional monitoring.			

Table 4-2 Event/ Action Plan for Noise Monitoring

4.4 Environmental Mitigation Measures and Requirements

The recommended measures for mitigating air quality, water quality, noise, waste and all other possible environmental impacts due to the construction works have been stated clearly in the EM&A Manual. The details of the measures implemented by the Contractor are shown in Appendix 6.

5 Implementation Status of Environmental Protection and Pollution Control/ Mitigation Measures

The status of the mitigation measures implemented by the Contractor is listed in Appendix 6.

6 Monitoring Results

6.1 Monitoring Methodology

6.1.1 Air Quality

1-hr and 24-hr TSP monitoring works were undertaken by the ET using high volume samplers (HVS). The sampling procedures followed the standard sampling method as set out in High Volume Method for Total Suspended Particulates, Part 50 Chapter 1 Appendix B, Title 40 of the Code of Federal Regulations of the USEPA.

During the sampling, dust laden air was drawn through a HVS fitted with a conditioned, pre-weighted filter paper, at a controlled rate. After sampling for 1 hour and 24 hours, the filter paper with retained particles was collected and returned to the laboratory for drying in a desiccator followed by accurate weighing. Respective 1-hour and 24-hour TSP levels were calculated from the ratio of the mass of particulates retained on the filter paper to the total volume of air sampled.

The HVSs were equipped with an electronic mass flow controller and calibrated against a traceable standard at regular intervals. All equipment, calibration kit and filter papers were clearly labelled.

The sampling procedures and specifications were the same for 1-hour and 24-hour baseline air quality monitoring except the sampling duration. The specifications were as follows:

- 0.6-1.7 m^3/min (20-60SCFM);
- Equipped with a timing/control device with +/- 5 minutes accuracy for 24 hours operation;
- Installed with elapsed time meter with +/- 2 minutes accuracy for 24 hours operation;
- Capable of providing a minimum exposed area of 406 cm^2 (63in^2);
- Flow control accuracy: +/- 2.5% deviation over 24-hr sampling period;
- Equipped with a shelter to protect the filter and sampler;
- Incorporated with an electronic mass flow rate controller or other equivalent devices;
- Equipped with a flow recorder for continuous monitoring;
- Provided with a peaked roof inlet;
- Incorporated with a manometer;
- Able to hold and seal the filter paper to the sampler housing at horizontal position;
- Easy to change the filter; and
- Capable of operating continuously for a 24-hour period.

Relevant environmental data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and other special phenomena observed and work progress of the concerned site were also recorded.

Filter papers of size 8"x10" were labelled before sampling. They were inspected clean with no pin holes and conditioned in a humidity-controlled chamber for over 24-hr and be pre-weighed before use for the sampling.

After sampling, the filter papers loaded with dust were kept in a clean and tightly sealed plastic bag, and then returned for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with a readout down to 0.1 mg. All the collected samples would be kept in a good condition for 6 months before disposal.

The weight of filter paper was measured by a HOKLAS accredited laboratory.

6.1.2 Noise

Weatherproof logging sound level meters which comply with the International Electrotechnical Commission Publication 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications were used to measure the construction noise at the designated monitoring locations. Noise parameters of the A-weighted levels L_{eq}, L_{10} and L_{90} were measured with a sampling period of 5 minutes throughout the monitoring. The average of six consecutive 5-minute readings was used to provide $L_{eq(30\ minutes)}$ for non-restricted hours. A facade correction of 3dB(A) would be applied to all free field measurements.

During the impact monitoring, information such as date, weather condition, equipment used, measurement results and major noise sources were recorded on the field data record sheet. Noise measurements would not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed would be checked with a portable wind speed meter capable of measuring wind speed in m/s. All measurements were recorded to the nearest 0.1dB(A).

6.2 Name of Laboratory, Types of Equipment Used and Calibration Details

6.2.1 Name of Laboratory

Filter papers used for air quality monitoring were sent to ALS Environmental, a HOKLAS accredited laboratory, for weighing. Other sampling and analytical works were conducted by Hyder Consulting Limited, the ET.

6.2.2 Types of Equipment Used and Calibration Details

HVS - Model GBM2000H1, manufactured by Anderson Instruments Inc., was used for TSP monitoring. It complies with the USEPA specifications in Appendix B Part 50 - Reference Method for the Determination of Suspended Particulate matter in the Atmosphere (High-Volume Method) of the Code of Federal Regulation dated July 1, 1991. Initial calibration of dust monitoring equipment was conducted upon installation and prior to commissioning. One point flow rate calibration would be carried out every two months. Five-point calibration would be carried out every six months. All the calibration data were converted into standard temperature and pressure condition.

Orific HVS Calibration Kit Serial No: 517N was used for the calibration of HVSs. Calibration of calibration kit would be carried out annually. Appendix 7 presents the monitoring equipment calibration records.

For noise monitoring, Bruel & Kjaer (B&K) Precision Integrating Sound Level Meters of Type 2238 in compliance with the International Electrotechnical Commission Publication 651: 1979 (Type 1) and 804: 1985 (Type 1) Specifications were used.

Prior to and following each noise measurement, the accuracy of the sound level meter was checked using an acoustic calibrator (B&K Type 4230) generating a known sound pressure level at a known frequency. Measurements were considered as valid only if the calibration level from before and after the noise measurement agree to within 1dB. All sound level meters and calibrators would be calibrated annually. Appendix 7 presents the monitoring equipment calibration records.

Table 6-5 summarises the types of monitoring and calibration equipment.

Equipment Type	Manufacturer	Model	Serial Number/I.D.
Sound Level Meter	B&K	Type 2236	1774423
Sound Level Calibrator	B&K	Type 4231	1770806
High Volume Sampler	Anderson	GBM 2000 H1	1097
High Volume Sampler	Anderson	GBM 2000 H1	1062
Orific HVS Calibration Kit	Tisch Environmental	N/A	517N

Table 6-1 Monitoring Equipment

6.3 Parameters Monitored

Parameters monitored are described in Sections 4.1.1 and 4.1.2.

6.4 Monitoring Locations

There are two designated air quality monitoring locations identified in the EM&A Manual. Due to the access constraint, alternative monitoring locations were selected and approved by ER, IEC and EPD prior the commencement of monitoring. These alternative locations for air quality monitoring are summarised in Table 6-6 and shown in Appendix 4.

Monitoring Station ID	Name of Premises	Monitoring Location
CAM1a	San Po Street Pumping Station	Ground floor level
CAM2a	Sheung Shui Heung Floodwater Pumping Station	Ground floor level

Table 6-2 Air Quality Monitoring Locations

There are two designated noise monitoring locations identified in the EM&A Manual and their locations are described below and shown in Appendix 4.

Monitoring Station ID	Name of Premises	Monitoring Location
NM1	Wai Loi Tsuen	1.2m above ground
NM2	Temporary Domestic Structure	1.2m above ground

Table 6-3 Noise Monitoring Locations

6.5 Monitoring Date, Time, Frequency and Duration, Weather Condition and Other Factors

Monitoring frequency for 1-hr TSP and 24-hr TSP is 3 times every 6 days and once every 6 days, respectively. One set of noise measurements will be conducted between 0700 and 1900 on normal weekdays at each monitoring station on a weekly

basis, when noise-generating activities are underway. Monitoring date, time and duration for noise and air quality monitoring and all other factors related to the monitoring result, such as weather condition, are listed in the following tables.

Station	Date	Time	Duration	Weather Condition
1-hr TSP				
CAM1a	3 June 2008	1015-1315	3 X 1 hour	Rainy
	7 June 2008*	-	-	Rainy
	12 June 2008	0915-1215	3 X 1 hour	Cloudy
	13 June 2008	1310-1610	3 X 1 hour	Rainy
	19 June 2008	0900-1200	3 X 1 hour	Fine
	25 June 2008	1415-1715	3 X 1 hour	Rainy
	30 June 2008	1300-1600	3 X 1 hour	Cloudy
CAM2a	3 June 2008	1030-1330	3 X 1 hour	Rainy
	7 June 2008*	-	-	Rainy
	12 June 2008	0930-1230	3 X 1 hour	Cloudy
	13 June 2008	1320-1620	3 X 1 hour	Rainy
	19 June 2008	0907-1207	3 X 1 hour	Fine
	25 June 2008	1408-1708	3 X 1 hour	Rainy
	30 June 2008	1315-1615	3 X 1 hour	Cloudy
24-hr TSP				
CAM1a	3 June 2008	1315-1315	24 hours	Rainy
	7 June 2008*	-	-	Rainy
	*12 June 2008***	-	-	Cloudy
	13 June 2008**	-	-	Rainy
	16 June 2008	1300-1300	24 hours	Sunny
	19 June 2008	1230-1240	24 hours	Fine
	25 June 2008	1730-1730	24 hours	Rainy
	30 June 2008	1600-1600	24 hours	Cloudy
CAM2a	3 June 2008	1330-1330	24 hours	Rainy
	07 June 2008*	-	-	Rainy
	12 June 2008	1230-1230	24 hours	Cloudy
	13 June 2008	1620-1620	24 hours	Rainy
	19 June 2008	1240-1230	24 hours	Fine
	25 June 2008	1715-1715	24 hours	Rainy
	30 June 2008	1615-1615	24 hours	Cloudy

Note: Dates in Italic refer to additional monitoring
*Black Rainstorm Warning Signal
**No Results due to power failure

Table 6-4 Sampling Schedule of Air Quality Monitoring

Station	Date	Time	Duration	Weather Condition
NM1	03 June 2008	1035-1105	30 minutes	Cloudy
	13 June 2008*	-	-	Rainy
	19 June 2008	0915-0945	30 minutes	Fine
	25 June 2008*	-	-	Rainy
	27 June 2008**	1600-1630	30 minutes	Fine
	30 June 2008	1320-1350	30 minutes	Cloudy
NM2	03 June 2008	1145-1215	30 minutes	Cloudy
	13 June 2008*	-	-	Rainy
	19 June 2008	1020-1050	30 minutes	Fine
	25 June 2008*	-	-	Rainy
	27 June 2008**	1645-1715	30 minutes	Fine
	30 June 2008	1425-1455	30 minutes	Cloudy

*Heavy rainfall

**Additional monitoring

Table 6-5 Sampling Schedule of Noise Monitoring

Due to adverse weather conditions and a mechanical failure of the HVAS at monitoring station CAM 1a the monitoring in the month of June 2008 is not completely in line with original schedule. For Noise Monitoring, 24 hr air monitoring and 1 hr air monitoring the frequency of monitoring at the beginning of June is outside that stipulated in the EM&A Manual (Table 2.3 of section 2.6 and section 5.6).

Appendix 12 presents the schedule for each parameter with the changes that occurred together with some comments and also the weather conditions.

6.6 Results and Graphical Plots of Monitoring Parameters

Air quality monitoring results of 1-hour and 24-hour TSP levels are summarised in Table 6-10 and detailed in Appendix 8. Graphical plots of the monitoring results are also provided in Appendix 8.

Station	Date	Measured Level (μg/m³)		Action/Limit Level (μg/m³)	
		1-hr TSP	24-hr TSP	1-hr TSP	24-hr TSP
CAM1a	3 June 2008	160.2	49.8	342.7/500	203.3/260
		136.1			
		92.6			
	7 June 2008*	-	-		
		-			
		-			
	12 June 2008	128.8	-**		

Station	Date	Measured Level (µg/m³)		Action/Limit Level (µg/m³)	
		1-hr TSP	24-hr TSP	1-hr TSP	24-hr TSP
		123.8			
		140.0.			
	13 June 2008	158.5	- **		
		134.0			
		87.7			
	16 June 2008	-	43.6		
		-			
		-			
	19 June 2008	152.7	57.4		
		141.6			
		119.8			
	25 June 2008	141.5	25.7		
		78.9			
		107.2			
	30 June 2008	132.9	56.3		
		131.3			
		97.9			
CAM2a	3 June 2008	121.5	30.1	340/500	201.6/260
		85.7			
		60.1			
	7 June 2008*	-	-		
		-			
		-			
	12 June 2008	69.8	33.4		
		102.7			
		115.4			
	13 June 2008	391.8	19.7		
		140.3			
		165.0			
	19 June 2008	294.4	34.6		
		160.4			
		321.7			
	25 June 2008	139.2	36.6		
		95.9			
		110.6			
	30 June 2008	85.8	29.6		
		54.3			
		53.2			

Note:

(1) "Shading" indicates an exceedance of Action Level. "Bold and shading" indicates an exceedance of Limit Level.

Dates in Italic refer to additional monitoring
*Black Rainstorm Warning Signal
**No Results due to power failure

Table 6-6 Air Quality Monitoring Results

Noise monitoring results are summarised in Table 6-11 and detailed in Appendix 8. Graphical plots of the monitoring results are also provided in Appendix 8. As all monitoring was conducted at free field condition, a facade correction of 3dB(A) was applied to each of the noise measurements.

Station	Date	Measured Noise Level, dB(A)			Limit Level for $L_{eq(30\ min)}$, dB(A)
		$L_{eq\ (30min)}$	$L_{10(30min)}$	$L_{90(30min)}$	
NM1	3 June 2008	61.7	63.6	58.4	75
	13 June 2008*	-	-	-	
	19 June 2008	66.8	69.8	62.4	
	25 June 2008*	-	-	-	
	27 June 2008**	61.6	65.2	58.2	
	30 June 2008	66.5	69.1	63.0	
NM2	3 June 2008	58.2	60.8	55.6	
	13 June 2008*	-	-	-	
	19 June 2008	56.5	60.6	52.3	
	25 June 2008*	-	-	-	
	27 June 2008**	61.7	64.8	58.3	
	30 June 2008	64.0	63.7	57.9	

Note : (1) Shaded area indicates an exceedance of Limit Level.
(2) A facade correction of 3dB(A) was applied to each of noise measurements.
*No results due to heavy rainfalls.
** Additional Monitoring

Table 6-7 Noise Monitoring Results

6.7 Factors Which Might Affect the Monitoring Results

Dust from other sources such as roads with the movement of heavy vehicles in the vicinity of the monitoring stations would affect the air quality monitoring results.

6.8 QA/QC Results and Detection Limit

The quality assurance (QA) / quality control (QC) results and detection limit are shown in Appendix 9.

7 Non-compliance, Complaints, Notifications of Summons and Successful Prosecutions

7.1 Non-compliance of Action and Limit Levels

No non-compliance of Action or Limit Level was recorded for noise monitoring.

An action-level exceedance has been measured from the first of the three 1-hr TSP measurements on 13 June 2008. The scheduled consecutive monitoring from14.20-15.20 & 15.20-16.20 have no action level exceedance.
The repeat measurements stated in the EM&A Event/Action Plan were not applicable, as consecutive monitoring had already been carried out under the scheduled program. In addition the scheduled Air Quality monitoring from 19 June is also below the action level.
It is not considered that the action-level exceedance is project related for the following reasons:

- close to the monitoring station (within 6 to 8m distance), it was observed that construction activities by China Light Power (CLP) were ongoing at the same time as the exceedance was recorded. These works included cable laying with sporadic opening of a trench, which is a potential dust generating operation.

It is considered that the exceedance was caused by nearby offsite (non-project) construction activities and not by activities carried out under this contract.

The Contactor, the IEC and the ER have been duly notified of the exceedance according to Table 4-1 Event/ Action Plan for Air Quality Monitoring.

7.2 Complaints Received

In case of an environmental complaint received, all related parties should follow the complaints response procedures specified in the EM&A Manual.

During this reporting month, no environmental complaint was received. Cumulative number of environmental complaint is shown in Appendix 10.

7.3 Notifications of Summons and Successful Prosecutions

No notification of summons or successful prosecution was recorded during the reporting month. The cumulative number of notifications of summons and successful prosecutions are shown in Appendix 10.

7.4 Review of the Reasons and Implications of Non-compliance, Complaints, Summons and Prosecutions

7.4.1 Non-compliance of Acton/Limit Level

No non-compliance was recorded during the reporting period.

7.4.2 Complaints, Summons and Prosecutions

No complaint, summons and prosecution was recorded during the reporting period.

7.5 Site Inspection

Weekly site inspections were carried out on 4, 11, 18 and 25 June 2008. The findings of the site inspections and appropriate mitigation measures were recorded in the site inspection checklists.

The observations risen during the site inspections, corresponding recommendations and rectification status are summarised in Table 7-12.

Inspection Date	Deficiencies	Recommendation	Status	Note / Reminder
Follow-up issues	1. Stagnant water was observed adjacent to primary sedimentation tank and excavation trench. 2. Stockpile of soil was observed at chemical waste storage house.	1. The Contractor was requested to clear up immediately. 2. The Contractor was requested to clear up and provide wetsep to prevent stagnant water flow.	1. During site inspection on 4 June 2008, Stagnant water had been cleared up. (Closed) 2. During site inspection on 4 June 2008, stockpiles had been removed. (Closed)	N/A
4 June 2008	1. No measures were implemented to prevent muddy water entering public drains.	1. The Contractor was reminded to seal the gullies to avoid such condition.	1. During site inspection on 11 June 2008, the gullies had been covered to prevent silty runoff / muddy water entering public drains. (Closed)	N/A
11 June 2008	1. Stagnant water was observed in a container near the site office. 2. Sand and silt deposit was found into drainage adjacent to Air	1. The Contractor was reminded to remove it to prevent mosquitoes breeding. 2. The Contractor was reminded to remove it as soon as possible.	1. During site inspection on 18 June 2008, stagnant water has been removed. (Closed) 2. During site inspection on 18 June 2008, drainage near Air	N/A

Inspection Date	Deficiencies	Recommendation	Status	Note / Reminder
	Blower House.		Blower House has been cleared. (Closed)	
18 June2008	No additional deficiencies.	No recommendations.	N/A	N/A
25 June 2008	1. Stockpiles of soil were observed near site exit. 2. Stagnant water was observed adjacent to air blower house.	1. The Contractor was reminded to cover the stockpile with tarpaulin sheet to prevent wash away of soil to enter public road or public drainage. 2. The Contractor was reminded to remove it after rainstorm.	1. The outstanding observation will be followed up in next month inspection. 2. The outstanding observation will be followed up in next month inspection.	N/A

Table 7-1 Summaries of Site Inspections and Recommendations

The site audit conducted by IEC was carried out on 24 June 2008 and the Contractor has undertaken appropriate actions in response to the IEC's findings. There was no outstanding issue or deficiency for the observations arising during the weekly site inspections. There was no EPD inspection carried out in June 2008.

8 Waste Management Status

According to the information provided by the Contractor, the following waste materials were generated during the reporting month:

- Inert C&D materials – 280.21 m^3, and
- General Refuse – 52 m^3.

C&D materials were disposed of at Tuen Mun Area 38 Public Fill. General refuse was collected and disposed of at NENT Landfill properly. No chemical waste was produced during the reporting month. Trip ticket system was implemented and disposal records were in order on site. The Waste Management Plan was followed.

9 Future Key Issues

The construction activities for the coming three months are summarized below:

- Excavation and backfilling
- Temporary work including installation of waling and struts
- Pipe Works
- Installation of Cat Ladders
- Roofing and Finishing works

- Structural Steelwork with FRP covers
- Roadwork
- Cable Ducts and Cable Drawpits; and
- Landscaping Works.

The upcoming EM&A schedule for the future three months is shown in Appendix 11.

10 Comments, Recommendations and Conclusions

EM&A works have been undertaken during June 2008 for the Project based on the requirements set in the EM&A Manual.

All monitoring equipments have been calibrated and all monitoring protocols have been carried out properly according to the EM&A Manual.

An action-level exceedance has been measured from the first of the three 1-hr TSP measurements on 13 June 2008.It is considered that the exceedance was caused by nearby offsite (non-project) construction activities and not by activities carried out under this contract.

No compliant, notification of summons or successful prosecution was recorded during the reporting month.

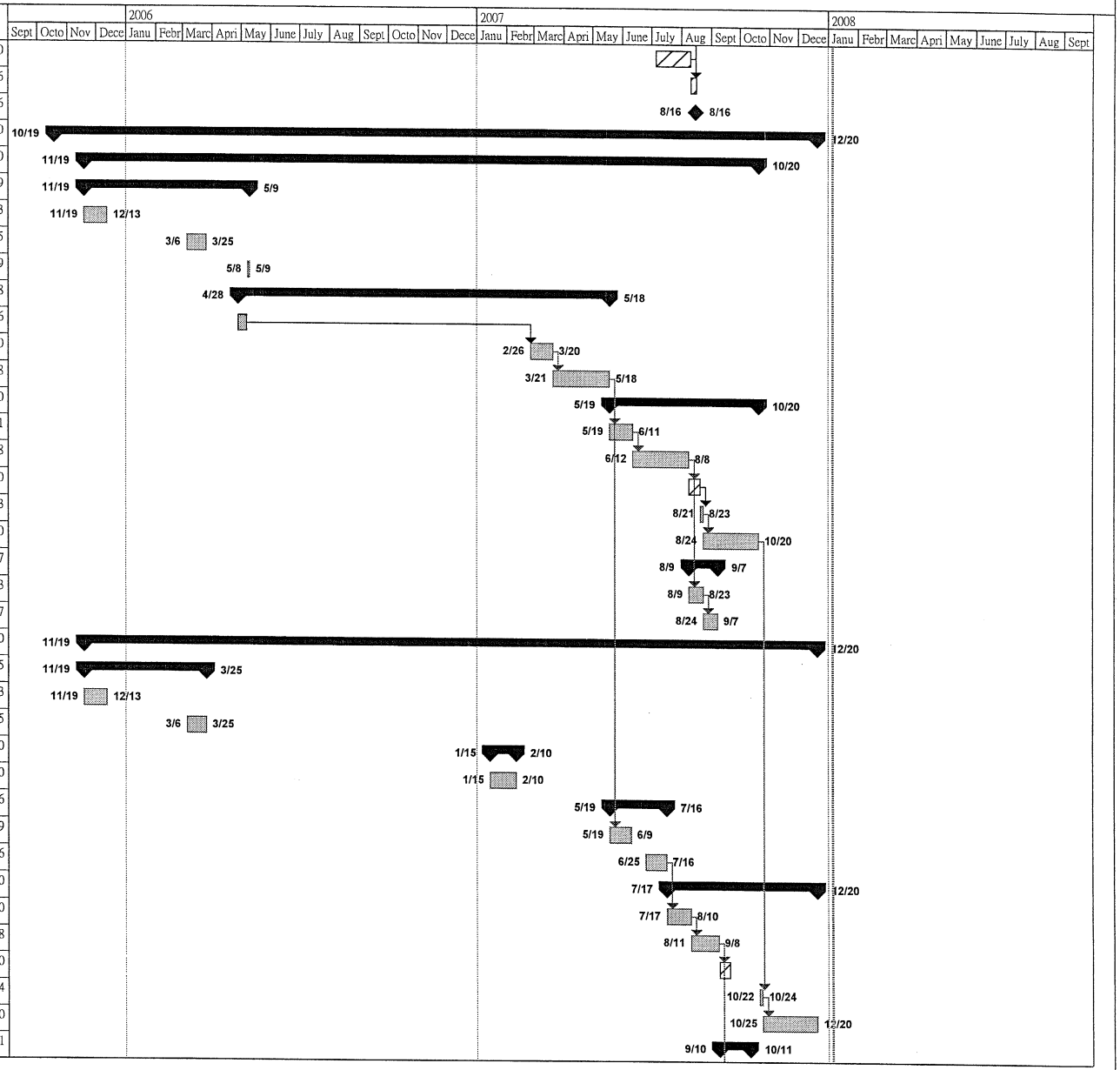
Four weekly site inspections were carried out during the reporting month. In response to the observations raised by ET, the Contractor has undertaken follow-up actions to rectify the condition.

Appendix 1

Project Organization

Maeda Corporation
Contract No. DC/2005/01
Expansion of Shek Wu Hui Sewage Treatment Works and
Upgrading of Ting Kok Road Pumping Station No.5
Master Programme (Rev. 6A)

ID	Task Name	Duration	Start	Finish
39	Pipeline 10	31 days	Fri 07/7/6	Fri 07/8/10
40	Pressure Test and CCTV	5 days	Sat 07/8/11	Thu 07/8/16
41	Key Date of the Section 1 Works	1 day	Thu 07/8/16	Thu 07/8/16
42	Section 2 of works	682 days	Wed 05/10/19	Thu 07/12/20
43	Flow Division Pump Pits No.1	602 days	Sat 05/11/19	Sat 07/10/20
44	Foundation	147 days	Sat 05/11/19	Tue 06/5/9
45	GI works (pre-drilling & reporting)	20 days	Sat 05/11/19	Tue 05/12/13
46	Permanent Mini-pile (4nos.)	18 days	Mon 06/3/6	Sat 06/3/25
47	Proof Drilling	2 days	Mon 06/5/8	Tue 06/5/9
48	Earthworks	332 days	Fri 06/4/28	Fri 07/5/18
49	Approval of Temporary Works	8 days	Fri 06/4/28	Sat 06/5/6
50	Install temporary retaining wall (steet pile)	20 days	Mon 07/2/26	Tue 07/3/20
51	Excavation & temp.supporting	51 days	Wed 07/3/21	Fri 07/5/18
52	Structure	133 days	Sat 07/5/19	Sat 07/10/20
53	Pilecaps	20 days	Sat 07/5/19	Mon 07/6/11
54	Concrete work	50 days	Tue 07/6/12	Wed 07/8/8
55	Water Tightness Test	10 days	Thu 07/8/9	Mon 07/8/20
56	Temporary Suspension and Demolition of Existing Pipe	3 days	Tue 07/8/21	Thu 07/8/23
57	Pumps & Pipe installation (by others)	50 days	Fri 07/8/24	Sat 07/10/20
58	External Works	26 days	Thu 07/8/9	Fri 07/9/7
59	Backfilling, remove temp. retaining wall	13 days	Thu 07/8/9	Thu 07/8/23
60	Installation, handrail/plate/ladder	13 days	Fri 07/8/24	Fri 07/9/7
61	Flow Division Pump Pits No.2	655 days	Sat 05/11/19	Thu 07/12/20
62	Foundation	109 days	Sat 05/11/19	Sat 06/3/25
63	GI works (pre-drilling & reporting)	20 days	Sat 05/11/19	Tue 05/12/13
64	Permanent Mini-pile (4nos.)	18 days	Mon 06/3/6	Sat 06/3/25
65	Air Main Diversion	24 days	Mon 07/1/15	Sat 07/2/10
66	Compressed Air pipe (by MAEDA)	24 days	Mon 07/1/15	Sat 07/2/10
67	Earthworks	50 days	Sat 07/5/19	Mon 07/7/16
68	Install temporary retaining wall (sheetpile)	19 days	Sat 07/5/19	Sat 07/6/9
69	Excavation & temp.supporting	19 days	Mon 07/6/25	Mon 07/7/16
70	Structure	136 days	Tue 07/7/17	Thu 07/12/20
71	Pilecaps	22 days	Tue 07/7/17	Fri 07/8/10
72	Concrete work	25 days	Sat 07/8/11	Sat 07/9/8
73	Water Tightness Test	10 days	Mon 07/9/10	Thu 07/9/20
74	Temporary Suspension and Demolition of Existing Pipe	3 days	Mon 07/10/22	Wed 07/10/24
75	Pumps & Pipe installation (by others)	50 days	Thu 07/10/25	Thu 07/12/20
76	External Works	28 days	Mon 07/9/10	Thu 07/10/11

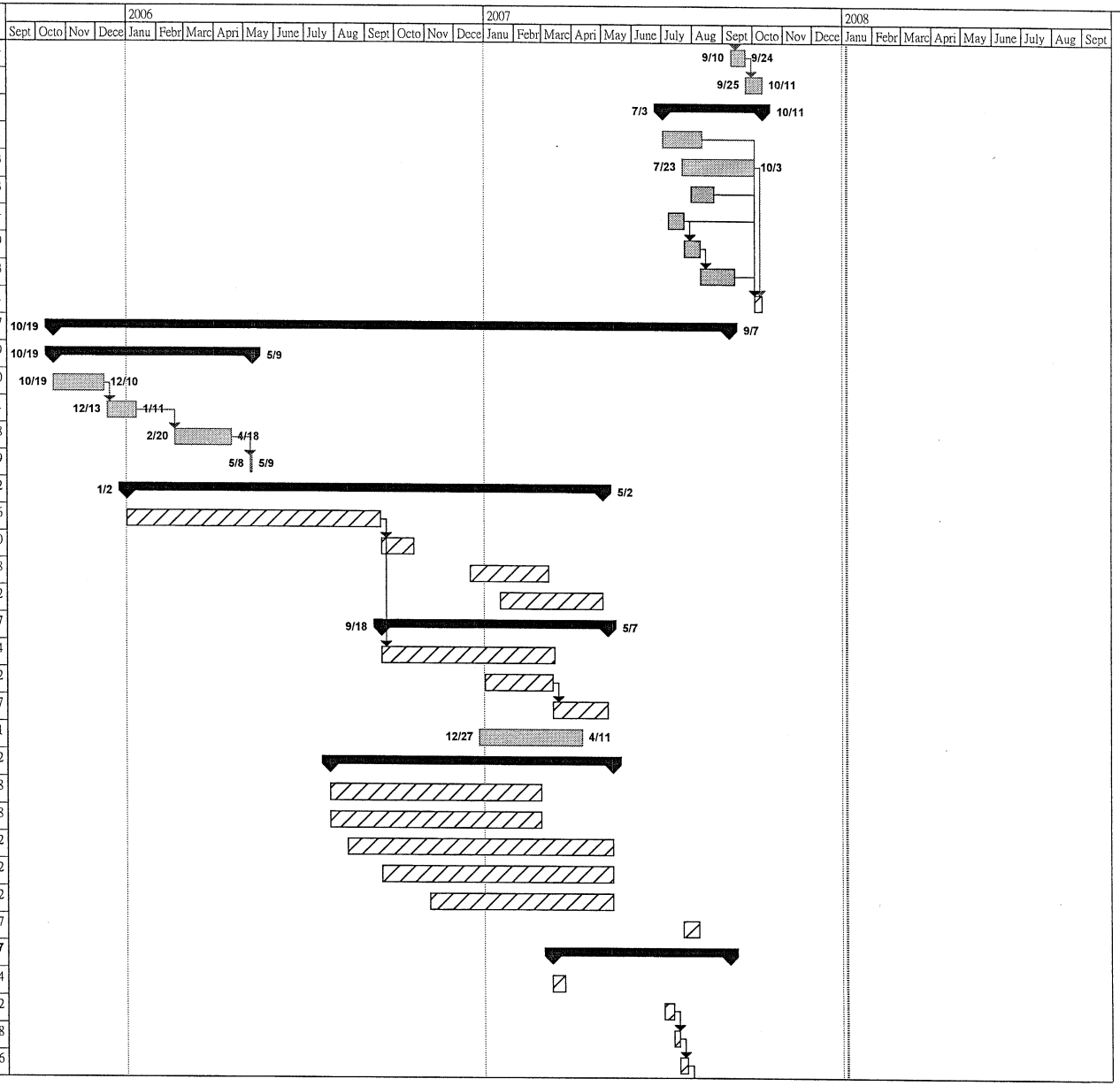


Date: Sat 08/1/5

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary

Macda Corporation
Contract No. DC/2005/01
Expansion of Shek Wu Hui Sewage Treatment Works and
Upgrading of Ting Kok Road Pumping Station No.5
Master Programme (Rev. 6A)

ID	Task Name	Duration	Start	Finish
77	Backfilling, remove temp. retaining wall	13 days	Mon 07/9/10	Mon 07/9/24
78	Installation, handrail/plate/ladder	15 days	Tue 07/9/25	Thu 07/10/11
79	Pipeworks	87 days	Tue 07/7/3	Thu 07/10/11
80	Pipeline No. 1	35 days	Tue 07/7/3	Sat 07/8/11
81	Pipeline No. 2	63 days	Mon 07/7/23	Wed 07/10/3
82	Pipeline No. 3	20 days	Wed 07/8/1	Thu 07/8/23
83	Pipeline No. 4	14 days	Mon 07/7/9	Tue 07/7/24
84	Pipeline No. 5	14 days	Wed 07/7/25	Thu 07/8/9
85	Pipeline 14, 15 & 16	30 days	Fri 07/8/10	Thu 07/9/13
86	Pressure Test & CCTV	7 days	Thu 07/10/4	Thu 07/10/11
87	Bioreactor No.5	592 days	Wed 05/10/19	Fri 07/9/7
88	Foundation	174 days	Wed 05/10/19	Tue 06/5/9
89	GI works (pre-drilling & reporting)	45 days	Wed 05/10/19	Sat 05/12/10
90	Preliminary H-pile (1nos.)	26 days	Tue 05/12/13	Wed 06/1/11
91	Permanent H-pile (55nos.)	50 days	Mon 06/2/20	Tue 06/4/18
92	Proof Load Test (1nos.)	2 days	Mon 06/5/8	Tue 06/5/9
93	Temporary Works	418 days	Mon 06/1/2	Wed 07/5/2
94	Erection - Phase 1 (Portion A - C)	222 days	Mon 06/1/2	Sat 06/9/16
95	Erection - Phase 2 (Portion D - E)	29 days	Mon 06/9/18	Fri 06/10/20
96	Removal - waling and strut	70 days	Mon 06/12/18	Thu 07/3/8
97	Removal - sheet pile	90 days	Thu 07/1/18	Wed 07/5/2
98	Earthworks	200 days	Mon 06/9/18	Mon 07/5/7
99	Excavation to formation	154 days	Mon 06/9/18	Wed 07/3/14
100	Backfilling to +2.92mPD	60 days	Tue 07/1/2	Mon 07/3/12
101	Backfilling to +5.30mPD	48 days	Tue 07/3/13	Mon 07/5/7
102	Backfilling to FGL	91 days	Wed 06/12/27	Wed 07/4/11
103	Structures	250 days	Thu 06/7/27	Sat 07/5/12
104	Portion A	187 days	Thu 06/7/27	Wed 07/2/28
105	Portion B	187 days	Thu 06/7/27	Wed 07/2/28
106	Portion C	235 days	Mon 06/8/14	Sat 07/5/12
107	Portion D	205 days	Mon 06/9/18	Sat 07/5/12
108	Portion E	163 days	Mon 06/11/6	Sat 07/5/12
109	Water Tightness Test (Portions A - E)	14 days	Mon 07/7/23	Tue 07/8/7
110	**Portion F (Final Sed Tank Dist Chamber)**	**155 days**	**Mon 07/3/12**	**Fri 07/9/7**
111	Sheet Pile Installation	12 days	Mon 07/3/12	Sat 07/3/24
112	Excavation + Temp Works	9 days	Tue 07/7/3	Thu 07/7/12
113	Pile Head	5 days	Fri 07/7/13	Wed 07/7/18
114	Base Slab	7 days	Thu 07/7/19	Thu 07/7/26

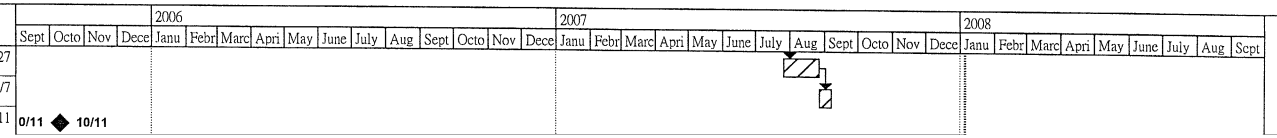


Date: Sat 08/1/5

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary

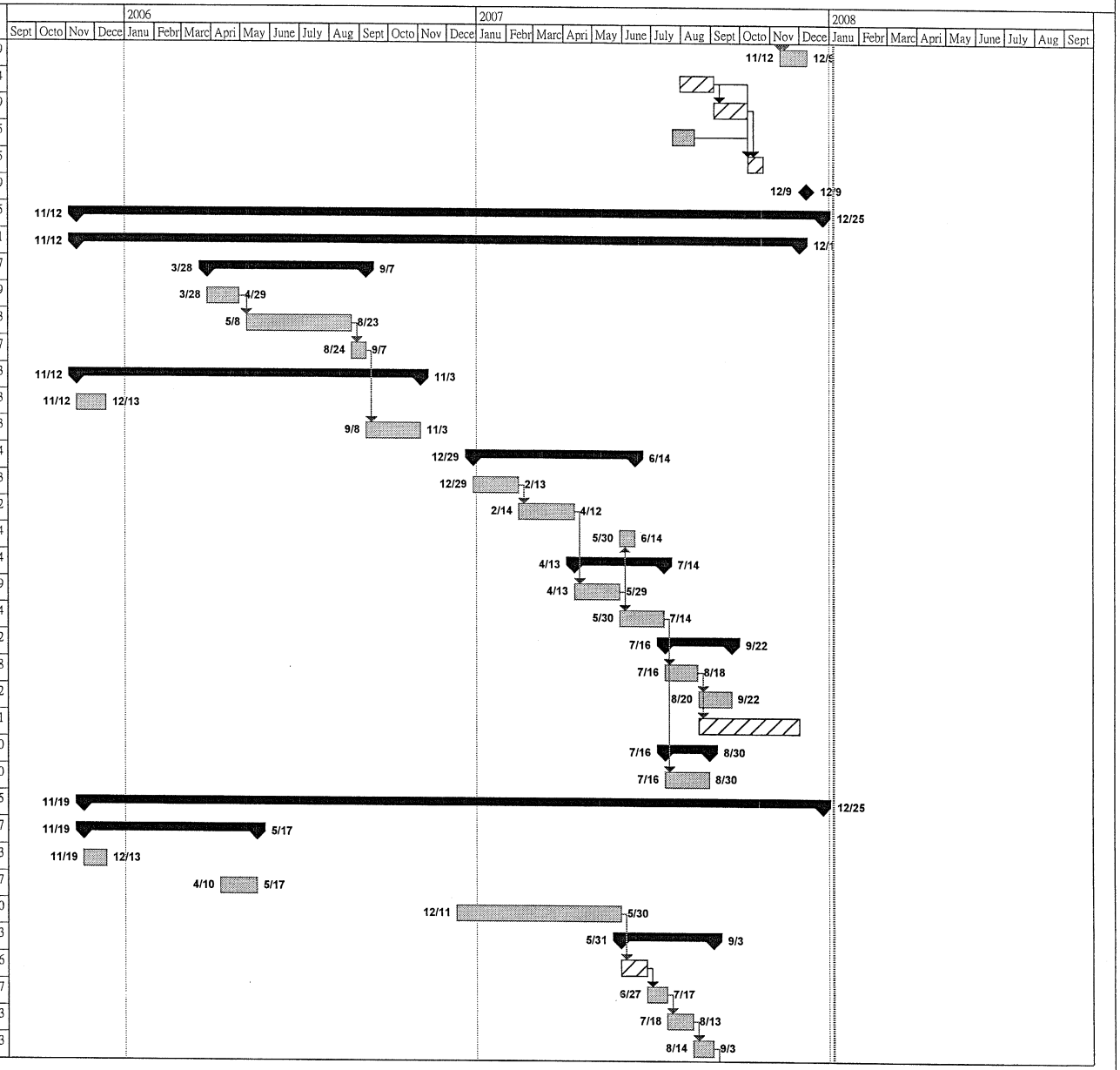
Maeda Corporation
Contract No. DC/2005/01
Expansion of Shek Wu Hui Sewage Treatment Works and
Upgrading of Ting Kok Road Pumping Station No.5
Master Programme (Rev. 6A)

ID		Task Name	Duration	Start	Finish
115		Wall	27 days	Fri 07/7/27	Mon 07/8/27
116		Water Tightness Test	10 days	Tue 07/8/28	Fri 07/9/7
117		Key Date of the Section 2 of the Works	1 day	Tue 05/10/11	Tue 05/10/11



Maeda Corporation
Contract No. DC/2005/01
Expansion of Shek Wu Hui Sewage Treatment Works and
Upgrading of Ting Kok Road Pumping Station No.5
Master Programme (Rev. 6A)

ID	Task Name	Duration	Start	Finish
191	E10-E12	25 days	Mon 07/11/12	Sun 07/12/9
192	Pipeline 6	30 days	Wed 07/8/1	Tue 07/9/4
193	Pipeline 7	30 days	Wed 07/9/5	Tue 07/10/9
194	Pipeline 9	20 days	Tue 07/7/24	Wed 07/8/15
195	Pressure Test and CCTV Inspection	14 days	Wed 07/10/10	Thu 07/10/25
196	Key Date of the Section 3 of the Works	1 day	Sun 07/12/9	Sun 07/12/9
197	Section 4 of works	665 days	Sat 05/11/12	Tue 07/12/25
198	Sludge Press House Extension	644 days	Sat 05/11/12	Sat 07/12/1
199	Relocation of FeCl3 Tank	141 days	Tue 06/3/28	Thu 06/9/7
200	Construction of Bund Wall	29 days	Tue 06/3/28	Sat 06/4/29
201	Relocation of Tank	93 days	Mon 06/5/8	Wed 06/8/23
202	Demolish the Existing Wall	13 days	Thu 06/8/24	Thu 06/9/7
203	Foundation	306 days	Sat 05/11/12	Fri 06/11/3
204	GI works (pre-drilling & reporting)	26 days	Sat 05/11/12	Tue 05/12/13
205	Permanent Mini-pile (18 nos.)	49 days	Fri 06/9/8	Fri 06/11/3
206	Earthworks	144 days	Fri 06/12/29	Thu 07/6/14
207	Excavation	40 days	Fri 06/12/29	Tue 07/2/13
208	Pilecaps, 10nos.	50 days	Wed 07/2/14	Thu 07/4/12
209	Backfill & compaction	14 days	Wed 07/5/30	Thu 07/6/14
210	Superstructure	80 days	Fri 07/4/13	Sat 07/7/14
211	Structure up to 1st floor	40 days	Fri 07/4/13	Tue 07/5/29
212	Structure up to roof	40 days	Wed 07/5/30	Sat 07/7/14
213	Internal Finishes	60 days	Mon 07/7/16	Sat 07/9/22
214	Internal finishes works & opening	30 days	Mon 07/7/16	Sat 07/8/18
215	ABWF Works	30 days	Mon 07/8/20	Sat 07/9/22
216	pipeworks & ducting	90 days	Mon 07/8/20	Sat 07/12/1
217	External Finishes	40 days	Mon 07/7/16	Thu 07/8/30
218	External finishes works	40 days	Mon 07/7/16	Thu 07/8/30
219	Sludge Conditioning Tanks No.3 & No.4	659 days	Sat 05/11/19	Tue 07/12/25
220	Foundation	154 days	Sat 05/11/19	Wed 06/5/17
221	GI works (pre-drilling & reporting)	20 days	Sat 05/11/19	Tue 05/12/13
222	Permanent Mini-pile	33 days	Mon 06/4/10	Wed 06/5/17
223	Sewage Diversion Stage I of II	147 days	Mon 06/12/11	Wed 07/5/30
224	Earthworks	82 days	Thu 07/5/31	Mon 07/9/3
225	Trial Trench	23 days	Thu 07/5/31	Tue 07/6/26
226	Temporary Works (sheetpile for SCT3 & SCT4)	18 days	Wed 07/6/27	Tue 07/7/17
227	Excavation	23 days	Wed 07/7/18	Mon 07/8/13
228	Backfill & rockfill underneath pit	18 days	Tue 07/8/14	Mon 07/9/3

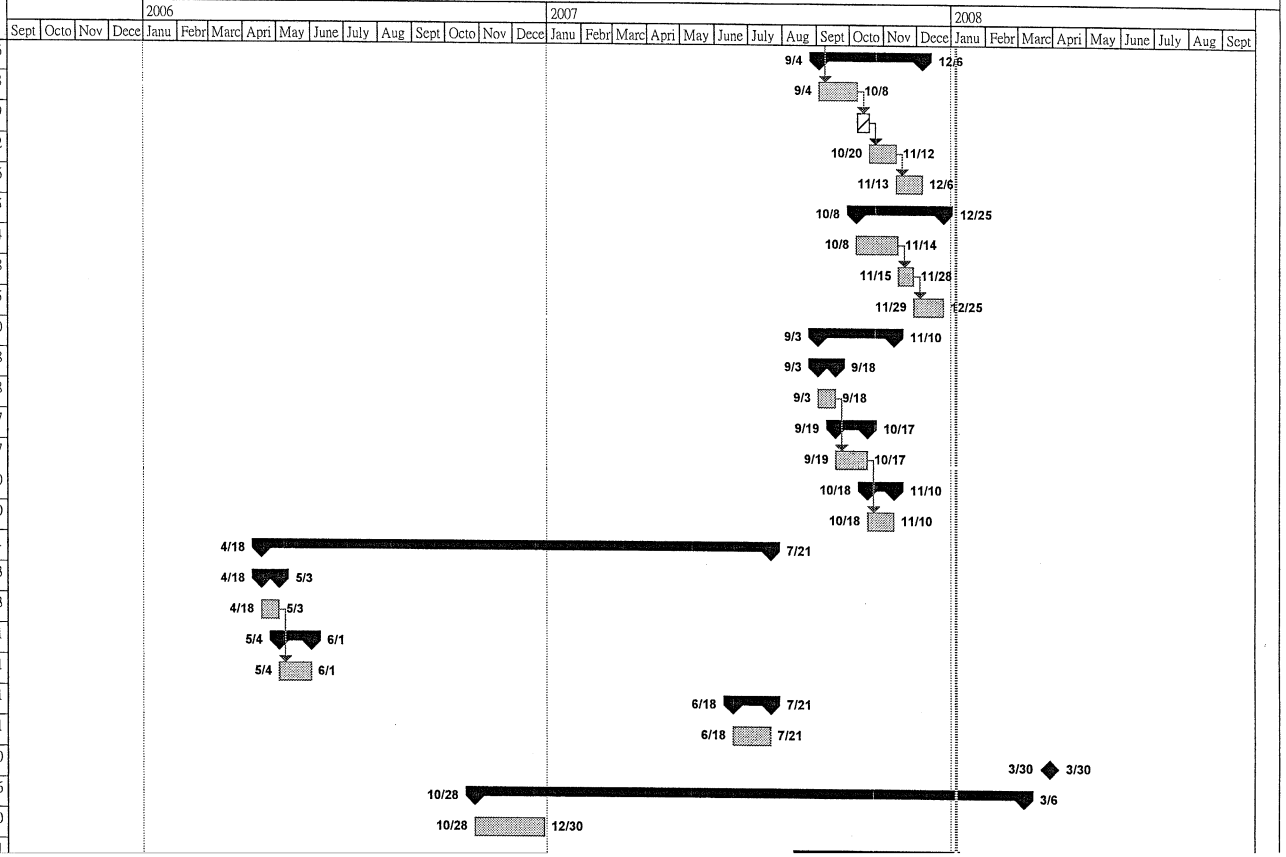


Date: Sat 08/1/5

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary

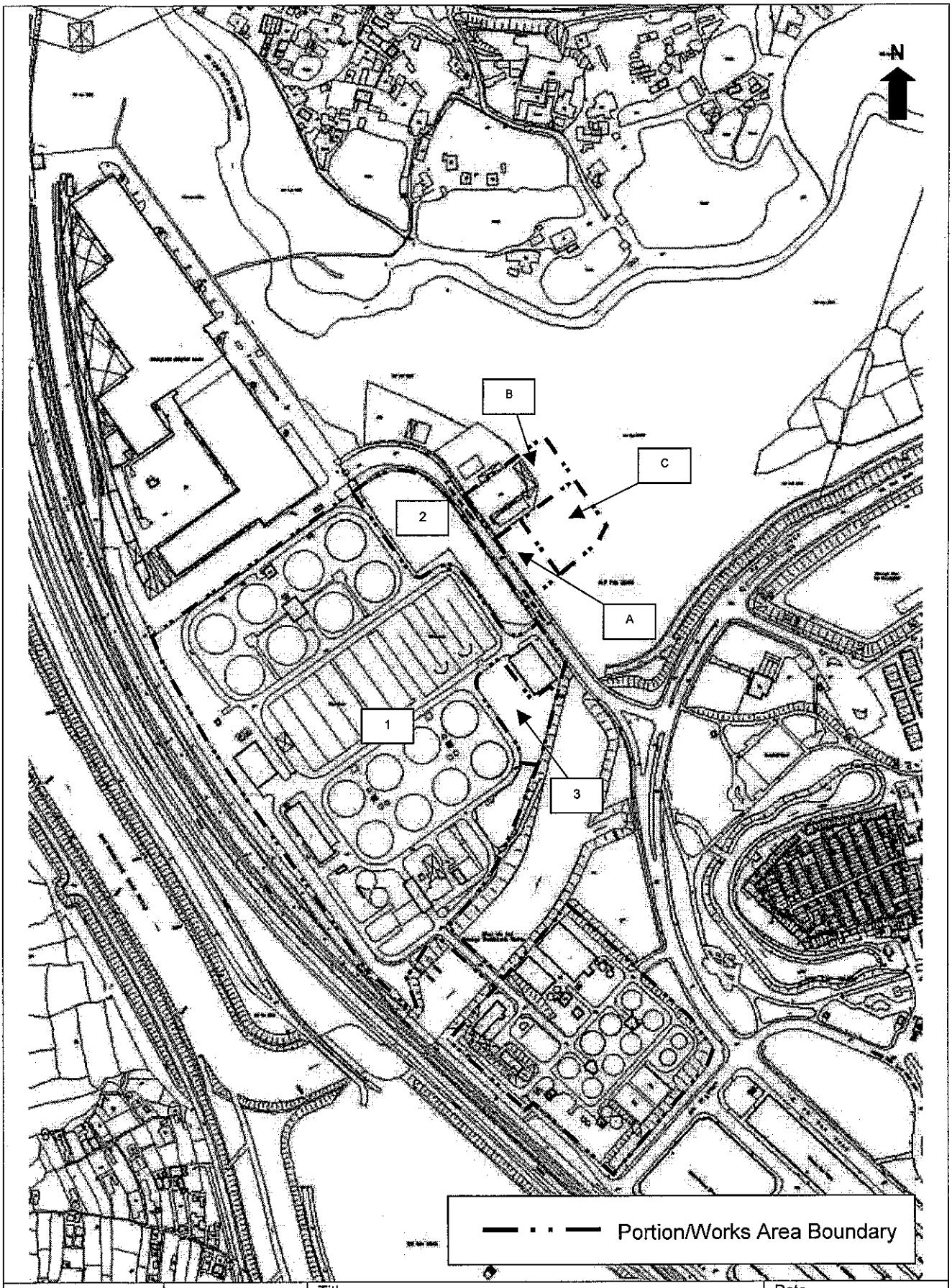
Maeda Corporation
Contract No. DC/2005/01
Expansion of Shek Wu Hui Sewage Treatment Works and
Upgrading of Ting Kok Road Pumping Station No.5
Master Programme (Rev. 6A)

ID	Task Name	Duration	Start	Finish
229	Structure	81 days	Tue 07/9/4	Thu 07/12/6
230	Concrete works	30 days	Tue 07/9/4	Mon 07/10/8
231	Water Tightness Test	10 days	Tue 07/10/9	Fri 07/10/19
232	Backfilling	20 days	Sat 07/10/20	Mon 07/11/12
233	Install handrailing/ladders/mesh etc.	21 days	Tue 07/11/13	Thu 07/12/6
234	External Works	69 days	Mon 07/10/8	Tue 07/12/25
235	Pipelaying of pipeline No.11, 12 & 13	33 days	Mon 07/10/8	Wed 07/11/14
236	Connection to existing system	12 days	Thu 07/11/15	Wed 07/11/28
237	Sump pit construction	24 days	Thu 07/11/29	Tue 07/12/25
238	Dangerous Goods (cat.5) Storeroom	60 days	Mon 07/9/3	Sat 07/11/10
239	Earthworks	14 days	Mon 07/9/3	Tue 07/9/18
240	Excavation, rockfill & Blinding	14 days	Mon 07/9/3	Tue 07/9/18
241	Superstructure	25 days	Wed 07/9/19	Wed 07/10/17
242	Structure	25 days	Wed 07/9/19	Wed 07/10/17
243	Finishing	21 days	Thu 07/10/18	Sat 07/11/10
244	Internal & external finishing	21 days	Thu 07/10/18	Sat 07/11/10
245	Chemical Waste storeroom No.1 & 2	396 days	Tue 06/4/18	Sat 07/7/21
246	Earthworks	14 days	Tue 06/4/18	Wed 06/5/3
247	Excavation, rockfill & Blinding	14 days	Tue 06/4/18	Wed 06/5/3
248	Superstructure	25 days	Thu 06/5/4	Thu 06/6/1
249	Structure	25 days	Thu 06/5/4	Thu 06/6/1
250	Finishing	30 days	Mon 07/6/18	Sat 07/7/21
251	Internal & external finishing	30 days	Mon 07/6/18	Sat 07/7/21
252	Key Date of the Section 4 of the Works	1 day	Sun 08/3/30	Sun 08/3/30
253	Section 5 of works	427 days	Sat 06/10/28	Thu 08/3/6
254	Covered Walkway of Air Blower House No.2	55 days	Sat 06/10/28	Sat 06/12/30
255	Cover & Shelter to Existing Structure	116 days	Mon 07/8/20	Mon 07/12/31



Appendix 3

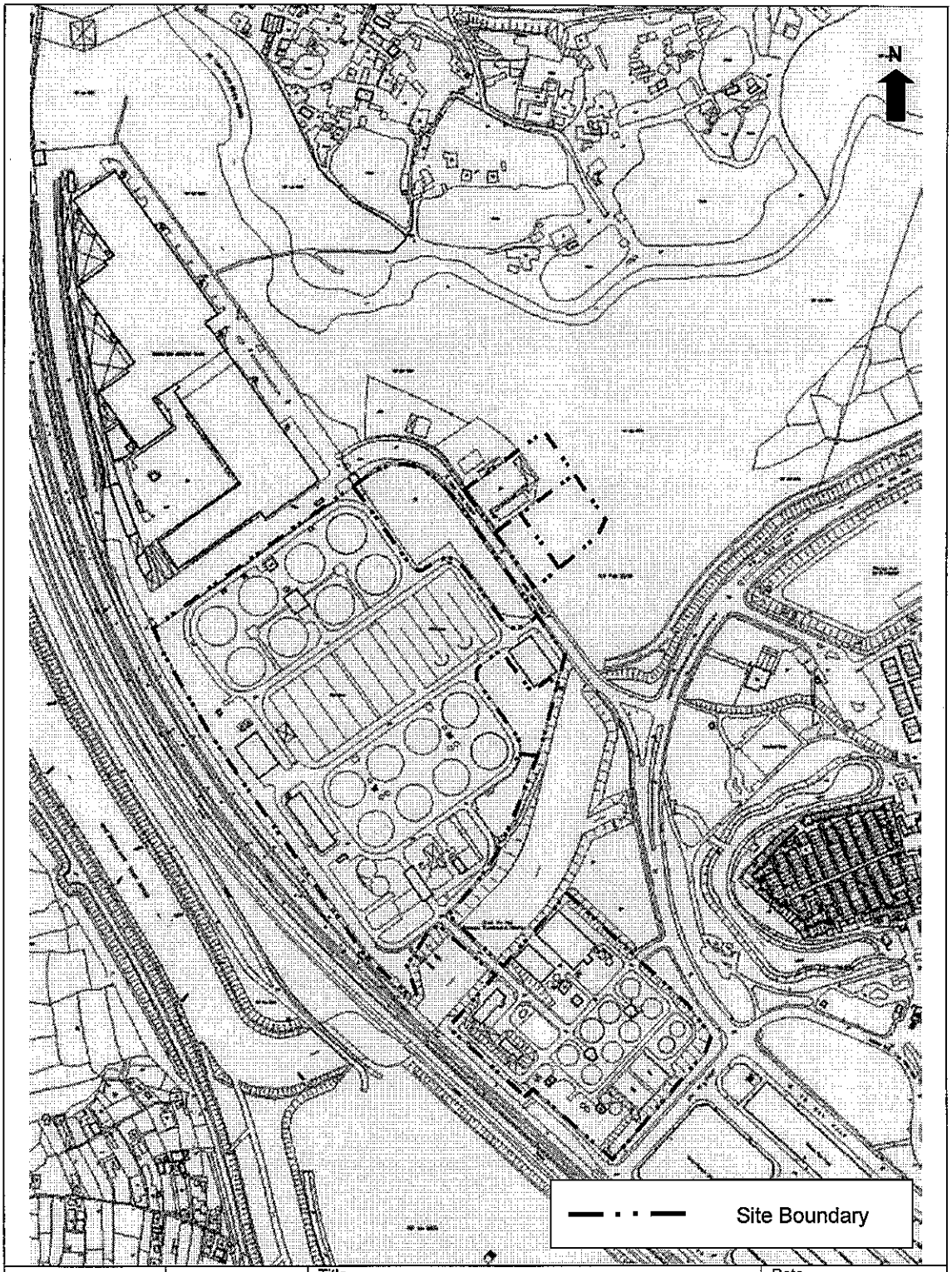
Location of Works



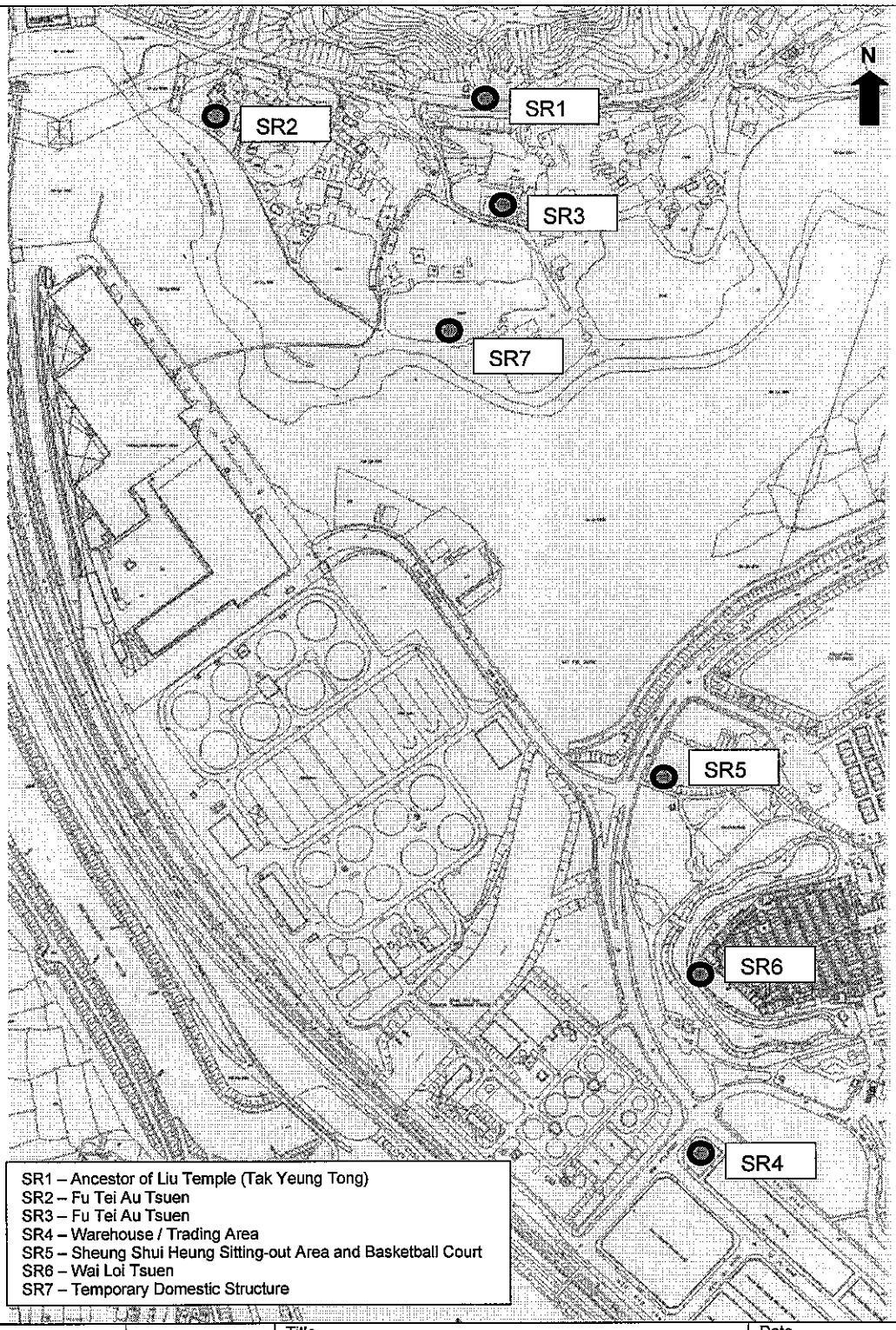
Hyder Consulting	MAEDA	Title: Expansion of Shek Wu Hui Sewage Treatment Works – Location of Portion/Works Area	Date: Dec 2005 Figure: N.A. Scale: NTS

Appendix 4

Project Area, Environmental Sensitive Receiver and Monitoring Location



Hyder Consulting	MAEDA	Title: Expansion of Shek Wu Hui Sewage Treatment Works – Project Area	Date: Dec 2005 Figure: N.A. Scale: NTS



Hyder Consulting

MAEDA

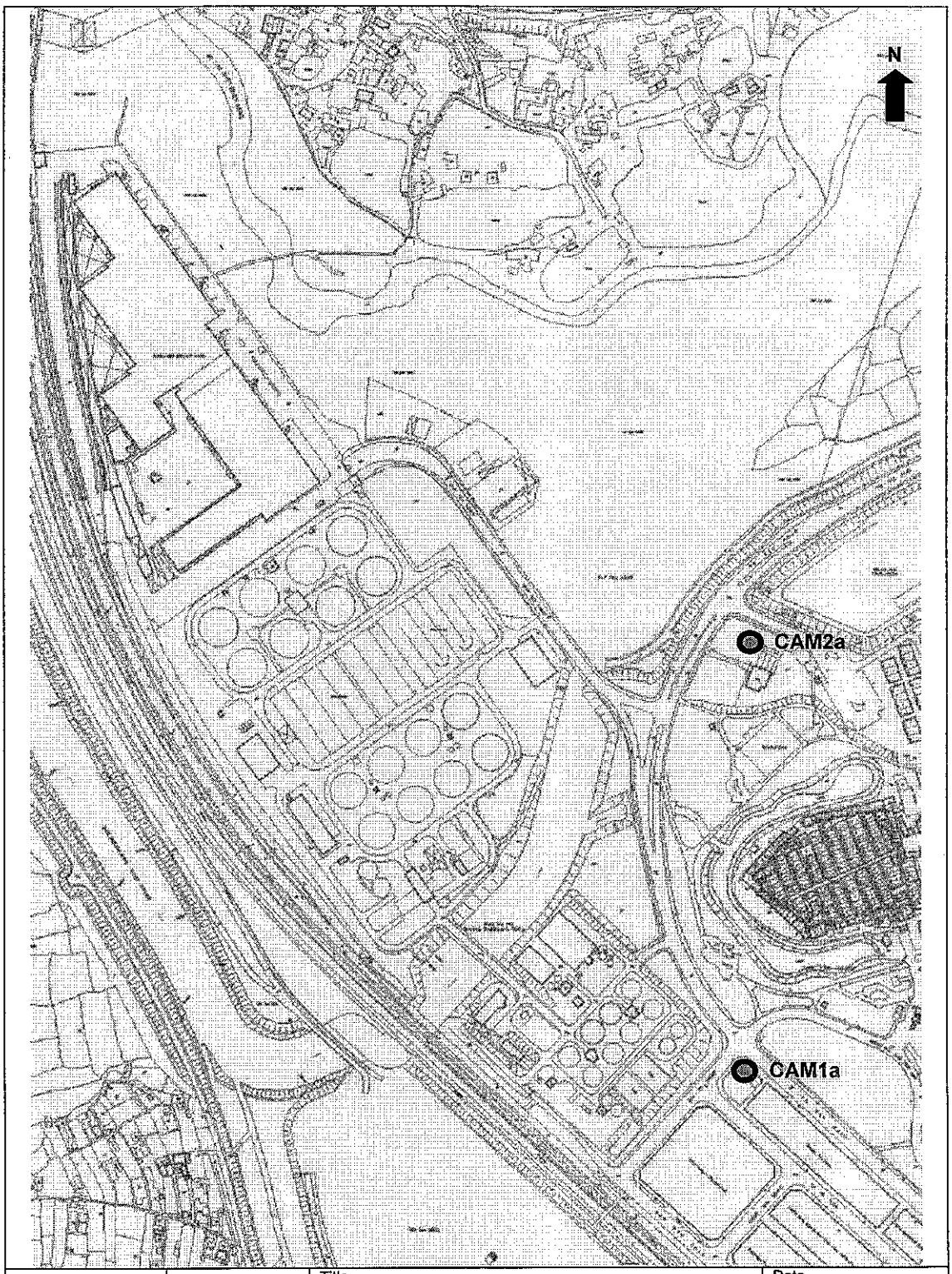
Title

Expansion of Shek Wu Hui Sewage Treatment Works – Environmental Sensitive Receiver

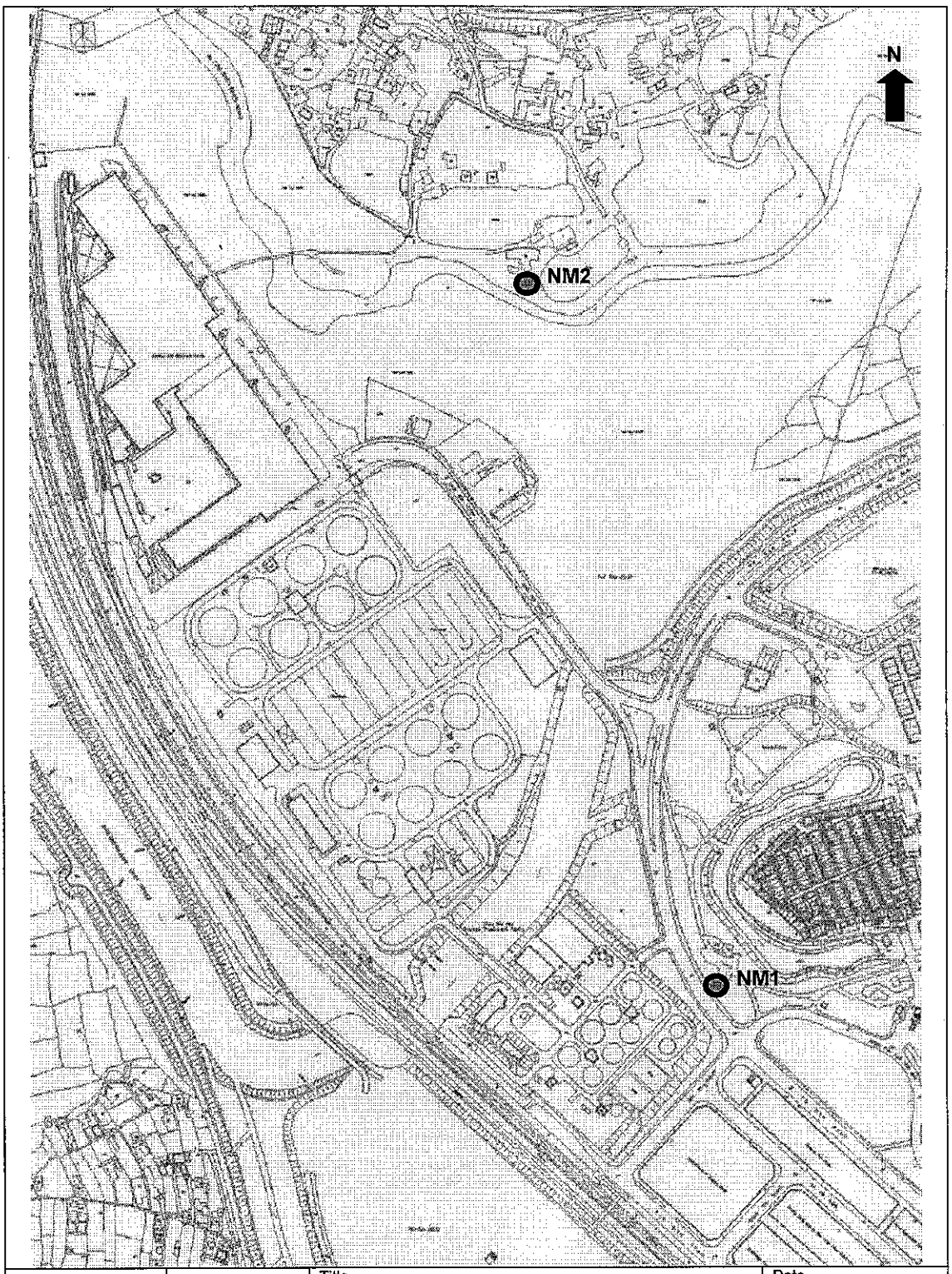
Date: Dec 2005

Figure: N.A.

Scale: NTS



Hyder Consulting	MAEDA	Title: Expansion of Shek Wu Hui Sewage Treatment Works – Location of Air Quality Monitoring Station	Date: Dec 2005 Figure: N.A. Scale: NTS



Hyder Consulting	MAEDA	Title: Expansion of Shek Wu Hui Sewage Treatment Works – Location of Noise Monitoring Station	Date: Dec 2005 Figure: N.A. Scale: NTS

Appendix 5

Action and Limit Levels

Monitoring Station ID	1-hour TSP Level in (μg/m³)		24-hour TSP Level in (μg/m³)	
	Action Level	Limit Level	Action Level	Limit Level
CAM1a	342. 7	500	203.3	260
CAM2a	340.2		201.6	

Action and Limit Levels for Air Quality

Time Period	Action Level	Limit Level
0700 – 1900 hours on normal weekdays	When one documented complaint is received	75 dB(A)

Action and Limit Levels for Noise

Appendix 6

Environmental Requirements and Implementation Status

IMPLEMENTATIONS STATUS OF MITIGATION MEASURES

Implementation Status for Air Quality Control

PP Ref#	Environmental Protection Measures	Location / Timing	Implementation Agent	Implementation Status	Follow-up Action and Final Outcome
Annex I S1.7.1	Dust mitigation measures stipulated in the *Air Pollution Control (construction Dust)* Regulation shall be incorporated to control dust emission from the Site. Notice shall be given to the authority prior to commencement of works.	Works sites / during construction period	Contractor	Properly implemented as appropriate	N/A

The section number in the Project Profile for Expansion of Shek Wu Hui Sewage Treatment works (Application No. DIR-121/2005)

Implementation Status for Water Quality Control

PP Ref#	Environmental Protection Measures	Location / Timing	Implementation Agent	Implementation Status	Follow-up Action and Final Outcome
Annex 2 S2.4.4	The practice outlined in Practice Note for Professional Persons on Construction Site Drainage, Professional Person Environmental Protection Department, 1994 (ProPECC PN 1/94) including the use of sediment traps, wheel washing facilities for vehicles leaving the site, adequate maintenance of drainage systems to prevent flooding and overflow, sewage collection and treatment, and comprehensive waste management (collection, handling, transportation, disposal) procedures should be adopted to minimize the potential water quality impact from construction site runoff and various construction activities.	Works sites / During the construction period	Contractor	Properly implemented as appropriate	N/A
Annex 2 S2.4.4	*Construction Runoff and Drainage* • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed and internal drainage works and erosion and sedimentation control facilities implemented. Channels, earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilitates. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of $0.1m^3s^{-1}$ a sedimentation basin of $30m^3$ would be required and for a flow rate of $0.5m^3s^{-1}$ the basin would be $150m^3$. The detailed design of the sand/silt traps will be undertaken by the contractor prior to the commencement of construction. • Ideally, construction works should be programmed to minimize surface excavation works during the rainy season (April to September). All exposed earth areas should be compacted and vegetated as soon as possible after earthworks have been completed, or alternatively, within 14 days of cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	Works sites / During the construction period	Contractor	Properly implemented as appropriate	N/A

PP Ref#	Environmental Protection Measures	Location / Timing	Implementation Agent	Implementation Status	Follow-up Action and Final Outcome
Annex 2 S2.4.4	*Construction Runoff and Drainage (Cont'd)* • The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows, and all trafficked areas and access roads protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimize the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than $50m^3$ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storms events, especially for areas located near steep slopes.	Works sites / During the construction period	Contractor	Properly implemented as appropriate	N/A

PP Ref#	Environmental Protection Measures	Location / Timing	Implementation Agent	Implementation Status	Follow-up Action and Final Outcome
Annex 2 S2.4.4	*Construction Runoff and Drainage* • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing bay should be provided at every site exits and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • On-site drainage system should be equipped with oil interceptors to separate oil/fuel from contaminated storm water.	Works site / During the construction period	Contractor	Properly implemented as appropriate	N/A
Annex 2 S2.4.4	*General Construction Activities* • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 100% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearly.	Works site / During the construction period	Contractor	Properly implemented as appropriate	N/A
Annex 2 S2.4.4	*Sewage from Construction Workforce* • Sewage from construction workforce should be handled by portable chemical toilets or sewage holding tanks with the sewage regularly collected by a reputable sewage collector for disposal at, for example, SWHSTW. Sewage from on-site toilets should be diverted to and stored within sewage holding tanks for later disposal.	Works site / During the construction period	Contractor	Properly implemented as appropriate	N/A

The section number in the Project Profile for Expansion of Shek Wu Hui Sewage Treatment works (Application No. DIR-121/2005)

Implementation Status for Waste Management

PP Ref#	Environmental Protection Measures	Location / Timing	Implementation Agent	Implementation Status	Follow-up Action and Final Outcome
Annex 3 S3.5.1	*Waste Reduction Measures of Construction Stage* • Measures recommended in the ETWB TCW No. 15/2003 should be followed to require the contractor to prepare and implement an enhanced Waste Management Plan (WMP) to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • For the demolition works, the contractor shall submit a method statement for the works as part of the WMP. The Contractor shall include in the method statement the sequence of demolition and the work programme to facilitate effective recovery of reusable and/or recyclable portions of the C&D materials at the earliest stage, so as to minimise the need for subsequent sorting. • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. • Separate labelled bins shall be provided to segregate aluminium cans from other general refuse generated by the work force, and to encourage collection of by individual collectors. • Any unused chemicals or those with remaining functional capacity shall be recycled. • Maximising the use of reusable steel formwork to reduce the amount of C&D material. • Prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quality of waste to be disposed of to landfill. • 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. • Minimize over ordering of concrete, mortars and cement grout by doing careful check before ordering.	Work site / During the construction period	Contractor	Properly implemented as appropriate	N/A

PP Ref#	Environmental Protection Measures	Location / Timing	Implementation Agent	Implementation Status	Follow-up Action and Final Outcome
Annex 3 S3.5.2 – S3.5.5	*Good Site Practices* • Nomination of approved personnel, such as a site manager, to be responsible for good site practices, and making arrangements for collection of all wastes generated at the site and effective disposal to an appropriate facility. • Training of site personnel in proper waste management and chemical wast handling procedures; • Provision of sufficient waste disposal points and regular collection for disposal; • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • A Waste Management Plan should be prepare and should be submitted to the engineer for approval; and • A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed. • In order to monitor the disposal of C&D material at landfills and public filling facilities, as appropriate, and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements to be implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. The measures recommended in ETWB TCW No. 31/2004 should be followed.	Work site / During the construction period	Contractor	Properly implemented as appropriate	N/A
Annex 3 S3.5.6	*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. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material;	Work site / During the construction period	Contractor	Properly implemented as appropriate	N/A

PP Ref#	Environmental Protection Measures	Location / Timing	Implementation Agent	Implementation Status	Follow-up Action and Final Outcome
Annex 3 S3.5.7	*Construction and Demolition Material* • The C&D material generated from the site formation and demolition works should be sorted on-site into inert C&D material (that is, public fill) and C&D waste. In order to minimise the impact resulting from collection and transportation of C&D material for off-site disposal, the excavated material comprising fill material should be reused on-site as backfilling material as far as practicable. C&D waste, such as wood, plastic, steel and other metals should be reused or recycled and, as a last resort, disposed of to landfill. A suitable area should be designated within the site for temporary stockpiling of C&D material and to facilitate the sorting process.	Work site / During the construction period	Contractor	Properly implemented as appropriate	N/A
Annex 3 S3.5.8	*Chemical Wastes* • When 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 requirements stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers computable with the chemical wastes should be used. Appropriate labels should be securely attached on each chemical waste container indicating the chemical characteristics of the chemical waste, such as explosives, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a license wast collector to transport and dispose of the chemical wastes in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work site / During the construction period	Contractor	Properly implemented as appropriate	N/A

The section number in the Project Profile for Expansion of Shek Wu Hui Sewage Treatment works (Application No. DIR-121/2005)

Implementation Status for Noise Control

PP Ref#	Environmental Protection Measures	Location / Timing	Implementation Agent	Implementation Status	Follow-up Action and Final Outcome
Annex 4 S4.7.1	Use of quiet PME	Work sites / During the construction period	Contractor	Properly implemented as appropriate	N/A
Annex 4 S4.7.3	*Good Site Practice* • Only well-maintained plant should be operated on-site and plant should be services regularly during the construction phase; • Silencers or mufflers on construction equipment should be utilised, if found necessary, to further reduce noise, and should be properly maintained during the construction phase; • Mobile plant should be sited as far away 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, where possible, be orientated so that the noise is directed away from 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	Properly implemented as appropriate	N/A

The section number in the Project Profile for Expansion of Shek Wu Hui Sewage Treatment works (Application No. DIR-121/2005)

Appendix 7

Calibration Records

Annex 2 High Volume Air Sampler Calibration Worksheet

Project Title: Expansion of Shek Wu Hui Sewage Treatment Works
Monitoring Location: Sewage Pumping Station at j/o San Po Street and Po Wan Road (CAM1a)
Date: 06-May-08
Time: 9:15

Sampler Model:	GBM2000H1
Calibrator Orifice no.:	517N
Slope (m):	2.02842
Intercept (b):	-0.01789
Correction coeff. (r)	0.9998
Serial No.:	1062

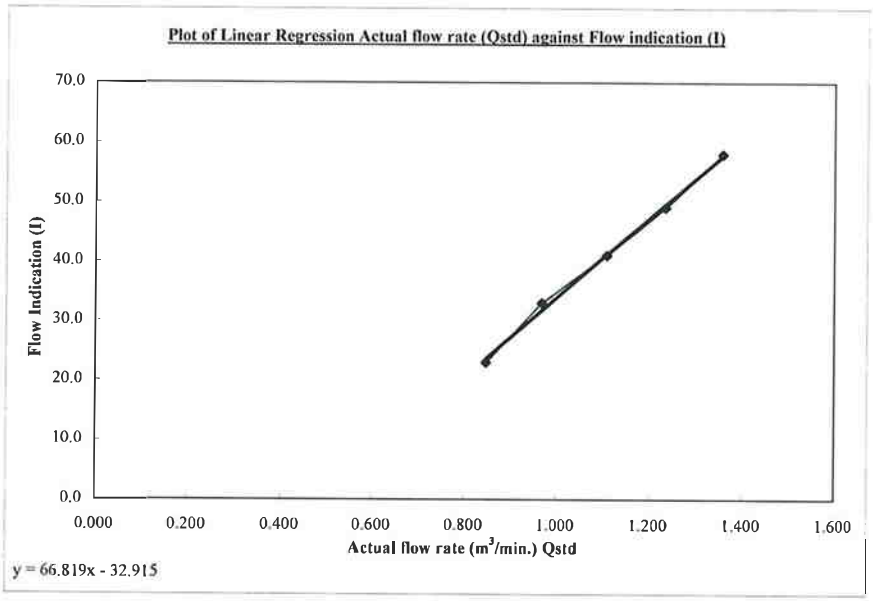
$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

Standard pressure (mmHg) Pstd:	760.0
Standard temp. (K) Tstd:	297.18
Calibration pressure (mmHg) Pa:	757.6
Calibration temp. (K) Ta:	298.0

$$Qstd = \frac{1}{m} \times \left(\sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}} - b\right)$$

Sample no.	Pressure Drop (H), inch	Flow (corrcted), m^3/min	Actual flow rate (Qstd), m^3/min	Flow indication (I), arbitrary
1	7.5	2.734	1.357	58.0
2	6.2	2.486	1.234	49.0
3	5.0	2.233	1.109	41.0
4	3.8	1.946	0.968	33.0
5	2.9	1.700	0.847	23.0

Correlation Coefficient : 0.9984



Remark
Qstd Range 0.6 - 1.7
1HPa = 0.750062 mmHg

Calibrated by: **Hui Chun Ming** **Date:** 06/05/08
( )

Checked by: **Hiu Yeung Tang** **Date:** 10/05/08
( )

Annex 2 High Volume Air Sampler Calibration Worksheet

Project Title: Expansion of Shek Wu Hui Sewage Treatment Works
Monitoring Location: Flood Balancing Pumping Station at Po Wan Road near Wai Loi Tsuen (CAM2a)
Date: 06-May-08
Time: 9:45

Sampler Model:	GBM2000H1
Calibrator Orifice no.:	517N
Slope (m):	2.02842
Intercept (b):	-0.01789
Correction coeff. (r)	0.9998
Serial No.:	1097

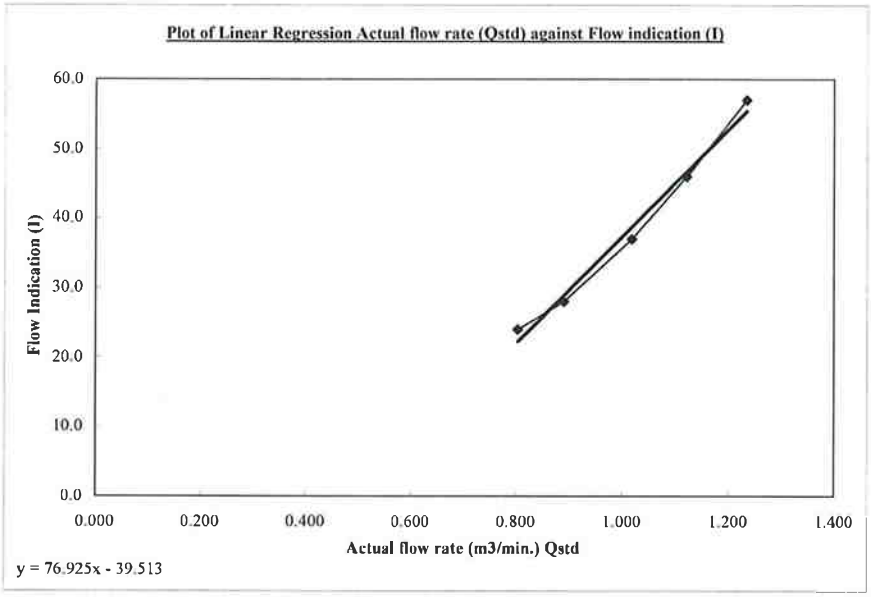
$$Flow(corrected) = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

Standard pressure (mmHg) Pstd:	760.0
Standard temp. (K) Tstd:	297.18
Calibration pressure (mmHg) Pa:	757.6
Calibration temp. (K) Ta:	298.0

$$Qstd = \frac{1}{m} \times \left(\sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}} - b\right)$$

Sample no.	Pressure Drop (H), inch	Flow (corrcted), m^3/min	Actual flow rate (Qstd), m^3/min	Flow indication (I), arbitrary
1	6.2	2.486	1.234	57.0
2	5.1	2.255	1.120	46.0
3	4.2	2.046	1.018	37.0
4	3.2	1.786	0.889	28.0
5	2.6	1.610	0.802	24.0

Correlation Coefficient : 0.9931



Remark
Qstd Range 0.6 - 1.7
1HPa = 0.750062 mmHg

Calibrated by: **Hui Chun Ming** **Date:** 06/05/08
( )

Checked by: **Hiu Yeung Tang** **Date:** 10/05/08
( )

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VILLAGE OF CLEVES, OH 45002
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513.467.9009 FAX
WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Apr 28, 2008 Rootsmeter S/N 9833620 Ta (K) - 296
Operator - Tisch Orifice I.D. - 517N Pa (mm) - 749.3

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	1.4040	3.2	2.00
2	NA	NA	1.00	0.9940	6.4	4.00
3	NA	NA	1.00	0.8860	7.9	5.00
4	NA	NA	1.00	0.8450	8.8	5.50
5	NA	NA	1.00	0.6980	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9883	0.7039	1.4090		0.9957	0.7092	0.8889
0.9841	0.9901	1.9926		0.9915	0.9975	1.2570
0.9820	1.1084	2.2278		0.9894	1.1167	1.4054
0.9809	1.1608	2.3365		0.9882	1.1695	1.4740
0.9756	1.3977	2.8179		0.9829	1.4082	1.7777
Qstd slope (m) =		2.02953		Qa slope (m) =		1.27086
intercept (b) =		-0.01939		intercept (b) =		-0.01223
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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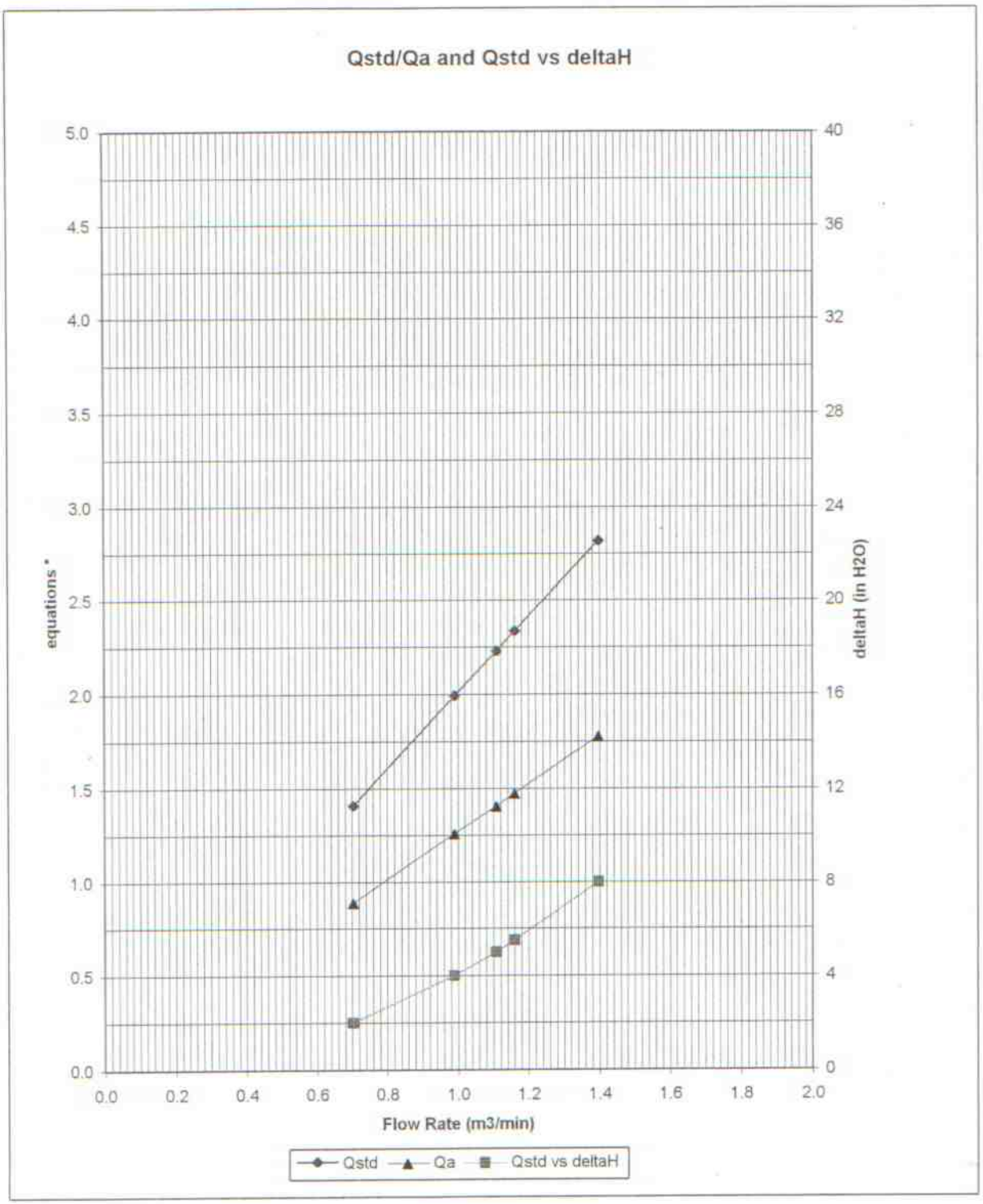
AIR POLLUTION MONITORING EQUIPMENT



#517N

*** y-axis equations:**

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

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

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Calibration Certificate

Certificate No. 80027 Page 1 of 2 Pages

Customer : Hyder Consulting Limited

Address : Room 3801., Hopewell Centre, 183 Queen's Road East, Wan Chai, Hong Kong

Order No. : Q72325 **Date of receipt :** 3-Jan-08

Item Tested

Description : Sound Level Calibrator

Manufacturer : B&K

Model : Type 4231 **Serial No.** : 1770806

Test Conditions

Date of Test : 17-Jan-08 **Supply Voltage** : --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Calibration procedure : F21, Z02.

Test Results

All results were within the IEC 942 Class 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Due Date	Traceable to
S014	Spectrum Analyzer	73602	7-Jul-08	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	71791	16-Jul-08	NIM-PRC & SCL-HKSAR
S041	Universal Counter	73453	22-Aug-08	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : P.F. Wong

Approved by : Dorothy Cheuk

Date: 17-Jan-08

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

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Calibration Certificate

Certificate No. **72989** Page 1 of 4 Pages

Customer : Hyder Consulting Limited

Address : Room 3801., Hopewell Centre, 183 Queen's Road East, Wan Chai, Hong Kong

Order No. : Q71060 **Date of receipt :** 3-Jul-07

Item Tested

Description : Digital Sound Level Meter

Manufacturer : B&K

Model : Type 2236 **Serial No. :** 1774423

Test Conditions

Date of Test : 5-Jul-07 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Calibration procedure : Z01.

Test Results

All results were within the IEC 651 Type 1, IEC 804 Type 1 & IEC 1260 Class 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Due Date	Traceable to
S017	Multi-Function Generator	C071115	14-Mar-08	SCL-HKSAR
S024	Sound Level Calibrator	62691	19-Jul-07	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by : P.F. Wong

Approved by : for Dorothy Cheuk

Date: 5-Jul-07

This Certificate is issued by:
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Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
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Appendix 8

Monitoring Results and Graphical Plots

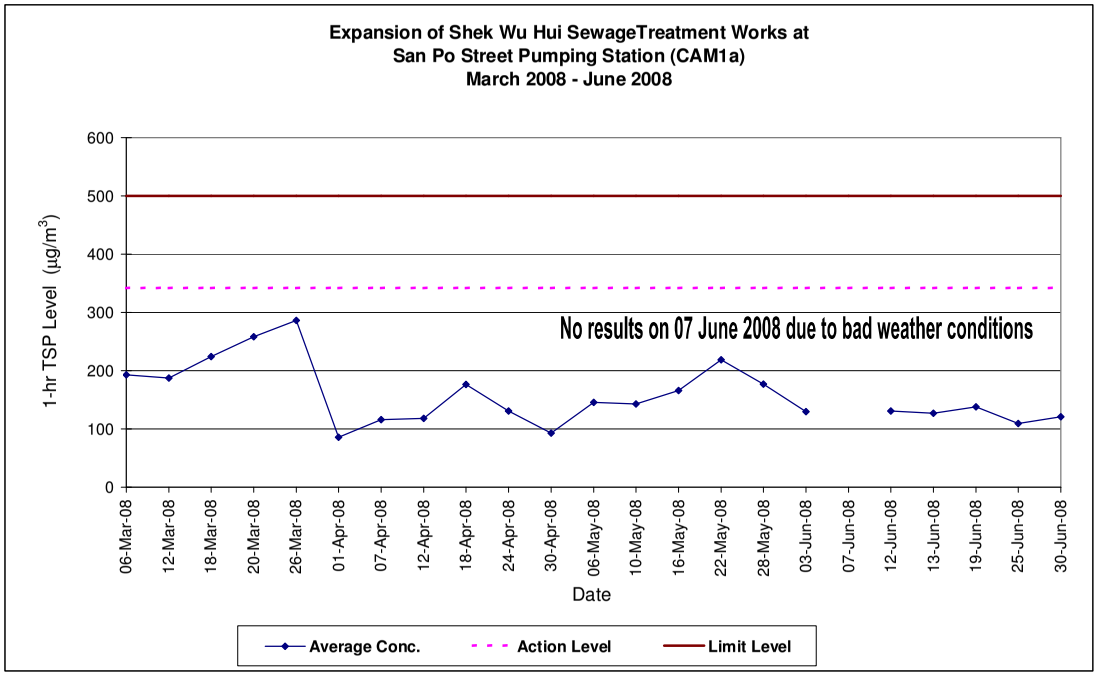
Expansion of Shek Wu Hui Sewage Treatment Works

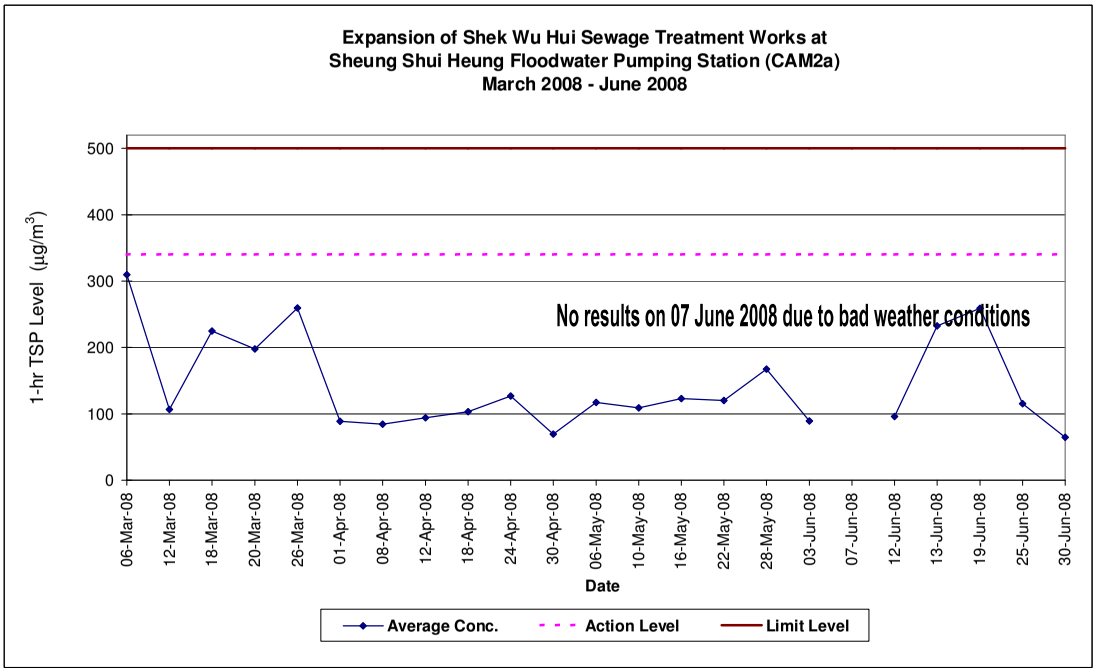
Air Quality Impact Monitoring Results (1-Hour TSP)

Location	Monitoring Date	Weather Conditions	Wind Speed with Direction (m/s)	Temp (°C)	Timer-I	Timer-F	Time (mins)	Flow-I (CFM/ Inches)	Flow-F (CFM/ Inches)	Flow-I (m^3/min)	Flow-F (m^3/min)	Flow-avg (m^3/min)	Volume (m^3)	Weight-I (g)	Weight-f (g)	Weight-diff. (g)	1-hr TSP (ug/m^3)	Average 1-Hr TSP (ug/m^3)	Action/Limit Levels (ug/m^3)	Remark
San Po Street Pumping Station CAM1a	03-Jun-08	Rainy	1.3 SE	21	630866	630962	57.6	40	39	1.09	1.08	1.08	62.42	2.7571	2.7671	0.0100	160.2	129.6	342.7/500	
		Rainy	1.3 SE	21	630962	631063	60.6	40	40	1.09	1.09	1.09	66.12	2.7446	2.7536	0.0090	136.1			
		Rainy	1.3 SE	21	631063	631160	58.2	39	39	1.08	1.08	1.08	62.63	2.7481	2.7539	0.0058	92.6			
	07-Jun-08*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0		No results due to bad weather conditions
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0			
	12-Jun-08**	Cloudy	1.9 S	30	633537	633638	60.6	39	39	1.08	1.08	1.08	65.22	2.7232	2.7316	0.0084	128.8	130.9		
		Cloudy	1.9 S	30	633638	633735	58.2	39	38	1.08	1.06	1.07	62.20	2.7337	2.7414	0.0077	123.8			
		Cloudy	1.9 S	30	633735	633829	56.4	39	39	1.08	1.08	1.08	60.70	2.7286	2.7371	0.0085	140.0			
	13-Jun-08	Rainy	3.4 S	25	633940	634038	58.8	39	40	1.08	1.09	1.08	63.72	2.7955	2.8056	0.0101	158.5	126.7		
		Rainy	3.4 S	25	634038	634136	58.8	40	40	1.09	1.09	1.09	64.16	2.7889	2.7975	0.0086	134.0			
		Rainy	3.4 S	25	634136	634236	60.0	40	39	1.09	1.08	1.08	65.02	2.8064	2.8121	0.0057	87.7			
	19-Jun-08	Fine	1.5 S	28	636626	636724	58.8	40	40	1.09	1.09	1.09	64.16	2.8089	2.8187	0.0098	152.7	138.1		
		Fine	1.5 S	28	636724	636820	57.6	40	40	1.09	1.09	1.09	62.85	2.7912	2.8001	0.0089	141.6			
		Fine	1.5 S	28	636820	636926	63.6	39	39	1.08	1.08	1.08	68.44	2.7953	2.8035	0.0082	119.8			
	25-Jun-08	Rainy	4.4 SW	26	641702	641800	58.8	41	41	1.11	1.11	1.11	65.04	2.7836	2.7928	0.0092	141.5	109.2		
		Rainy	4.4 SW	26	641800	641907	64.2	41	41	1.11	1.11	1.11	71.01	2.8263	2.8319	0.0056	78.9			
		Rainy	4.4 SW	26	641907	642004	58.2	41	41	1.11	1.11	1.11	64.38	2.8005	2.8074	0.0069	107.2			
	30-Jun-08	Cloudy	0.5 SE	29	644402	644495	55.8	41	41	1.11	1.11	1.11	61.72	2.7733	2.7815	0.0082	132.9	120.7		
		Cloudy	0.5 SE	29	644495	644596	60.6	41	41	1.11	1.11	1.11	67.03	2.7558	2.7646	0.0088	131.3			
		Cloudy	0.5 SE	29	644596	644696	60.0	41	41	1.11	1.11	1.11	66.37	2.7274	2.7339	0.0065	97.9			
Sheung Shui Heung Floodwater Pumping Station CAM2a	03-Jun-08	Rainy	1.2 SE	21	744118	744215	58.2	41	41	1.05	1.05	1.05	60.92	2.7256	2.7330	0.0074	121.5	89.1	340/500	
		Rainy	1.2 SE	21	744215	744316	60.6	41	40	1.05	1.03	1.04	63.03	2.7600	2.7654	0.0054	85.7			
		Rainy	1.2 SE	21	744316	744414	58.8	41	41	1.05	1.05	1.05	61.54	2.7461	2.7498	0.0037	60.1			
	07-Jun-08*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0		No results due to bad weather conditions
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0			
	12-Jun-08**	Cloudy	1.9 S	30	746801	746904	61.8	39	39	1.02	1.02	1.02	63.08	2.7549	2.7593	0.0044	69.8	95.9		
		Cloudy	1.9 S	30	746904	747001	58.2	39	39	1.02	1.02	1.02	59.40	2.7296	2.7357	0.0061	102.7			
		Cloudy	1.9 S	30	747001	747095	56.4	39	38	1.02	1.01	1.01	57.20	2.7604	2.7670	0.0066	115.4			
	13-Jun-08	Rainy	3.1 S	25	749586	749686	60.0	40	40	1.03	1.03	1.03	62.02	2.7623	2.7866	0.0243	391.8	232.3		
		Rainy	3.1 S	25	749686	749786	60.0	40	40	1.03	1.03	1.03	62.02	2.7911	2.7998	0.0087	140.3			
		Rainy	3.1 S	25	749786	749884	58.8	39	39	1.02	1.02	1.02	60.02	2.8119	2.8218	0.0099	165.0			
	19-Jun-08	Fine	1.4 S	28	752274	752374	60.0	38	38	1.01	1.01	1.01	60.46	2.8059	2.8237	0.0178	294.4	258.8		
		Fine	1.4 S	28	752374	752474	60.0	38	38	1.01	1.01	1.01	60.46	2.7784	2.7881	0.0097	160.4			
		Fine	1.4 S	28	752474	752574	60.0	39	39	1.02	1.02	1.02	61.24	2.8103	2.8300	0.0197	321.7			
	25-Jun-08	Rainy	4.1 SW	26	754959	755058	59.4	41	40	1.05	1.03	1.04	61.79	2.7979	2.8065	0.0086	139.2	115.2		
		Rainy	4.1 SW	26	755058	755162	62.4	41	42	1.05	1.06	1.05	65.72	2.7940	2.8003	0.0063	95.9			
		Rainy	4.1 SW	26	755162	755257	57.0	41	41	1.05	1.05	1.05	59.66	2.7591	2.7657	0.0066	110.6			
	30-Jun-08	Cloudy	0.7 SE	29	757683	757777	56.4	40	40	1.03	1.03	1.03	58.30	2.7618	2.7668	0.0050	85.8	64.4		
		Cloudy	0.7 SE	29	757777	757878	60.6	40	40	1.03	1.03	1.03	62.64	2.7685	2.7719	0.0034	54.3			
		Cloudy	0.7 SE	29	757878	757978	60.0	40	40	1.03	1.03	1.03	62.02	2.7444	2.7477	0.0033	53.2			

*Shading" indicates an exceedance of Action Level. "Bold and shading" indicates an exceedance of Limit Level.

Note: * No results due to bad weather conditions


Expansion of Shek Wu Hui SewageTreatment Works at
San Po Street Pumping Station (CAM1a)
March 2008 - June 2008
1-hr TSP Level (µg/m3)
600
500
400
300
200
100
0
No results on 07 June 2008 due to bad weather conditions
06-Mar-08
12-Mar-08
18-Mar-08
20-Mar-08
26-Mar-08
01-Apr-08
07-Apr-08
12-Apr-08
18-Apr-08
24-Apr-08
30-Apr-08
06-May-08
10-May-08
16-May-08
22-May-08
28-May-08
03-Jun-08
07-Jun-08
12-Jun-08
13-Jun-08
19-Jun-08
25-Jun-08
30-Jun-08
Date
Average Conc.
Action Level
Limit Level

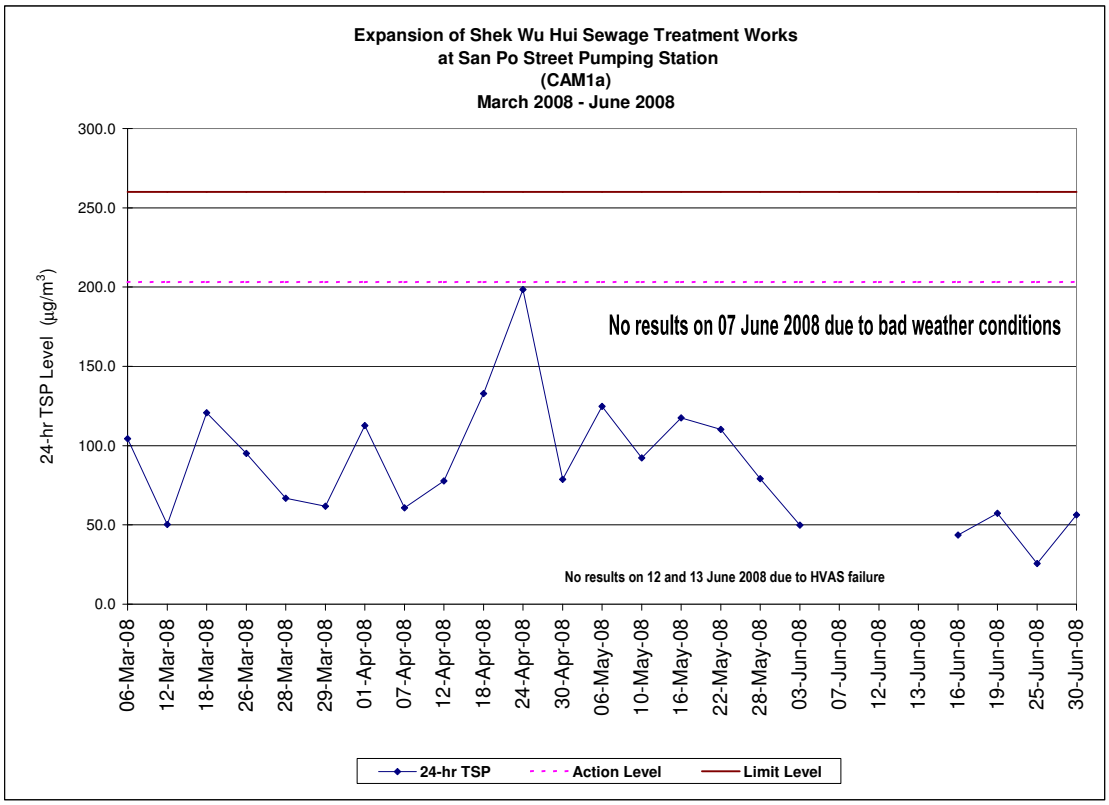

Expansion of Shek Wu Hui Sewage Treatment Works at
Sheung Shui Heung Floodwater Pumping Station (CAM2a)
March 2008 - June 2008
1-hr TSP Level (µg/m3)
500
400
300
200
100
0
No results on 07 June 2008 due to bad weather conditions
06-Mar-08
12-Mar-08
18-Mar-08
20-Mar-08
26-Mar-08
01-Apr-08
08-Apr-08
12-Apr-08
18-Apr-08
24-Apr-08
30-Apr-08
06-May-08
10-May-08
16-May-08
22-May-08
28-May-08
03-Jun-08
07-Jun-08
12-Jun-08
13-Jun-08
19-Jun-08
25-Jun-08
30-Jun-08
Date
Average Conc.
Action Level
Limit Level

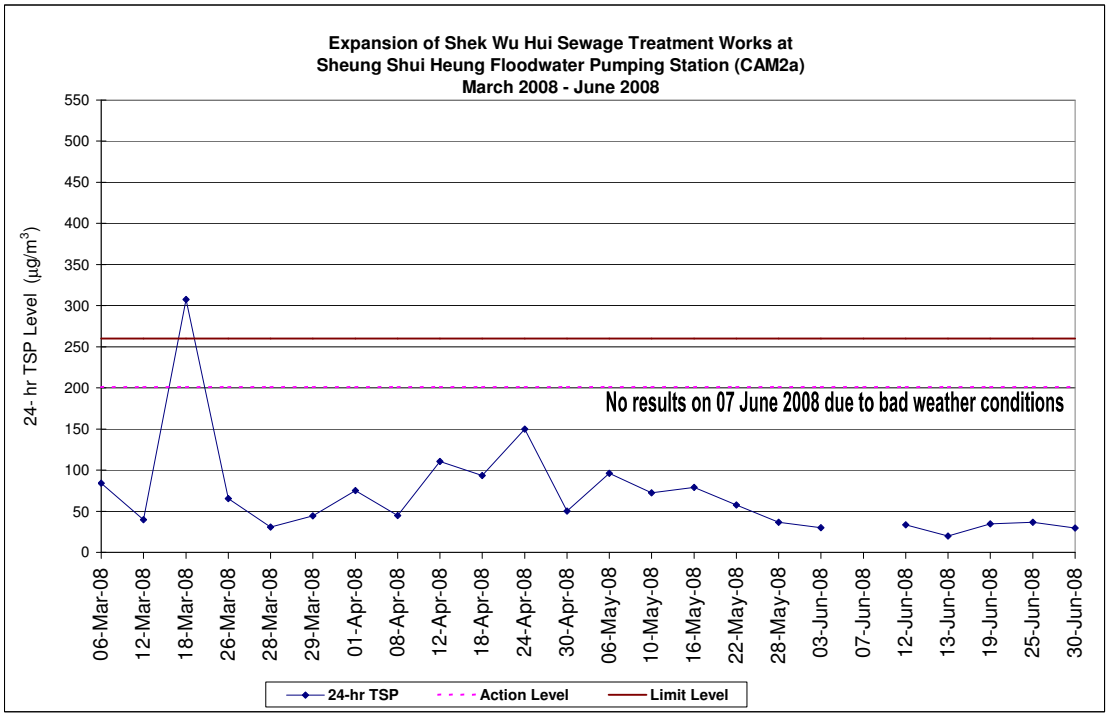
Expansion of Shek Wu Hui Sewage Treatment Works

Air Quality Impact Monitoring Results (24-Hour TSP)

Location	Monitoring Date	Weather Conditions	Wind Speed with Direction (m/s)	Temp (°C)	Pressure (mmHg)	Timer-I	Timer-F	Time (mins)	Flow-I (CFM/ Inches)	Flow-F (CFM/ Inches)	Flow-I (m^3/min)	Flow-F (m^3/min)	Flow-avg (m^3/min)	Volume (m^3)	Weight-I (g)	Weight-f (g)	Weight-diff. (g)	24-hr TSP (ug/m^3)	Action/Limit Levels (ug/m^3)	Remark
San Po Street Pumping Station CAM1a	03-Jun-08	Rainy	1.3 SE	21	1008.5	631160	633537	1426.2	40	39	1.09	1.08	1.08	1545.51	2.7320	2.8089	0.0769	49.8	203/260	
	07-Jun-08*	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	0.0		No results due to bad weather conditions
	12-Jun-08***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0		Power failure
	13-Jun-08***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0		HVAS failure, additional monitoring on 20 June 2008
	16-Jun-08**	Sunny	0.3 E	31	1004.0	634236	636626	1434	38	39	1.06	1.08	1.07	1532.50	2.7967	2.8635	0.0668	43.6		
	19-Jun-08	Fine	1.5 S	28	1009.4	636926	639302	1425.6	40	40	1.09	1.09	1.09	1555.53	2.7782	2.8675	0.0893	57.4		
	25-Jun-08	Rainy	4.4 SW	26	998.4	642004	644402	1438.8	40	40	1.09	1.09	1.09	1569.93	2.8109	2.8513	0.0404	25.7		
	30-Jun-08	Cloudy	0.5 SE	29	1009.0	644696	647090	1436.4	41	41	1.11	1.11	1.11	1588.81	2.7345	2.8240	0.0895	56.3		
Sheung Shui Heung Floodwater Pumping Station CAM2a	03-Jun-08	Rainy	1.2 SE	21	1008.5	744414	746801	1432.2	41	40	1.05	1.03	1.04	1489.73	2.7753	2.8201	0.0448	30.1	201/260	
	07-Jun-08*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0		No results due to bad weather conditions
	12-Jun-08**	Cloudy	1.9 S	30	1006.8	747095	749584	1493.4	39	38	1.02	1.01	1.01	1514.56	2.7384	2.7890	0.0506	33.4		Timer failure, manually stopped
	13-Jun-08	Rainy	3.1 S	25	1003.9	749886	752274	1432.8	37	40	0.99	1.03	1.01	1453.10	2.7819	2.8105	0.0286	19.7		Timer failure, manually stopped
	19-Jun-08	Fine	1.4 S	28	1009.4	752574	754959	1431	39	40	1.02	1.03	1.03	1469.88	2.7905	2.8413	0.0508	34.6		
	25-Jun-08	Rainy	4.1 SW	26	998.4	755257	757683	1455.6	40	40	1.03	1.03	1.03	1504.61	2.7819	2.8369	0.055	36.6		
	30-Jun-08	Cloudy	0.7 SE	29	1009.0	757978	760390	1447.2	40	40	1.03	1.03	1.03	1495.93	2.7665	2.8108	0.0443	29.6		

"Shading" indicates an exceedance of Action Level. "Bold and shading" indicates an exceedance of Limit Level.


Expansion of Shek Wu Hui Sewage Treatment Works
at San Po Street Pumping Station
(CAM1a)
March 2008 - June 2008
24-hr TSP Level (µg/m3)
300.0
250.0
200.0
150.0
100.0
50.0
0.0
No results on 07 June 2008 due to bad weather conditions
No results on 12 and 13 June 2008 due to HVAS failure
06-Mar-08
12-Mar-08
18-Mar-08
26-Mar-08
28-Mar-08
29-Mar-08
01-Apr-08
07-Apr-08
12-Apr-08
18-Apr-08
24-Apr-08
30-Apr-08
06-May-08
10-May-08
16-May-08
22-May-08
28-May-08
03-Jun-08
07-Jun-08
12-Jun-08
13-Jun-08
16-Jun-08
19-Jun-08
25-Jun-08
30-Jun-08
24-hr TSP
Action Level
Limit Level


Expansion of Shek Wu Hui Sewage Treatment Works at
Sheung Shui Heung Floodwater Pumping Station (CAM2a)
March 2008 - June 2008
24- hr TSP Level (µg/m3)
550
500
450
400
350
300
250
200
150
100
50
0
No results on 07 June 2008 due to bad weather conditions
06-Mar-08
12-Mar-08
18-Mar-08
26-Mar-08
28-Mar-08
29-Mar-08
01-Apr-08
08-Apr-08
12-Apr-08
18-Apr-08
24-Apr-08
30-Apr-08
06-May-08
10-May-08
16-May-08
22-May-08
28-May-08
03-Jun-08
07-Jun-08
12-Jun-08
13-Jun-08
19-Jun-08
25-Jun-08
30-Jun-08
24-hr TSP
Action Level
Limit Level

Expansion of Shek Wu Hui Sewage Treatment Works

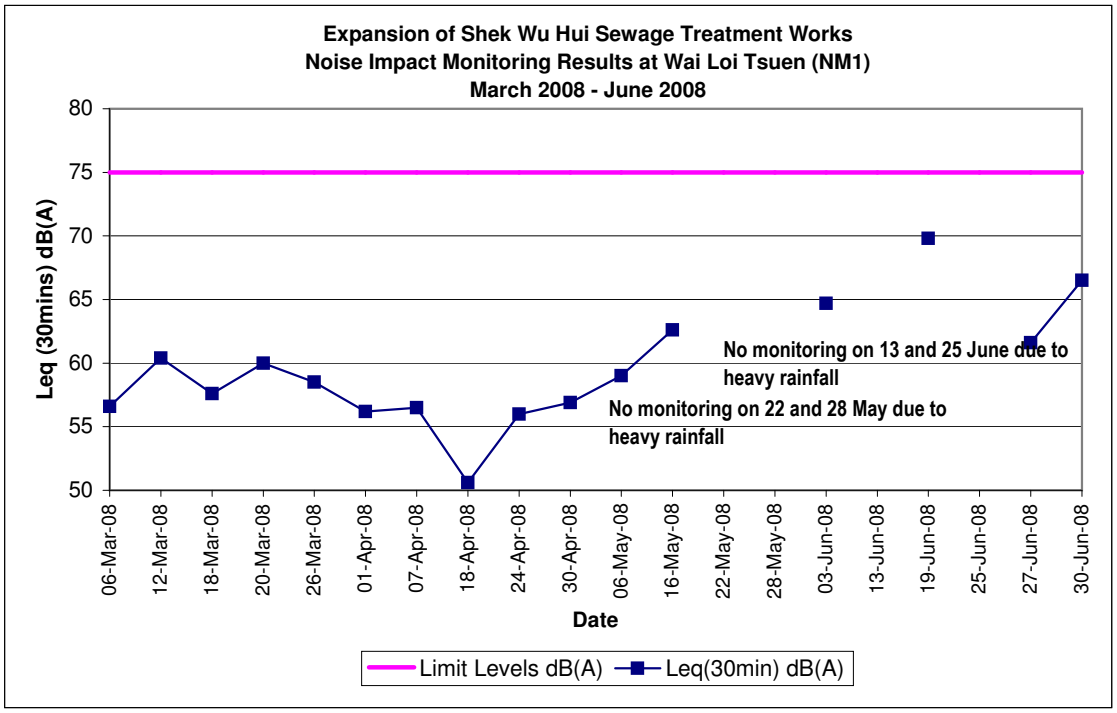
Noise Impact Monitoring Results

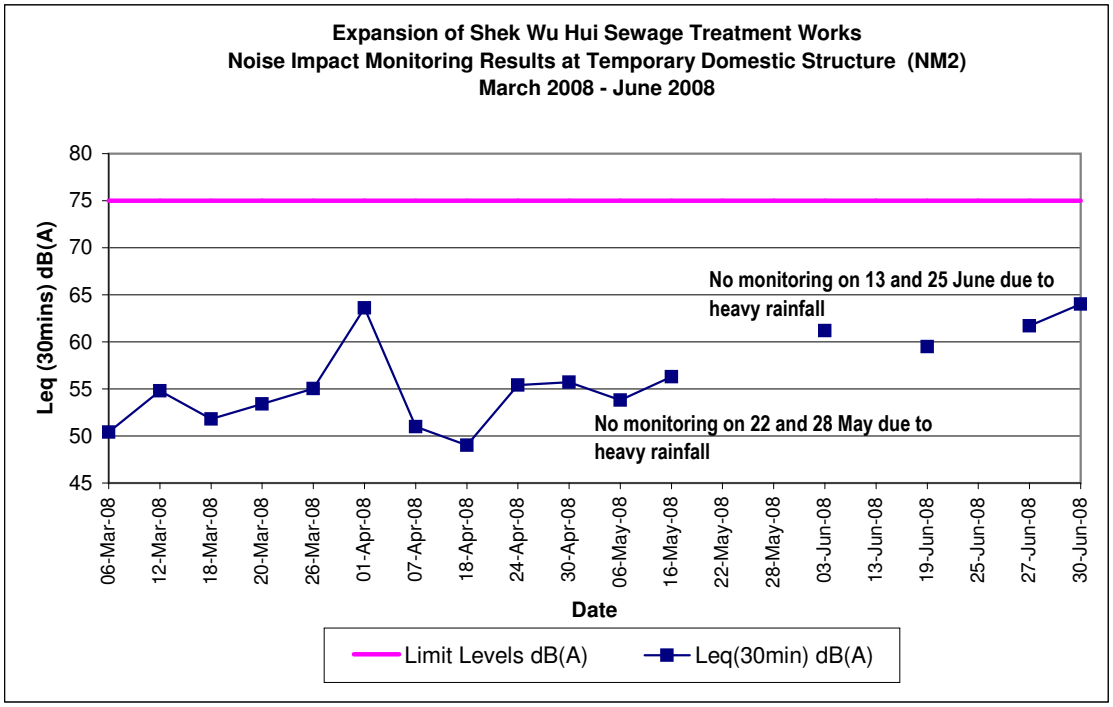
Monitoring Locations	Date	Weather Conditions	Temperature (°C)	Wind Speed (m/s)	Wind Direction	Start Time	End Time	Limit Levels dB(A)	$L_{eq(30min)}$ dB(A)	$L_{10(30min)}$ dB(A)	$L_{90(30min)}$ dB(A)	Remark
Wai Loi Tsuen NM1	03-Jun-08	Rainy	21	1.3	SE	10:35	11:05	75	64.7	66.6	61.4	Free Field
	13-Jun-08*	Rainy	-	-	-	-	-	-	-	-	-	
	19-Jun-08	Fine	28	1.5	S	09:15	09:45	75	69.8	72.8	65.4	Free Field
	25-Jun-08*	Rainy	-	-	-	-	-	-	-	-	-	
	27-Jun-08	Fine	30	0.7	E	16:00	16:30	75	61.6	65.2	58.2	Free Field
	30-Jun-08	Cloudy	29	0.5	SE	13:20	13:50	75	66.5	69.1	63.0	Façade
Temporary Domestic Structure NM2	03-Jun-08	Rainy	21	1.2	SE	11:45	12:15	75	61.2	63.8	58.6	Free Field
	13-Jun-08*	Rainy	-	-	-	-	-	-	-	-	-	
	19-Jun-08	Fine	28	1.4	S	10:20	10:50	75	59.5	63.6	55.3	Free Field
	25-Jun-08*	Rainy	-	-	-	-	-	-	-	-	-	
	27-Jun-08**	Fine	30	0.8	E	16:45	17:15	75	61.7	64.8	58.3	Free Field
	30-Jun-08	Cloudy	29	0.7	SE	14:25	14:55	75	64.0	63.7	57.9	Façade

A façade correction of 3 dB(A) was applied to each measurement result. "Shading" indicates an Limit Level exceedance.

Note: * No results due to heavy rainfall

**Additional Monitoring


Expansion of Shek Wu Hui Sewage Treatment Works
Noise Impact Monitoring Results at Wai Loi Tsuen (NM1)
March 2008 - June 2008
Leq (30mins) dB(A)
80
75
70
65
60
55
50
06-Mar-08
12-Mar-08
18-Mar-08
20-Mar-08
26-Mar-08
01-Apr-08
07-Apr-08
18-Apr-08
24-Apr-08
30-Apr-08
06-May-08
16-May-08
22-May-08
28-May-08
03-Jun-08
13-Jun-08
19-Jun-08
25-Jun-08
27-Jun-08
30-Jun-08
Date
No monitoring on 13 and 25 June due to heavy rainfall
No monitoring on 22 and 28 May due to heavy rainfall
Limit Levels dB(A)
Leq(30min) dB(A)


Expansion of Shek Wu Hui Sewage Treatment Works
Noise Impact Monitoring Results at Temporary Domestic Structure (NM2)
March 2008 - June 2008
Leq (30mins) dB(A)
80
75
70
65
60
55
50
45
06-Mar-08
12-Mar-08
18-Mar-08
20-Mar-08
26-Mar-08
01-Apr-08
07-Apr-08
18-Apr-08
24-Apr-08
30-Apr-08
06-May-08
16-May-08
22-May-08
28-May-08
03-Jun-08
13-Jun-08
19-Jun-08
25-Jun-08
27-Jun-08
30-Jun-08
Date
No monitoring on 13 and 25 June due to heavy rainfall
No monitoring on 22 and 28 May due to heavy rainfall
Limit Levels dB(A)
Leq(30min) dB(A)

Appendix 9

QA/QC Results and Detection Limit

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: AIR		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	SCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 676375)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7576	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7578	----	----	----	----	----	----	----

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: AIR		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	SCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 683629)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7583	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7580	----	----	----	----	----	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 683630)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7583	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7580	----	----	----	----	----	----	----

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: AIR		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	SCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 685220)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7580	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7580	----	----	----	----	----	----	----

Date of Issue : 23 Jun 2008

Client : HYDER CONSULTING LTD
Work Order HK0809597

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: AIR

		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	SCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 687352)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7560	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7575	----	----	----	----	----	----	----

Date of Issue : 23 Jun 2008

Page Number : 3 of 3
Client : HYDER CONSULTING LTD
Work Order HK0809729

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: AIR

		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	SCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 688073)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7575	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7573	----	----	----	----	----	----	----

Date of Issue : 4 Jul 2008

Page Number : 3 of 3
Client : HYDER CONSULTING LTD
Work Order HK0810347

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: AIR

		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	SCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 698397)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7572	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7570	----	----	----	----	----	----	----

Appendix 10

Cumulative Statistics of Complaint, Notification of Summons and Successful Prosecution

Reporting Month	Number Received in the Reporting Month				Cumulative Number			
	Complaint	Notification of Summon	Successful Prosecution	EPD Site Inspection Record	Complaint	Notification of Summon	Successful Prosecution	EPD Site Inspection Record
June 2008	0	0	0	0	0	0	0	0 (Last in February)

Cumulative Number of Environmental Complaint

Appendix 11

Upcoming EM&A Schedule

Expansion of Shek Wu Hui Sewage Treatment Works

Impact Monitoring Programme – June 2008

Date		Air		Noise	Site Inspection
		1-hr TSP	24-hr TSP		
01-June-08	Sun				
02-June-08	Mon				
03-June-08	Tue	✓		✓	
04-June-08	Wed				✓
05-June-08	Thu				
06-June-08	Fri				
07-June-08	Sat	X			
08-June-08	Sun				
09-June-08	Mon				
10-June-08	Tue				
11-June-08	Wed				✓
12-June-08	Thu	✓	✓X		
13-June-08	Fri	✓	✓X	X	
14-June-08	Sat				
15-June-08	Sun				
16-June-08	Mon		✓		
17-June-08	Tue				
18-June-08	Wed				✓
19-June-08	Thu	✓		✓	
20-June-08	Fri				
21-June-08	Sat				
22-June-08	Sun				
23-June-08	Mon				
24-June-08	Tue				
25-June-08	Wed	✓		X	✓
26-June-08	Thu				
27-June-08	Fri			✓	
28-June-08	Sat				
29-June-08	Sun				
30-June-08	Mon	✓		✓	

Note: **In black is shown the original schedule**

In red are marked the changes for the June schedule.

Shaded area indicates public holiday.

Air – Monitoring of three 1-hour TSP and 24-hour TSP at both CAM1a and CAM2a

Noise – Noise measurements at both CNM1 and CNM2 between 0700 and 1900 on normal weekdays

Expansion of Shek Wu Hui Sewage Treatment Works

Impact Monitoring Programme – July 2008 (Tentative)

Date		Air	Noise	Site Inspection
01-July-08	Tue			
02-July-08	Wed			✓
03-July-08	Thu			
04-July-08	Fri			
05-July-08	Sat	✓		
06-July-08	Sun			
07-July-08	Mon			
08-July-08	Tue			
09-July-08	Wed			✓
10-July-08	Thu			
11-July-08	Fri	✓	✓	
12-July-08	Sat			
13-July-08	Sun			
14-July-08	Mon			
15-July-08	Tue			
16-July-08	Wed			✓
17-July-08	Thu	✓	✓	
18-July-08	Fri			
19-July-08	Sat			
20-July-08	Sun			
21-July-08	Mon			
22-July-08	Tue			
23-July-08	Wed	✓	✓	✓
24-July-08	Thu			
25-July-08	Fri			
26-July-08	Sat			
27-July-08	Sun			
28-July-08	Mon			
29-July-08	Tue	✓	✓	
30-July-08	Wed			✓
31-July-08	Thu			

Note:

Shaded area indicates public holiday.

Air – Monitoring of three 1-hour TSP and 24-hour TSP at both CAM1a and CAM2a

Noise – Noise measurements at both CNM1 and CNM2 between 0700 and 1900 on normal weekdays

Expansion of Shek Wu Hui Sewage Treatment Works

Impact Monitoring Programme – August 2008 (Tentative)

Date		Air	Noise	Site Inspection
01-August-08	Fri			
02-August-08	Sat			
03-August-08	Sun			
04-August-08	Mon	✓	✓	
05-August-08	Tue			
06-August-08	Wed			✓
07-August-08	Thu			
08-August-08	Fri			
09-August-08	Sat	✓		
10-August-08	Sun			
11-August-08	Mon			
12-August-08	Tue			
13-August-08	Wed			✓
14-August-08	Thu			
15-August-08	Fri	✓	✓	
16-August-08	Sat			
17-August-08	Sun			
18-August-08	Mon			
19-August-08	Tue			
20-August-08	Wed			✓
21-August-08	Thu	✓	✓	
22-August-08	Fri			
23-August-08	Sat			
24-August-08	Sun			
25-August-08	Mon			
26-August-08	Tue			
27-August-08	Wed	✓	✓	✓
28-August-08	Thu			
29-August-08	Fri			
30-August-08	Sat			
31-August-08	Sun			

Note:

Shaded area indicates public holiday.

Air – Monitoring of three 1-hour TSP and 24-hour TSP at both CAM1a and CAM2a

Noise – Noise measurements at both CNM1 and CNM2 between 0700 and 1900 on normal weekdays

Expansion of Shek Wu Hui Sewage Treatment Works

Impact Monitoring Programme – September 2008 (Tentative)

Date		Air	Noise	Site Inspection
01-September-08	Mon			
02-September-08	Tue	✓	✓	
03-September-08	Wed			✓
04-September-08	Thu			
05-September-08	Fri			
06-September-08	Sat			
07-September-08	Sun			
08-September-08	Mon	✓	✓	
09-September-08	Tue			
10-September-08	Wed			✓
11-September-08	Thu			
12-September-08	Fri			
13-September-08	Sat	✓		
14-September-08	Sun			
15-September-08	Mon			
16-September-08	Tue			
17-September-08	Wed			✓
18-September-08	Thu			
19-September-08	Fri	✓	✓	
20-September-08	Sat			
21-September-08	Sun			
22-September-08	Mon			
23-September-08	Tue			
24-September-08	Wed			✓
25-September-08	Thu	✓	✓	
26-September-08	Fri			
27-September-08	Sat			
28-September-08	Sun			
29-September-08	Mon			
30-September-08	Tue			

Note:

Shaded area indicates public holiday.

Air – Monitoring of three 1-hour TSP and 24-hour TSP at both CAM1a and CAM2a

Noise – Noise measurements at both CNM1 and CNM2 between 0700 and 1900 on normal weekdays

Appendix 12

Monitoring Changes for June 2008

Expansion of Shek Wu Hui Sewage Treatment Works
Impact Monitoring Programme – June 2008 (1-hr TSP: CAM1a and CAM2a)

6- day EM&A compliance	Date		Air	Comments
			1-hr TSP	
	01-June-08	Sun		
	02-June-08	Mon		
MP1	03-June-08	Tue	✓	**Scheduled monitoring undertaken**
	04-June-08	Wed		
	05-June-08	Thu		
	06-June-08	Fri		
	07-June-08	Sat	x	**Scheduled monitoring cancelled, due to adverse weather. (see weather report page 5)**
	08-June-08	Sun		
	09-June-08	Mon		
	10-June-08	Tue		Technicians Unavailable
	11-June-08	Wed		
MP2	12-June-08	Thu	✓	Additional Monitoring undertaken due to lack of data for previous days.
MP3	13-June-08	Fri	✓	**Scheduled monitoring undertaken**
	14-June-08	Sat		
	15-June-08	Sun		
	16-June-08	Mon		
	17-June-08	Tue		
	18-June-08	Wed		
MP4	19-June-08	Thu	✓	**Scheduled monitoring undertaken**
	20-June-08	Fri		
	21-June-08	Sat		
	22-June-08	Sun		
	23-June-08	Mon		
	24-June-08	Tue		
MP5	25-June-08	Wed	✓	**Scheduled monitoring undertaken**
	26-June-08	Thu		
	27-June-08	Fri		
	28-June-08	Sat		
	29-June-08	Sun		
MP6	30-June-08	Mon	✓	**Scheduled monitoring undertaken**

Expansion of Shek Wu Hui Sewage Treatment Works
Impact Monitoring Programme – June 2008 (24-hr TSP: CAM1a)

6-day EM&A Compliance	Date		Air 24 hr CAM1a	Comments
	01-June-08	Sun		
	02-June-08	Mon		
MP1	03-June-08	Tue	✓	**Scheduled monitoring undertaken**
	04-June-08	Wed		
	05-June-08	Thu		
	06-June-08	Fri		
	07-June-08	Sat	X	**Scheduled monitoring cancelled, due to adverse weather(see weather report page 5).**
	08-June-08	Sun		
	09-June-08	Mon		
	10-June-08	Tue		Technicians Unavailable
	11-June-08	Wed		
	12-June-08	Thu	X	**Mechanical fault; HVAS power failure for CAM1a**
	13-June-08	Fri	X	
	14-June-08	Sat		
	15-June-08	Sun		
MP2	16-June-08	Mon	✓	**Additional monitoring undertaken; HVAS has been repaired**
	17-June-08	Tue		
	18-June-08	Wed		
MP3	19-June-08	Thu	✓	**Scheduled monitoring undertaken**
	20-June-08	Fri		
	21-June-08	Sat		
	22-June-08	Sun		
	23-June-08	Mon		
	24-June-08	Tue		
MP4	25-June-08	Wed	✓	**Scheduled monitoring undertaken**
	26-June-08	Thu		
	27-June-08	Fri		
	28-June-08	Sat		
	29-June-08	Sun		
MP5	30-June-08	Mon	✓	**Scheduled monitoring undertaken**

Expansion of Shek Wu Hui Sewage Treatment Works
Impact Monitoring Programme – June 2008 (24-hr TSP: CAM2a)

6-day EM&A Compliance	Date		Air 24 hr CAM2a	Comments
	01-June-08	Sun		
	02-June-08	Mon		
MP1	03-June-08	Tue	✓	**Scheduled monitoring undertaken**
	04-June-08	Wed		
	05-June-08	Thu		
	06-June-08	Fri		
	07-June-08	Sat	X	**Scheduled monitoring cancelled, due to adverse weather (see weather report page 5).**
	08-June-08	Sun		
	09-June-08	Mon		
	10-June-08	Tue		Technicians Unavailable
	11-June-08	Wed		
MP2	12-June-08	Thu	✓	Additional Monitoring undertaken due to lack of data for previous days.
MP3	13-June-08	Fri	✓	**Scheduled monitoring undertaken**
	14-June-08	Sat		
	15-June-08	Sun		
	16-June-08	Mon		
	17-June-08	Tue		
	18-June-08	Wed		
MP4	19-June-08	Thu	✓	**Scheduled monitoring undertaken**
	20-June-08	Fri		
	21-June-08	Sat		
	22-June-08	Sun		
	23-June-08	Mon		
	24-June-08	Tue		
MP5	25-June-08	Wed	✓	**Scheduled monitoring undertaken**
	26-June-08	Thu		
	27-June-08	Fri		
	28-June-08	Sat		
	29-June-08	Sun		
MP6	30-June-08	Mon	✓	**Scheduled monitoring undertaken**

Expansion of Shek Wu Hui Sewage Treatment Works
Impact Monitoring Programme – June 2008 (Noise: NM1 and NM2)

EM&A Compliance	Date		Noise	Comments
	01-June-08	Sun		
Week 1	02-June-08	Mon		
	03-June-08	Tue	✓	Noise monitoring undertaken
	04-June-08	Wed		
	05-June-08	Thu		
	06-June-08	Fri		
	07-June-08	Sat		
	08-June-08	Sun		
Week 2	09-June-08	Mon		
	10-June-08	Tue		
	11-June-08	Wed		
	12-June-08	Thu		
	13-June-08	Fri	X	Scheduled noise monitoring cancelled, due to adverse weather (see weather report page 5).
	14-June-08	Sat	X	Additional noise monitoring attempt aborted, due to adverse weather (see weather report page 5).
	15-June-08	Sun		
Week 3	16-June-08	Mon		
	17-June-08	Tue		
	18-June-08	Wed		
	19-June-08	Thu	✓	Noise monitoring undertaken
	20-June-08	Fri		
	21-June-08	Sat		
	22-June-08	Sun		
Week 4	23-June-08	Mon		
	24-June-08	Tue		
	25-June-08	Wed	X	Scheduled noise monitoring cancelled, due to adverse weather (see weather report page 5).
	26-June-08	Thu		
	27-June-08	Fri	✓	Noise monitoring undertaken
	28-June-08	Sat		
	29-June-08	Sun		
Week 5	30-June-08	Mon	✓	Noise monitoring undertaken

Weather Report for June – Daily Rainfall at Hong Kong Observatory

Date JUNE	Mean Pressure (hPa)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)
1	1006.4	92	88	23.1
2	1006.4	95	87	36.6
3	1008.5	95	89	44.9
4	1008.5	95	84	18.3
5	1007.9	86	82	0.1
6	1008.5	96	96	130.8
7	1009.2	93	93	307.1
8	1010.0	86	81	-
9	1009.9	81	82	-
10	1008.5	81	84	4.5
11	1008.6	81	81	1.7
12	1006.8	81	88	7.2
13	1003.9	87	89	62.5
14	1005.2	93	89	80.8
15	1005.0	92	90	41.3
16	1004.0	96	88	32.3
17	1004.8	95	88	86.9
18	1007.6	93	88	24.8
19	1009.4	87	84	7.6
20	1008.9	79	53	-
21	1006.2	78	33	-
22	1003.5	77	38	-
23	1001.0	75	56	-
24	999.0	79	82	0.6

25	998.4	93	88	146.1
26	1003.9	89	91	100.4
27	1005.2	91	90	60.0
28	1005.7	93	86	35.5
29	1006.7	92	86	44.5
30	1009.0	93	88	48.5
Mean/Total	1006.2	88	81	1346.1
Normal*	1006.2	82	76	388.1

Source: Monthly Weather Summary (www.hko.gov.hk)