



M A E D A

Expansion of Shek Wu Hui Sewage Treatment Works

Monthly EM&A Report No. 33
for August 2008

September 2008

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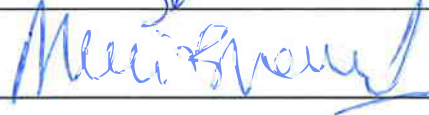
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**Certified by Environmental Team Leader
Alexi Bhanja**



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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 August 2008.

Breaches of Action and Limit Levels

Noise

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

1-hr and 24-hr TSP

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

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 timer failure at monitoring station CAM 1a the monitoring in the month of August 2008 is not completely in line with original schedule. For 24-hr air monitoring the frequency of monitoring at the middle of August is outside that stipulated in the EM&A Manual (Table 2.3 of section 2.6 and section 5.6).

However, the total number of the monitoring events for this month were arranged to meet those specified in the original schedule in order to meet the requirements stipulated in the EM&A Manual.

Parameter	Monitoring location	Monitoring dates
24-hr TSP monitoring	San Po Street Pumping Station (CAM1a)	4 August, 9 August, 15 August*, 19 August, 21 August, 27 August

Note: Dates in Italic refer to additional monitoring

*Timer Failure

Future Key Issues

The construction works are to be substantially completed in September 2008. As a consequence, no construction activities are expected in November 2008.

The construction activities for the coming two months will include 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	Ben Yip	2594 7461
	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
- 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
Effluent Discharge Licence	11 Nov 2005	20 Dec 2005	Licence No.: W5/11287/1	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 FRP covers was 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. $L_{eq(30\text{ min})}$ is used as the monitoring parameter for the period between 0700 and 1900 hours on normal weekdays. For all other time periods, three consecutive $L_{eq(5\text{ min})}$ 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 4-1 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 4-2 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 4-1 and 4-2, respectively.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
Exceedance for one sample	<ul style="list-style-type: none"> Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and ER; Repeat measurement to confirm finding. 	<ul style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method. 	<ul style="list-style-type: none"> Notify Contractor. 	<ul style="list-style-type: none"> Rectify any unacceptable practice; Amend working methods if appropriate.
Exceedance for two or more consecutive samples	<ul style="list-style-type: none"> 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 frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and ER; If exceedance stops, 	<ul style="list-style-type: none"> Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. 	<ul style="list-style-type: none"> Confirm receipt of notification of exceedance in writing; Notify Contractor; Ensure remedial measures properly implemented. 	<ul style="list-style-type: none"> 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
	cease additional monitoring.			
LIMIT LEVEL				
Exceedance for one sample	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Confirm receipt of notification of exceedance in writing; Notify Contractor; Ensure remedial measures properly implemented. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; If exceedance stops, cease additional monitoring. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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.

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

EVENT	Action			
	ET	IEC	ER	CONTRACTOR
Action Level	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Submit noise mitigation proposal to IEC; Implement noise mitigation proposals.
Limit Level	<ul style="list-style-type: none"> 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 results; If exceedance stops, cease additional monitoring. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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.

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 HVSSs 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 m³/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 cm² (63in²);
- 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 $L_{eq(30\text{ minutes})}$ 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 6-1 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 6-2 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	4 August 2008	1013-1313	3 X 1 hour	Sunny
	9 August 2008	1100-1500	3 X 1 hour	Fine
	15 August 2008	0930-1230	3 X 1 hour	Sunny
	21 August 2008	0900-1200	3 X 1 hour	Fine
	27 August 2008	0930-1230	3 X 1 hour	Sunny
CAM2a	4 August 2008	1020-1320	3 X 1 hour	Sunny
	9 August 2008	1110-1510	3 X 1 hour	Fine
	15 August 2008	0915-1215	3 X 1 hour	Sunny
	21 August 2008	0910-1210	3 X 1 hour	Fine
	27 August 2008	0940-1240	3 X 1 hour	Sunny
24-hr TSP				
CAM1a	4 August 2008	1313-1313	24 hours	Sunny
	9 August 2008	1500-1500	24 hours	Fine
	15 August 2008*	-	-	-
	<i>19 August 2008</i>	1600-1600	24 hours	Sunny
	21 August 2008	1200-1200	24 hours	Fine
	27 August 2008	1230-1230	24 hours	Sunny
CAM2a	4 August 2008	1320-1320	24 hours	Sunny
	9 August 2008	1510-1510	24 hours	Fine
	15 August 2008	1215-1215	24 hours	Sunny
	21 August 2008	1210-1210	24 hours	Fine
	27 August 2008	1240-1240	24 hours	Sunny

Note: Dates in *Italic* refer to additional monitoring

*Timer Failure

Table 6-4 Sampling Schedule of Air Quality Monitoring

Station	Date	Time	Duration	Weather Condition
NM1	4 August 2008	1025-1055	30 minutes	Sunny
	15 August 2008	0935-1005	30 minutes	Sunny
	21 August 2008	0915-0945	30 minutes	Fine
	27 August 2008	0950-1020	30 minutes	Sunny
NM2	4 August 2008	1440-1510	30 minutes	Sunny
	15 August 2008	1035-1105	30 minutes	Sunny
	21 August 2008	1015-1045	30 minutes	Fine
	27 August 2008	1045-1115	30 minutes	Sunny

Table 6-5 Sampling Schedule of Noise Monitoring

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 6-6 and detailed in Appendix 8. Graphical plots of the monitoring results are also provided in Appendix 8.

Station	Date	Measured Level ($\mu\text{g}/\text{m}^3$)		Action/Limit Level ($\mu\text{g}/\text{m}^3$)	
		1-hr TSP	24-hr TSP	1-hr TSP	24-hr TSP
CAM1a	4 August 2008	201.1	96.7	342.7/500	203.3/260
		254.9			
		193.2			
	9 August 2008	75.3	71.0		
		88.0			
		81.8			
	15 August 2008	44.2	-*		
		39.1			
		40.9			
	19 August 2008	NA	79.7		
	21 August 2008	132.6	124.5		
		162.3			
219.2					
27 August 2008	97.5	59.6			
	64.0				
	163.0				
CAM2a	4 August 2008	133.3	83.1	340.2/500	201.6/260
		212.9			
		181.0			
	9 August 2008	52.5	50.1		
	55.9				

Station	Date	Measured Level ($\mu\text{g}/\text{m}^3$)		Action/Limit Level ($\mu\text{g}/\text{m}^3$)	
		1-hr TSP	24-hr TSP	1-hr TSP	24-hr TSP
		35.6			
	15 August 2008	37.4	35.7		
		40.0			
		28.7			
	21 August 2008	125.3	100.2		
		134.9			
		203.2			
	27 August 2008	55.8	45.7		
		69.2			
		94.7			

Note:

- (1) "Shading" indicates an exceedance of Action Level. "Bold and shading" indicates an exceedance of Limit Level.
- (2) Dates in *italics* refers to additional monitoring
- (3) *Timer Failure

Table 6-6 Air Quality Monitoring Results

Noise monitoring results are summarised in Table 6-7 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 $L_{eq}(30 \text{ min}), \text{dB(A)}$
		$L_{eq}(30 \text{ min})$	$L_{10}(30 \text{ min})$	$L_{90}(30 \text{ min})$	
NM1	4 August 2008	64.2	65.8	62.2	75
	15 August 2008	66.3	67.8	63.3	
	21 August 2008	68.3	70.9	66.2	
	27 August 2008	68.0	70.6	65.9	
NM2	4 August 2008	59.9	62.0	57.4	
	15 August 2008	61.5	64.0	59.3	
	21 August 2008	58.4	60.7	56.2	
	27 August 2008	58.3	60.9	56.0	

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

(2) A facade correction of 3dB(A) was applied to each of noise measurements.

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.

No non-compliance of Action or Limit Level was recorded for air 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 7, 13, 20, and 29 August 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 7-1.

Inspection Date	Deficiencies	Recommendation	Status	Note / Reminder
Follow-up issues	<ol style="list-style-type: none"> 1. Stockpile of soil was observed near Air Blower House and SHT. 2. Accumulation of C&D waste was observed near Final sedimentation tank. 3. Oil stain on bare ground was observed near SHT. 	<ol style="list-style-type: none"> 1. The Contractor was requested to cover it with tarpaulin sheet. 2. The Contractor was requested to cover it promptly. 3. The Contractor was requested to clean it up and to carry out plant maintenance works at bounded maintenances area. 	<ol style="list-style-type: none"> 1. During site inspection on 07 August 2008, stockpile of soil had been removed from the site. (Closed) 2. During site inspection on 07 August 2008, C&D waste was removed. (Closed) 3. During site inspection on 07 August 2008, oil stain near SHT was removed. (Closed) 	N/A
7 August 2008	<ol style="list-style-type: none"> 1. Stagnant water was observed at various areas. 2. Muddy water was observed inside trench near final sedimentation tank. 	<ol style="list-style-type: none"> 1. The Contractor was reminded to remove it after rainstorms. 2. The Contractor was reminded to treat all wastewater prior to discharge. 	<ol style="list-style-type: none"> 1. The Contractor has taken note of the reminder and removed the stagnant water immediately. (Closed) 2. The Contractor has taken not of the reminder and taken action immediately. (Closed) 	N/A
13 August 2008	<ol style="list-style-type: none"> 1. Oil bucket was observed at site area adjacent to SHT. 2. Stagnant water was observed at the storage area adjacent to site office. 	<ol style="list-style-type: none"> 1. The Contractor was requested to store it in a proper place. 2. The Contractor was requested to remove it promptly. 	<ol style="list-style-type: none"> 1. During site inspection on 20 August 2008, the oil bucket had been removed from the site. (Closed) 2. During site inspection on 20 August 2008, stagnant water had been properly removed. (Closed) 	N/A
20 August 2008	<ol style="list-style-type: none"> 1. Accumulation of general refuse was observed at refuse collection point 	<ol style="list-style-type: none"> 1. The Contractor was reminded to clear it more regularly. 	<ol style="list-style-type: none"> 1. During site inspection on 29 August 2008, accumulation of general refuse was 	<ol style="list-style-type: none"> 1. N/A 2. The Contractor was reminded to provide water spraying more

Inspection Date	Deficiencies	Recommendation	Status	Note / Reminder
	adjacent to site office. 2. Silty trails were observed at site exit. 3. Dry haul road was observed near site exit. 4. Dry stockpile was observed near Air Blower House.	2. The Contractor was requested to clean up immediately. 3. The Contractor was requested to provide water spraying more regularly. 4. The Contractor was requested to provide proper cover to all dusty materials.	cleaned. (Closed) 2. During site inspection on 29 August 2008, muddy trails were cleaned up. (Closed) 3. During site inspection on 29 August 2008, no dry haul was observed. (Closed) 4. During site inspection on 29 August 2008, the stockpiles were covered properly. (Closed)	water spraying more regularly.
29 August 2008	No environmental deficiency was observed	No recommendations	N/A	N/A

Table 7-1 Summaries of Site Inspections and Recommendations

There was no EPD inspection carried out in August 2008. The site audit conducted by IEC was carried out on 20 August 2008 and the Contractor has undertaken appropriate actions in response to the IEC's findings.

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 – 217.38 m³, and
- General Refuse – 19.5 m³.

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 works are to be substantially completed in September 2008. As a consequence, no construction activities are expected in November 2008. The construction activities for the coming two months are summarized below:

- 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 August 2008 for the Project based on the requirements in the EM&A Manual.

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

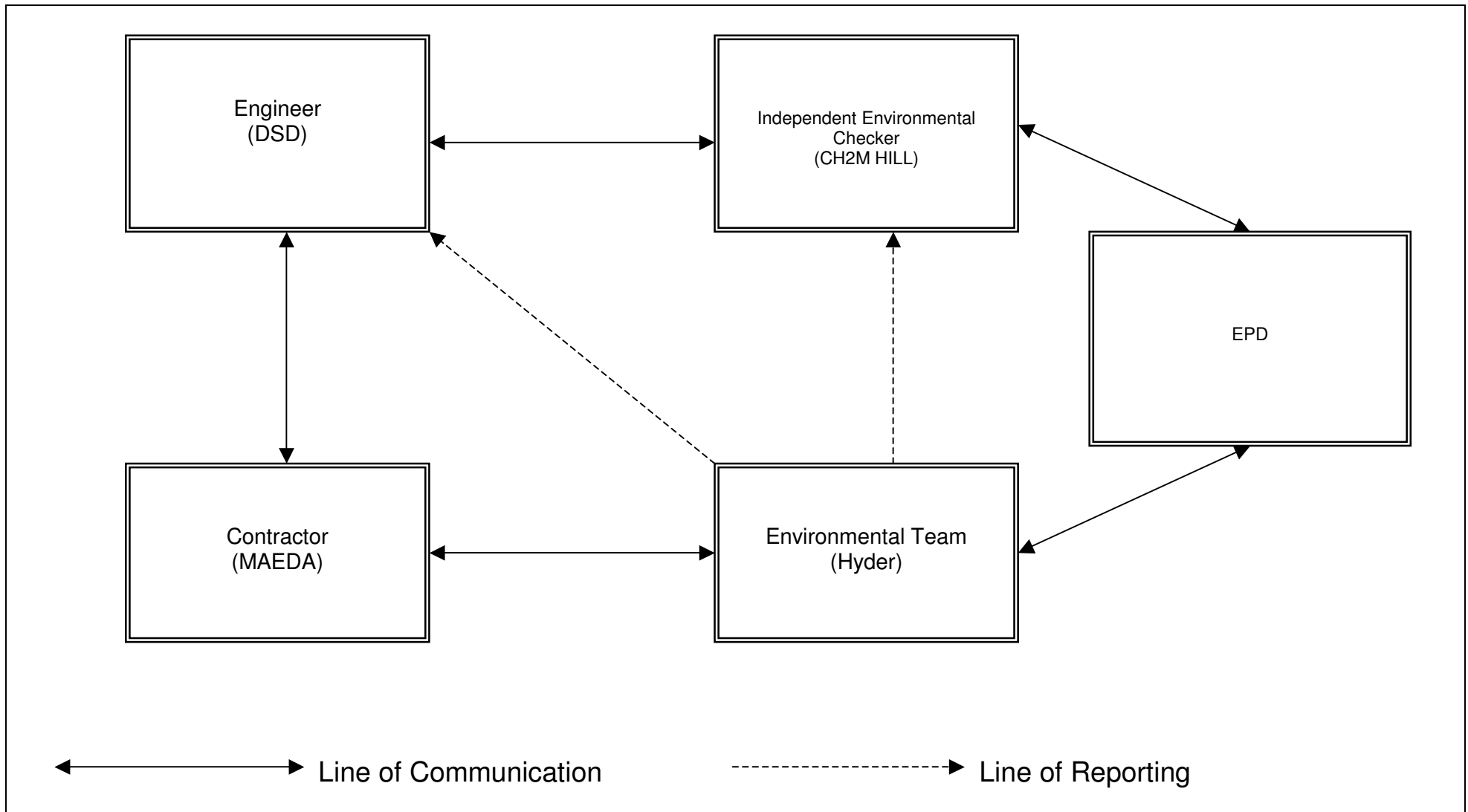
No non-compliance of action/limit level for air and noise monitoring was recorded at any monitoring stations during the reporting month.



No complaint, 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

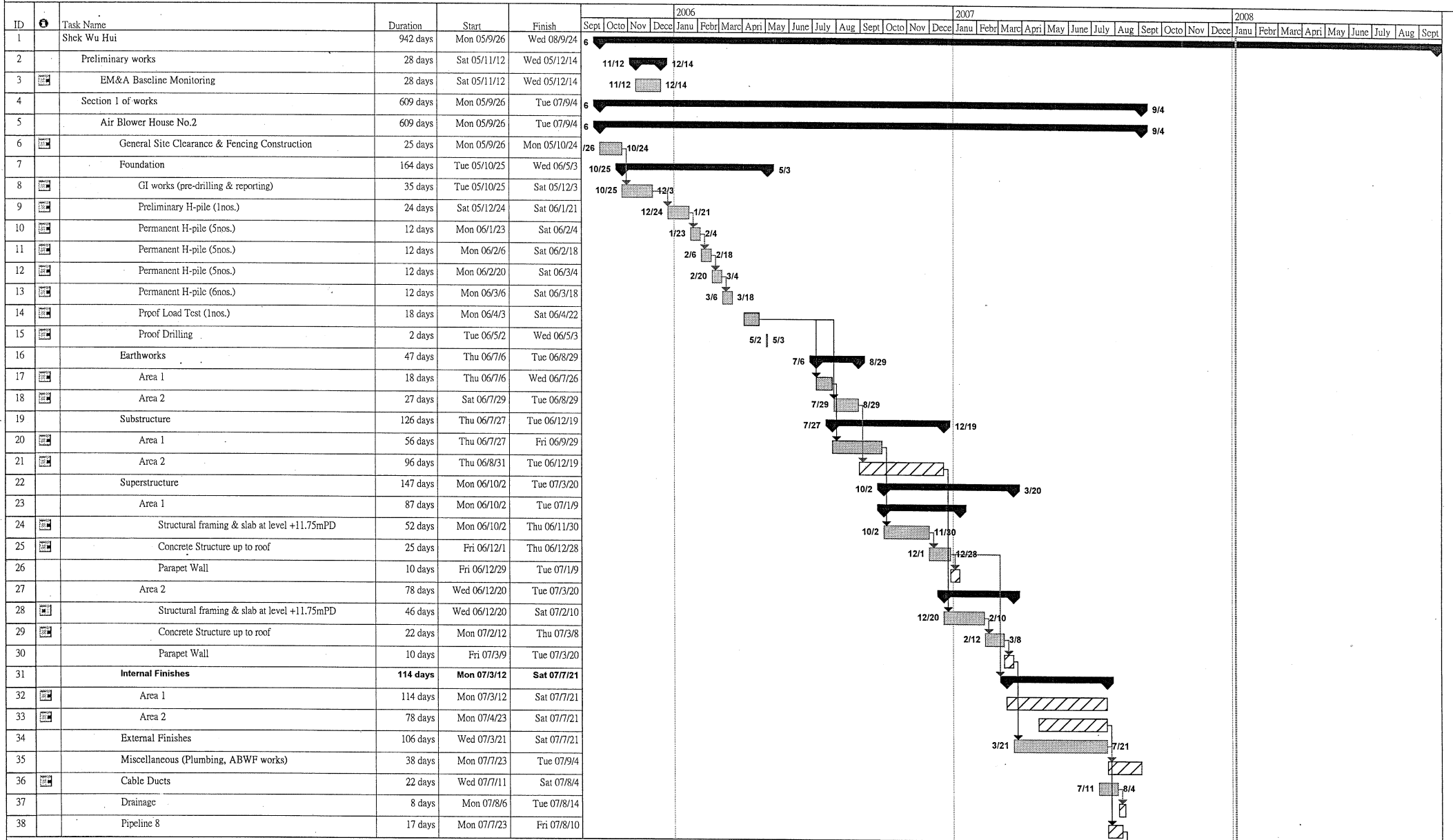


		Title Expansion of Shek Wu Hui Sewage Treatment Works – Project Organization	Date	Dec 2005
			Figure	N.A.
			Scale	NTS

Appendix 2

Construction Programme

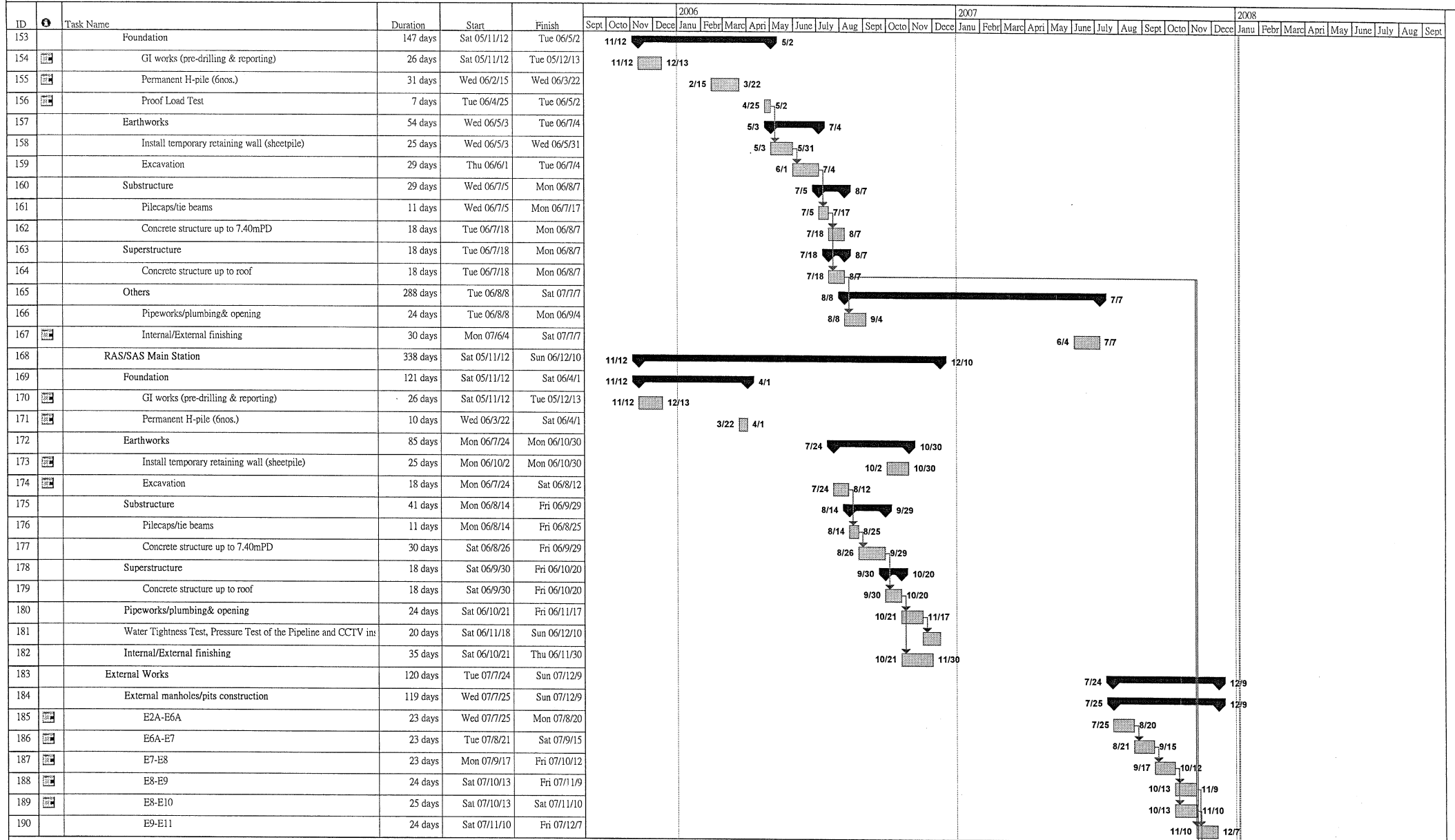
Maeda Corporation
 Contract No. DC2005/01
 Expansion of Shek Wu Hui Sewage Treatment Works and
 Upgrading of Ting Kok Road Pumping Station No.5
 Master Programme (Rev. 6A)



Date: Sat 08/1/5

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

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)

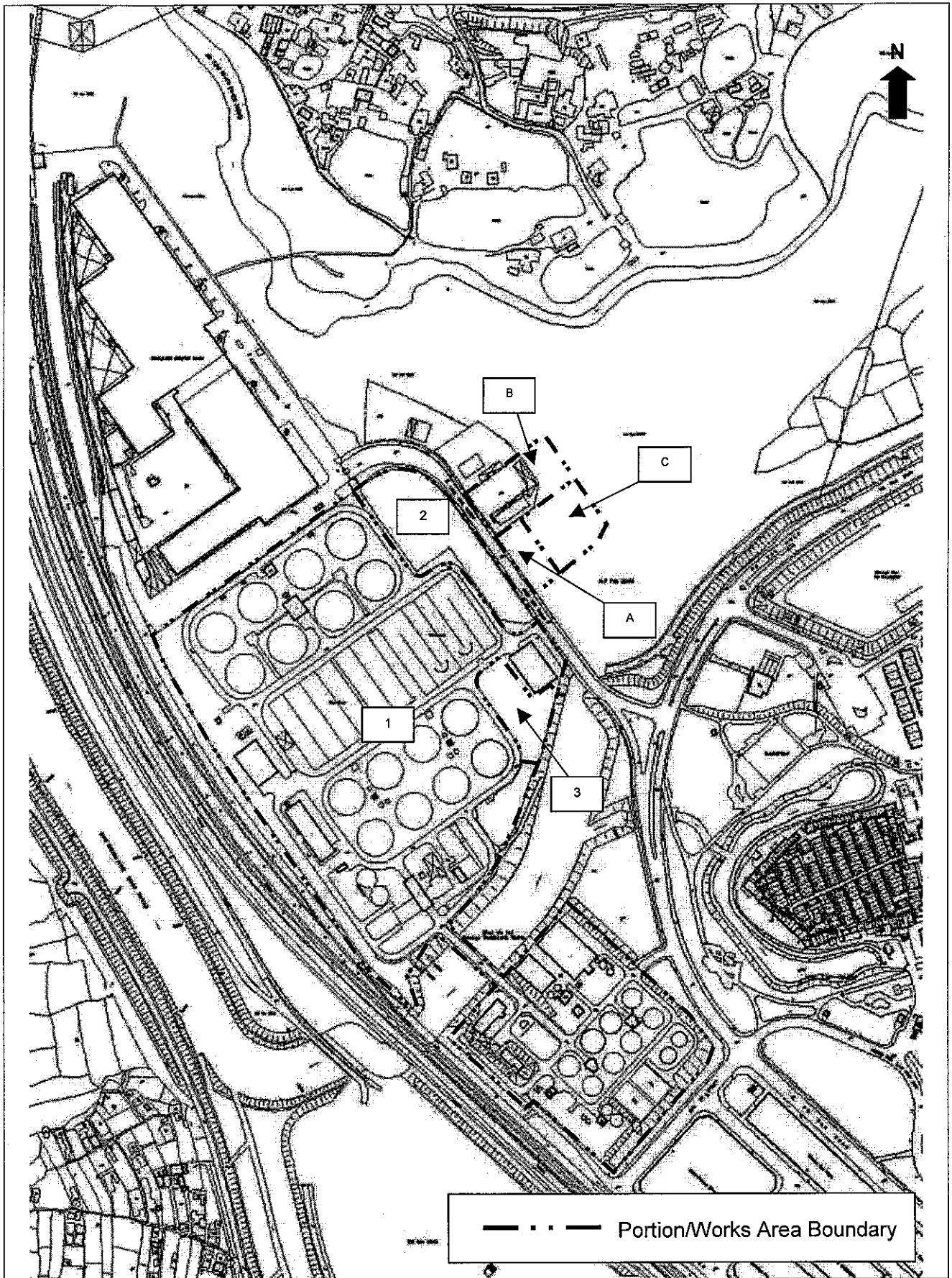


Date: Sat 08/1/5



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

Appendix 3

Location of Works

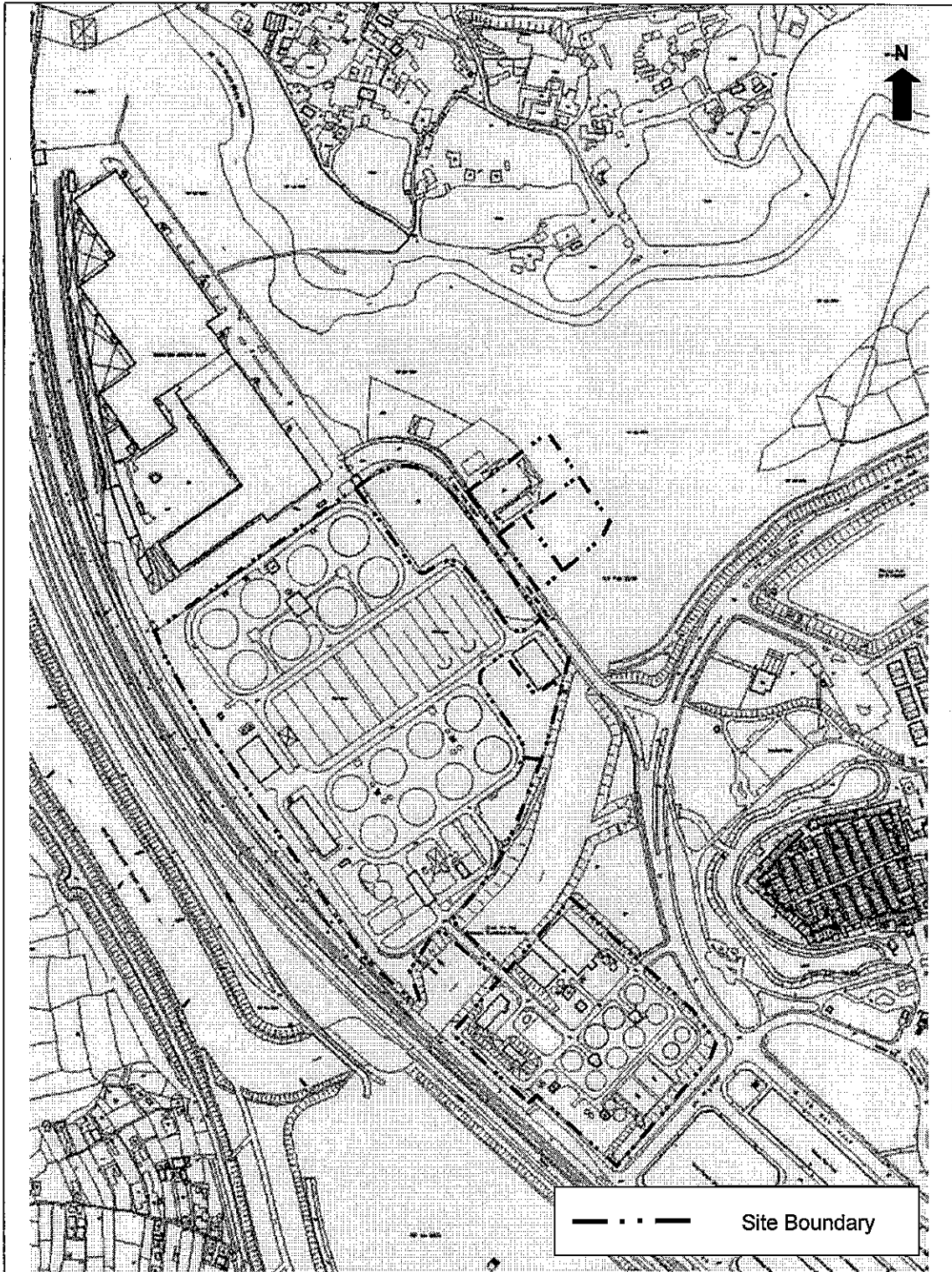


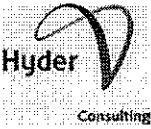
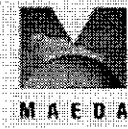
--- · · --- Portion/Works Area Boundary

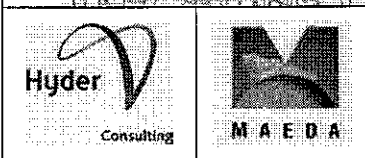
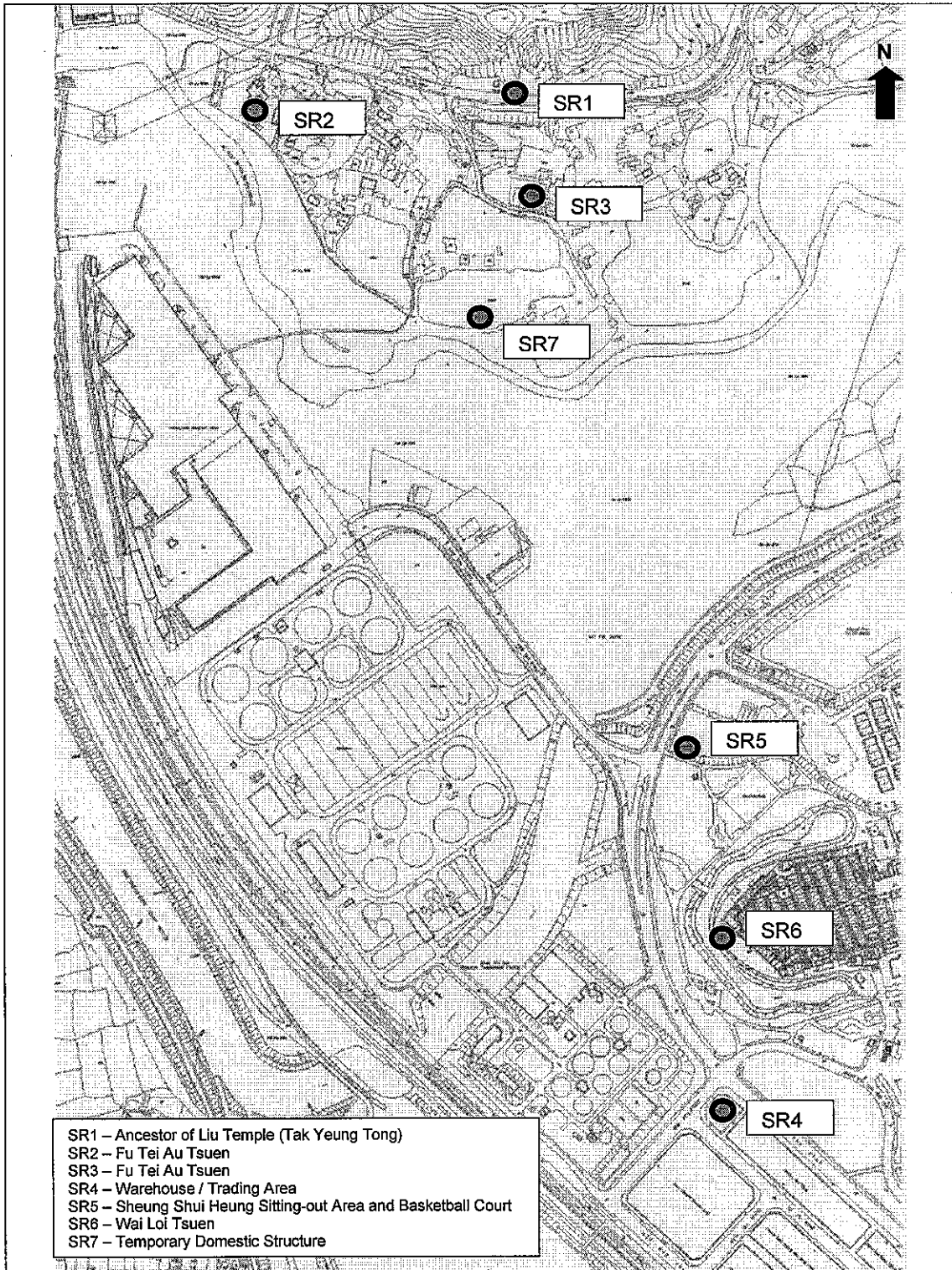
		<p>Title</p> <p>Expansion of Shek Wu Hui Sewage Treatment Works – Location of Portion/Works Area</p>	<p>Date</p> <p>Dec 2005</p>
			<p>Figure</p> <p>N.A.</p>
			<p>Scale</p> <p>NTS</p>

Appendix 4

Project Area, Environmental Sensitive Receiver and Monitoring Location



		<p>Title</p> <p>Expansion of Shek Wu Hui Sewage Treatment Works – Project Area</p>	Date	Dec 2005
			Figure	N.A.
			Scale	NTS

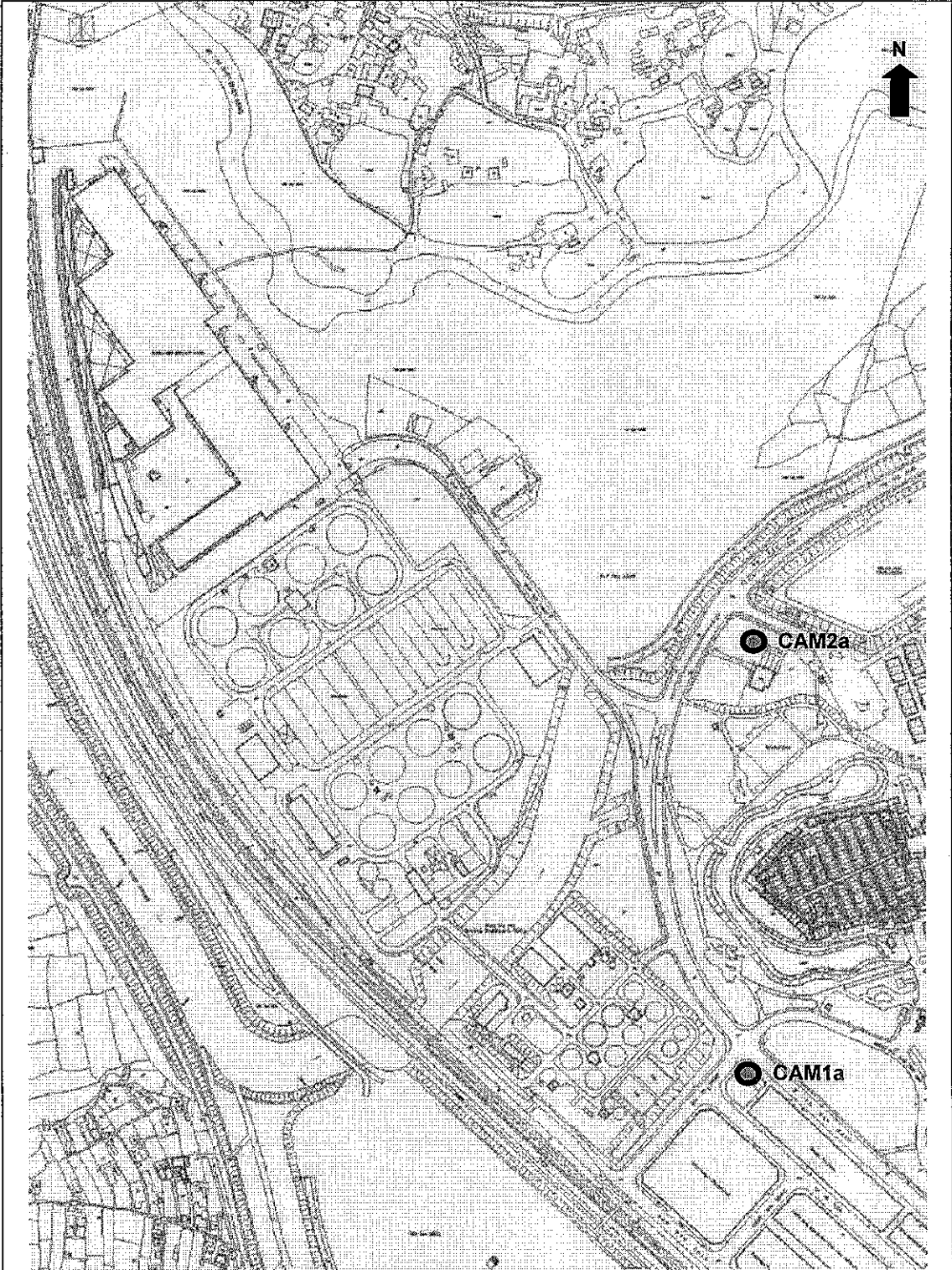


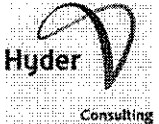

Title
Expansion of Shek Wu Hui Sewage Treatment Works – Environmental Sensitive Receiver

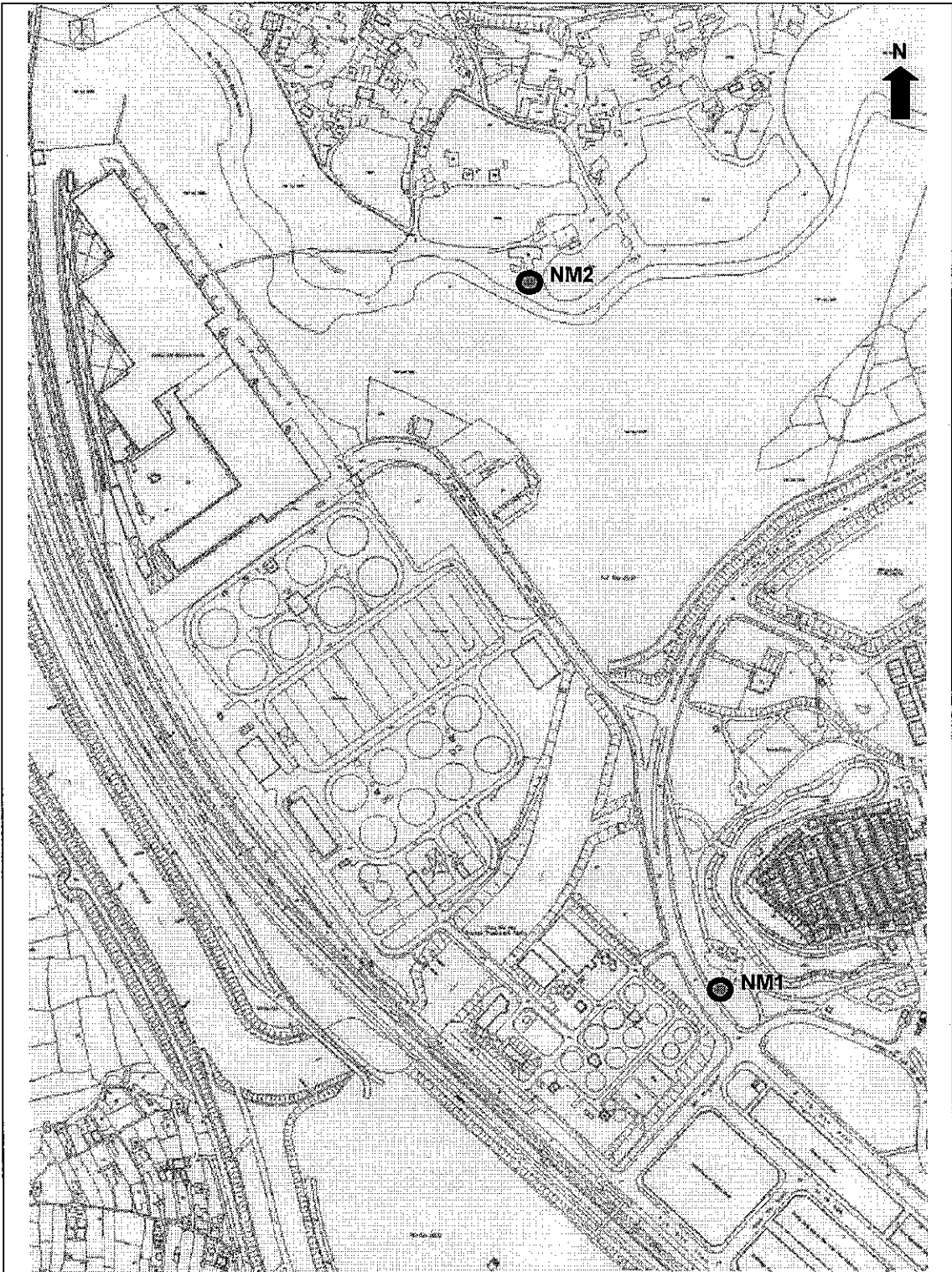
Date
Dec 2005

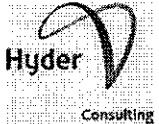

Figure
N.A.

Scale
NTS



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



		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 ($\mu\text{g}/\text{m}^3$)		24-hour TSP Level in ($\mu\text{g}/\text{m}^3$)	
	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 <i>Air Pollution Control (construction Dust)</i> 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	<p><i>Construction Runoff and Drainage</i></p> <ul style="list-style-type: none"> 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 facilities. 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 $0.1\text{m}^3\text{s}^{-1}$ a sedimentation basin of 30m^3 would be required and for a flow rate of $0.5\text{m}^3\text{s}^{-1}$ 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	<p><i>Construction Runoff and Drainage (Cont'd)</i></p> <ul style="list-style-type: none"> • 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 50m³ 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	<p><i>Construction Runoff and Drainage</i></p> <ul style="list-style-type: none"> 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	<p><i>General Construction Activities</i></p> <ul style="list-style-type: none"> 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 nearby. 	Works site / During the construction period	Contractor	Properly implemented as appropriate	N/A
Annex 2 S2.4.4	<p><i>Sewage from Construction Workforce</i></p> <ul style="list-style-type: none"> 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	<p><i>Waste Reduction Measures of Construction Stage</i></p> <ul style="list-style-type: none"> • 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	<p><i>Good Site Practices</i></p> <ul style="list-style-type: none"> • 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 waste handling procedures; • Provision of sufficient waste disposal points and regular collection for disposal; • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • A Waste Management Plan should be prepared 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	<p><i>General Refuse</i></p> <ul style="list-style-type: none"> • 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	<p><i>Construction and Demolition Material</i></p> <ul style="list-style-type: none"> 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	<p><i>Chemical Wastes</i></p> <ul style="list-style-type: none"> 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 compatible 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 licensed waste 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	<p><i>Good Site Practice</i></p> <ul style="list-style-type: none"> • Only well-maintained plant should be operated on-site and plant should be serviced 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: Flood Balancing Pumping Station at Po Wan Road near Wai Loi Tsuen (CAM2a)
Date: 05-Jul-08
Time: 09:45

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

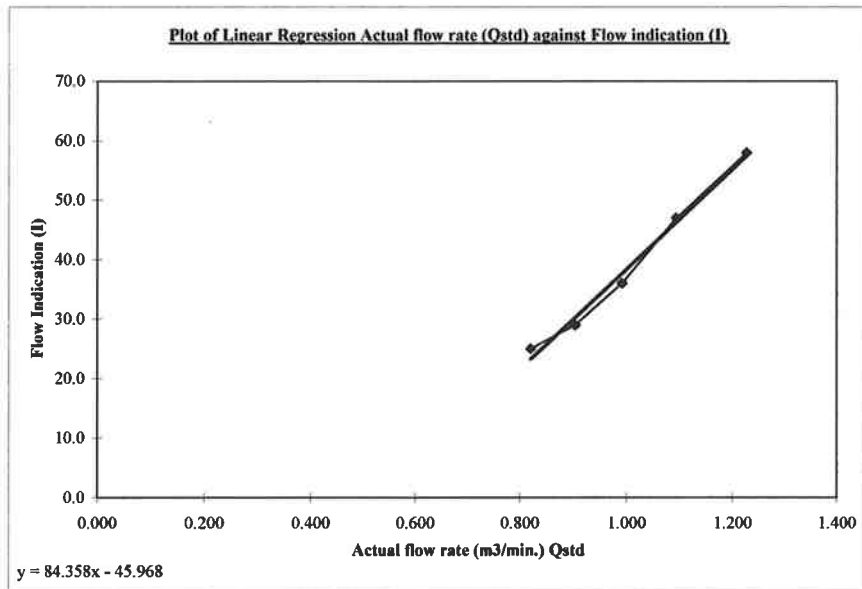
$$\text{Flow (corrected)} = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

Standard pressure (mmHg) Pstd:	760.0
Standard temp. (K) Tstd:	297.18
Calibration pressure (mmHg) Pa:	755.5
Calibration temp. (K) Ta:	305.8


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

Sample no.	Pressure Drop (H), inch	Flow (corrected), m ³ /min	Actual flow rate (Qstd), m ³ /min	Flow indication (I), arbitrary
1	6.3	2.470	1.227	58.0
2	5.0	2.201	1.094	47.0
3	4.1	1.993	0.991	36.0
4	3.4	1.815	0.904	29.0
5	2.8	1.647	0.821	25.0


Correlation Coefficient : 0.9945



Remark
 Qstd Range 0.6 - 1.7
 1HPa = 0.750062 mmHg

Calibrated by: Hui Chun Ming
 ()

Date: 7.7.08

Checked by: Hiu Yeung Tang
 ()

Date: 7.7.08

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: 05-Jul-08
Time: 09:15

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

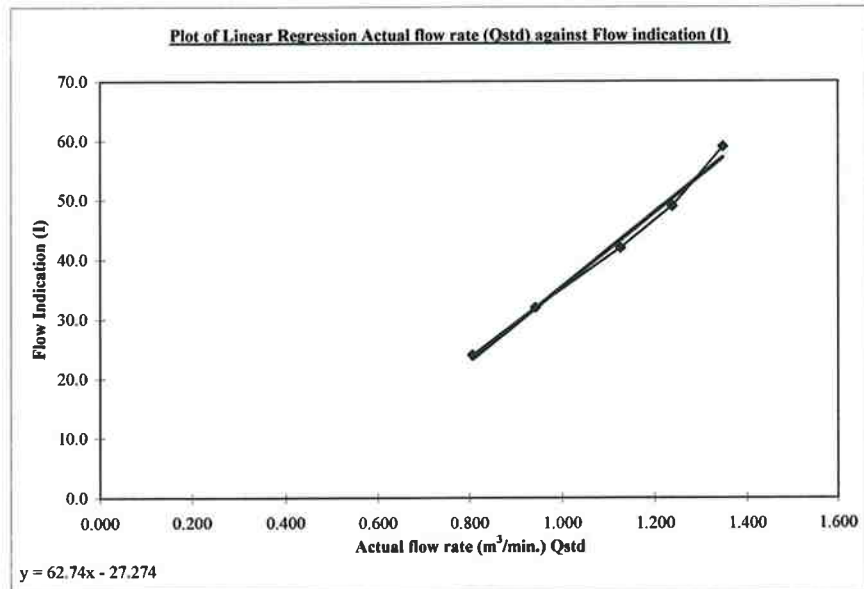
$$\text{Flow (corrected)} = \sqrt{H \times \frac{Pa}{Pstd} \times \frac{Tstd}{Ta}}$$

Standard pressure (mmHg) Pstd:	760.0
Standard temp. (K) Tstd:	297.18
Calibration pressure (mmHg) Pa:	755.5
Calibration temp. (K) Ta:	305.8

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

Sample no.	Pressure Drop (H), inch	Flow (corrected), m ³ /min	Actual flow rate (Qstd), m ³ /min	Flow indication (I), arbitrary
1	7.6	2.713	1.346	58.0
2	6.4	2.490	1.236	49.0
3	5.3	2.266	1.126	42.0
4	3.7	1.893	0.942	32.0
5	2.7	1.617	0.806	24.0


Correlation Coefficient : 0.9952



Remark
 Qstd Range 0.6 - 1.7
 1HPa = 0.750062 mmHg

Calibrated by: Hui Chun Ming
 ()

Date: 7-7-08

Checked by: Hiu Yeung Tang
 ()

Date: 7.7-08



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE.
 VILLAGE OF CLEVELAND, OH 45002
 513.467.9000
 877.263.7610 TOLL FREE
 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

$$Vstd = \text{Diff. Vol} [(Pa - \text{Diff. Hg}) / 760] (298 / Ta)$$

$$Qstd = Vstd / \text{Time}$$

$$Va = \text{Diff Vol} [(Pa - \text{Diff Hg}) / Pa]$$

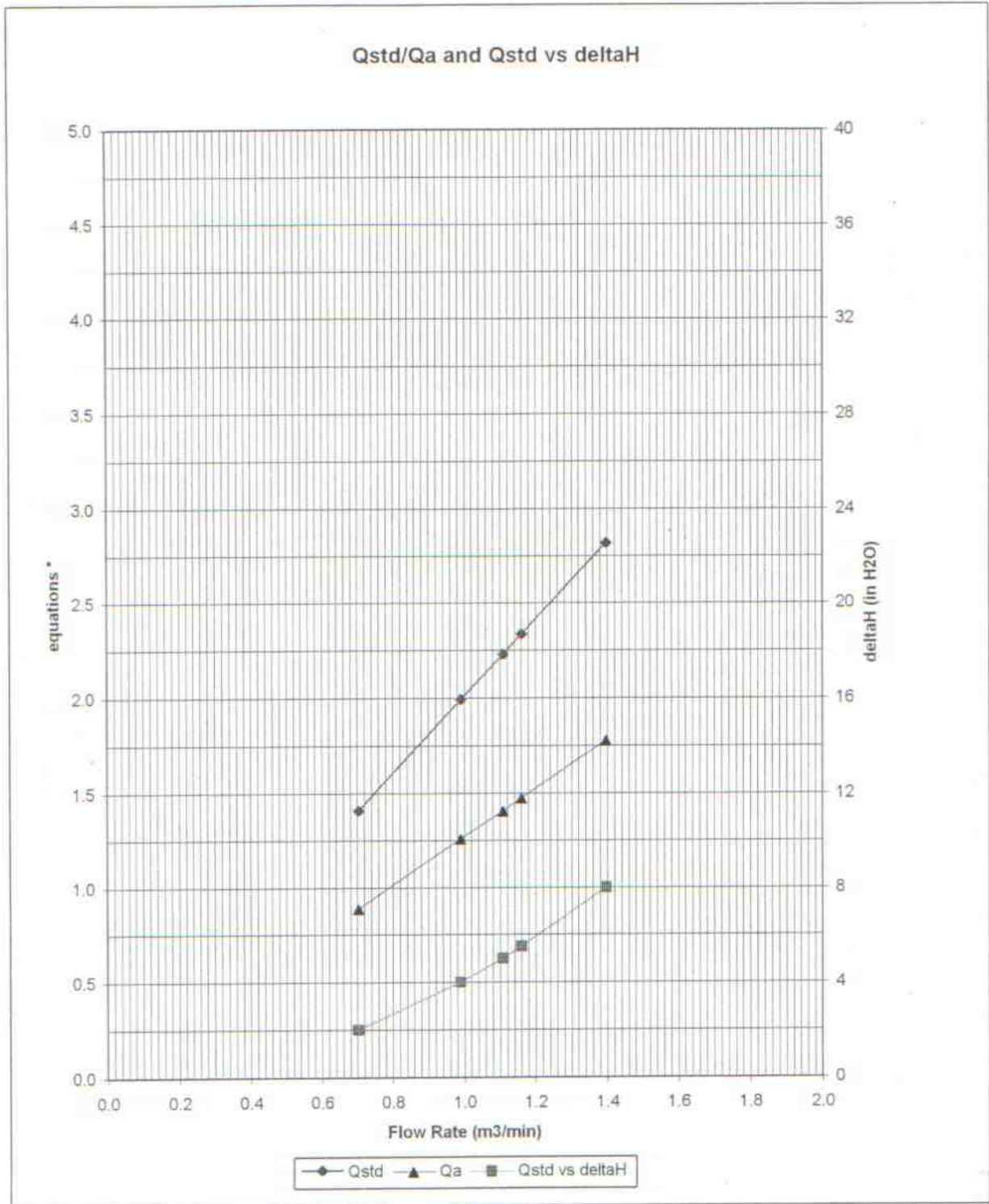
$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

$$Qstd = 1/m \{ [\text{SQRT}(\text{H2O}(\text{Pa}/760)(298/\text{Ta}))] - b \}$$

$$Qa = 1/m \{ [\text{SQRT}(\text{H2O}(\text{Ta}/\text{Pa}))] - b \}$$

AIR POLLUTION MONITORING EQUIPMENT



* y-axis equations:

Qstd series:
$$\sqrt{\Delta H \left(\frac{P_a}{P_{std}} \right) \left(\frac{T_{std}}{T_a} \right)}$$

Qa series:
$$\sqrt{(\Delta H (T_a / P_a))}$$

#517N



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

Ambient Temperature : $(23 \pm 3)^{\circ}\text{C}$

Supply Voltage : --

Relative Humidity : $(50 \pm 25) \%$

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).

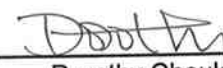
Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
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



Calibration Certificate

Certificate No. **83175**

Page 1 of 4 Pages

Customer : Hyder Consulting Limited

Address : 47/F., Hopewell Centre, 183 Queens Road East, Wanchai, Hong Kong

Order No. : Q81258

Date of receipt : 9-Jul-08

Item Tested

Description : Digital Sound Level Meter

Manufacturer : B&K

Model : Type 2236

Serial No. : 1774423

Test Conditions

Date of Test : 9-Jul-08

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:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C081456	18-Mar-09	SCL-HKSAR
S024	Sound Level Calibrator	71791	16-Jul-08	NIM-PRC & SCL-HKSAR
S031	6½ dgt. Multimeter	76189	28-Dec-08	NIM-PRC

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 : 

Alan Chu

Date: 10-Jul-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. **83175**

Page 1 of 4 Pages

Customer : Hyder Consulting Limited

Address : 47/F., Hopewell Centre, 183 Queens Road East, Wanchai, Hong Kong

Order No. : Q81258

Date of receipt : 9-Jul-08

Item Tested

Description : Digital Sound Level Meter

Manufacturer : B&K

Model : Type 2236

Serial No. : 1774423

Test Conditions

Date of Test : 9-Jul-08

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:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
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S024	Sound Level Calibrator	71791	16-Jul-08	NIM-PRC & SCL-HKSAR
S031	6½ dgt. Multimeter	76189	28-Dec-08	NIM-PRC

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 : 

Alan Chu

Date: 10-Jul-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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Appendix 8

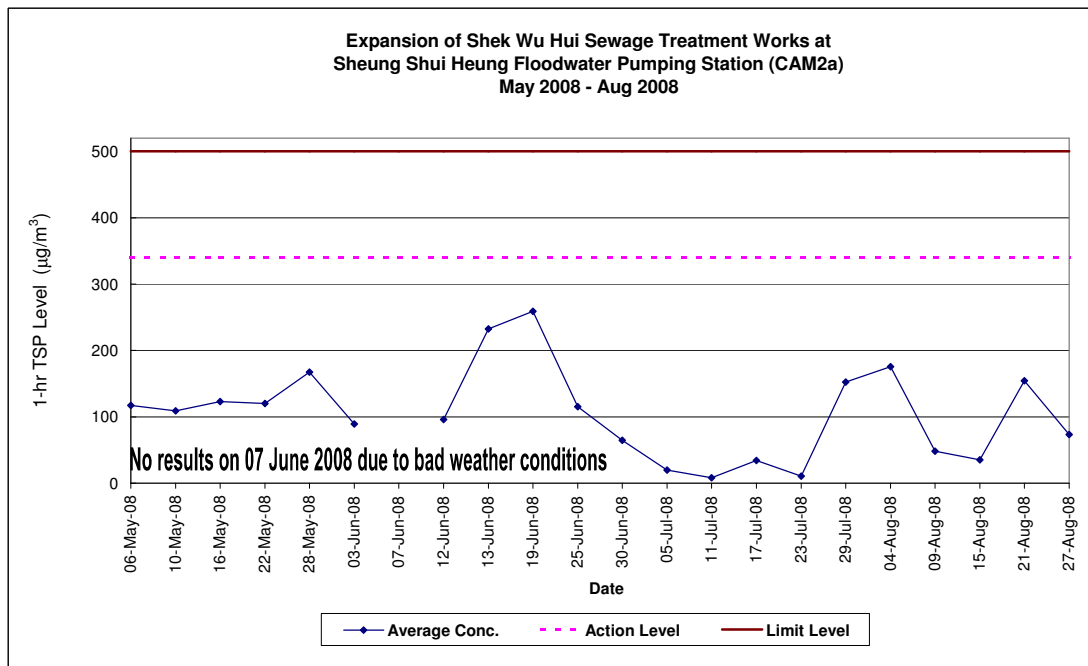
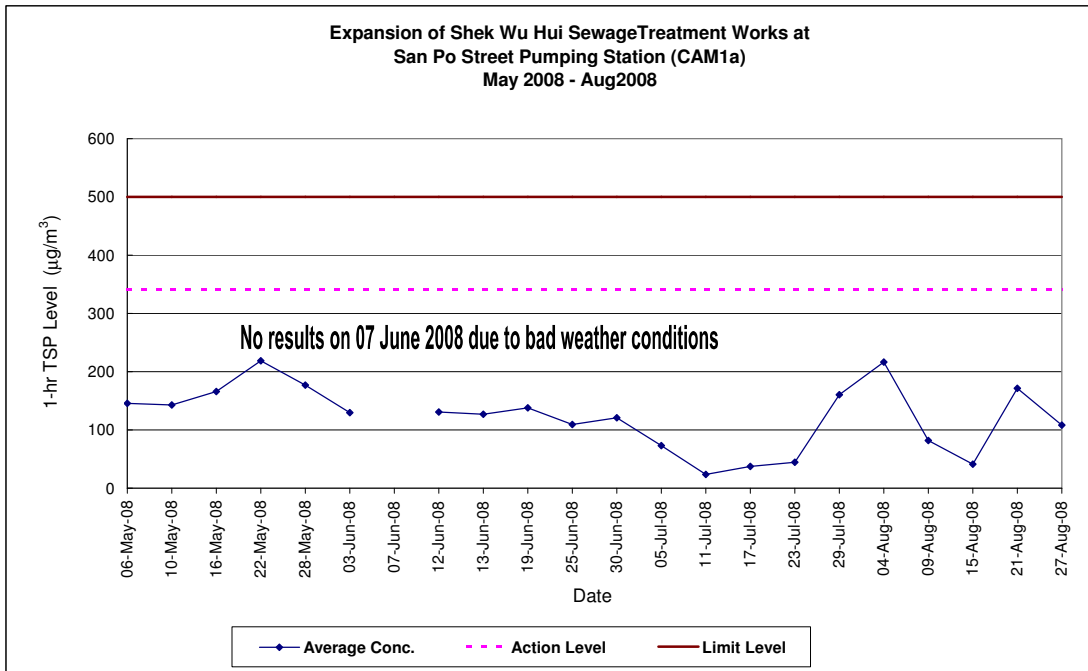
Monitoring Results and Graphical Plots

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 (m³/min)	Flow-F (m³/min)	Flow-avg (m³/min)	Volume (m³)	Weight-I (g)	Weight-F (g)	Weight-diff. (g)	1-hr TSP (ug/m³)	Average 1-Hr TSP (ug/m³)	Action/Limit Levels (ug/m³)	Remark
San Po Street Pumping Station CAM1a	04-Aug-08	Sunny	0.3E	32	660507	660599	55.2	40	40	1.07	1.07	1.07	59.19	2.7357	2.7476	0.0119	201.1	216.4	342.7/500	
		Sunny	0.3E	32	660599	660699	60.0	40	40	1.07	1.07	1.07	64.34	2.7709	2.7873	0.0164	254.9			
		Sunny	0.3E	32	660699	660802	61.8	40	40	1.07	1.07	1.07	66.27	2.7768	2.7896	0.0128	193.2			
	09-Aug-08	Fine	0.3E	29	663157	663252	57.0	40	40	1.07	1.07	1.07	61.12	2.8322	2.8368	0.0046	75.3	81.7		
		Fine	0.3E	29	663252	663353	60.6	41	41	1.09	1.09	1.09	65.95	2.7582	2.7640	0.0058	88.0			
		Fine	0.3E	29	663353	663456	61.8	41	41	1.09	1.09	1.09	67.25	2.8440	2.8495	0.0055	81.8			
	15-Aug-08	Sunny	0.5 SE	32	665867	665962	57.0	40	40	1.07	1.07	1.07	61.12	2.8397	2.8424	0.0027	44.2	41.4		
		Sunny	0.5 SE	32	665962	666060	58.8	41	41	1.09	1.09	1.09	63.99	2.8995	2.8620	0.0025	39.1			
		Sunny	0.5 SE	32	666060	666161	60.6	41	41	1.09	1.09	1.09	65.95	2.8561	2.8586	0.0027	40.9			
	21-Aug-08	Fine	0.5 SE	30	673348	673450	61.2	40	40	1.07	1.07	1.07	65.62	2.7500	2.7587	0.0087	132.6	171.4		
		Fine	0.5 SE	30	673450	673551	60.6	41	41	1.09	1.09	1.09	65.95	2.7445	2.7552	0.0107	162.3			
		Fine	0.5 SE	30	673551	673653	61.2	41	41	1.09	1.09	1.09	66.60	2.7342	2.7488	0.0146	219.2			
27-Aug-08	Sunny	0.5SE	33	676082	676181	59.4	41	41	1.09	1.09	1.09	64.64	2.7360	2.7423	0.0063	97.5	108.1			
	Sunny	0.5SE	33	676181	676283	61.2	40	40	1.07	1.07	1.07	65.62	2.7337	2.7379	0.0042	64.0				
	Sunny	0.5SE	33	676283	676386	61.8	40	40	1.07	1.07	1.07	66.27	2.7457	2.7565	0.0108	163.0				
Sheung Shui Heung Floodwater Pumping Station CAM2a	04-Aug-08	Sunny	0.4E	32	773929	773921	55.2	40	40	1.02	1.02	1.02	56.25	2.8549	2.8624	0.0075	133.3	175.8	340.2/500	
		Sunny	0.4E	32	773921	774027	63.6	40	40	1.02	1.02	1.02	64.81	2.7519	2.7657	0.0138	212.9			
		Sunny	0.4E	32	774027	774130	61.8	40	40	1.02	1.02	1.02	62.98	2.7758	2.7872	0.0114	181.0			
	09-Aug-08	Fine	0.3E	29	776479	776575	57.6	37	37	1.02	1.02	1.02	59.01	2.8236	2.8267	0.0031	52.5	48.0		
		Fine	0.3E	29	776575	776676	60.6	38	37	1.04	1.02	1.03	62.56	2.7920	2.7955	0.0035	55.9			
		Fine	0.3E	29	776676	776776	60.0	38	38	1.04	1.04	1.03	61.86	2.8320	2.8342	0.0022	35.6			
	15-Aug-08	Sunny	0.5 SE	32	779197	779292	57.0	41	41	1.03	1.03	1.03	58.76	2.8412	2.8434	0.0022	37.4	35.4		
		Sunny	0.5 SE	32	779292	779393	60.6	41	41	1.03	1.03	1.03	62.47	2.8591	2.8616	0.0025	40.0			
		Sunny	0.5 SE	32	779393	779490	58.2	40	40	1.02	1.02	1.02	59.31	2.8310	2.8327	0.0017	28.7			
	21-Aug-08	Fine	0.7 SE	30	781911	782014	61.8	39	39	1.01	1.01	1.01	62.25	2.7360	2.7438	0.0078	125.3	154.5		
		Fine	0.7 SE	30	782014	782117	61.8	38	38	1.00	1.00	1.00	61.51	2.7345	2.7428	0.0083	134.9			
		Fine	0.7 SE	30	782117	782220	61.8	38	38	1.00	1.00	1.00	61.51	2.7512	2.7637	0.0125	203.2			
27-Aug-08	Sunny	0.7SE	33	784658	784757	59.4	38	38	1.00	1.00	1.00	59.13	2.7500	2.7533	0.0033	35.8	73.2			
	Sunny	0.7SE	33	784757	784855	58.8	37	37	0.98	0.98	0.98	57.63	2.7260	2.7300	0.0040	69.2				
	Sunny	0.7SE	33	784855	784957	61.2	37	37	0.98	0.98	0.98	60.19	2.7449	2.7506	0.0057	94.7				

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

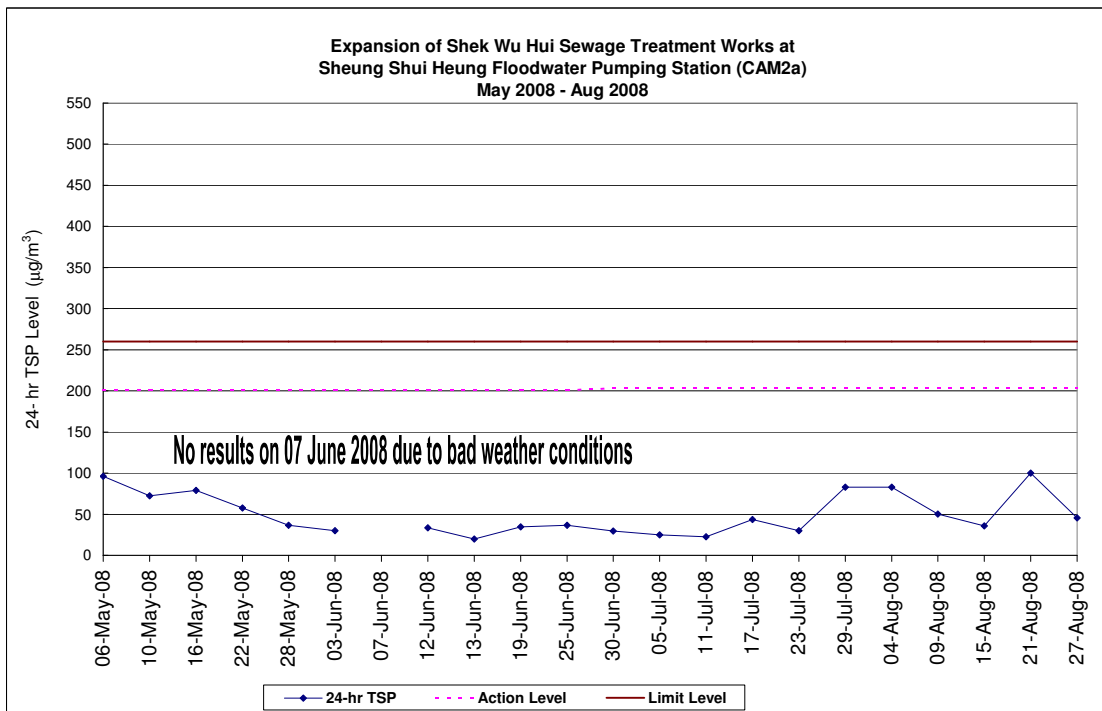
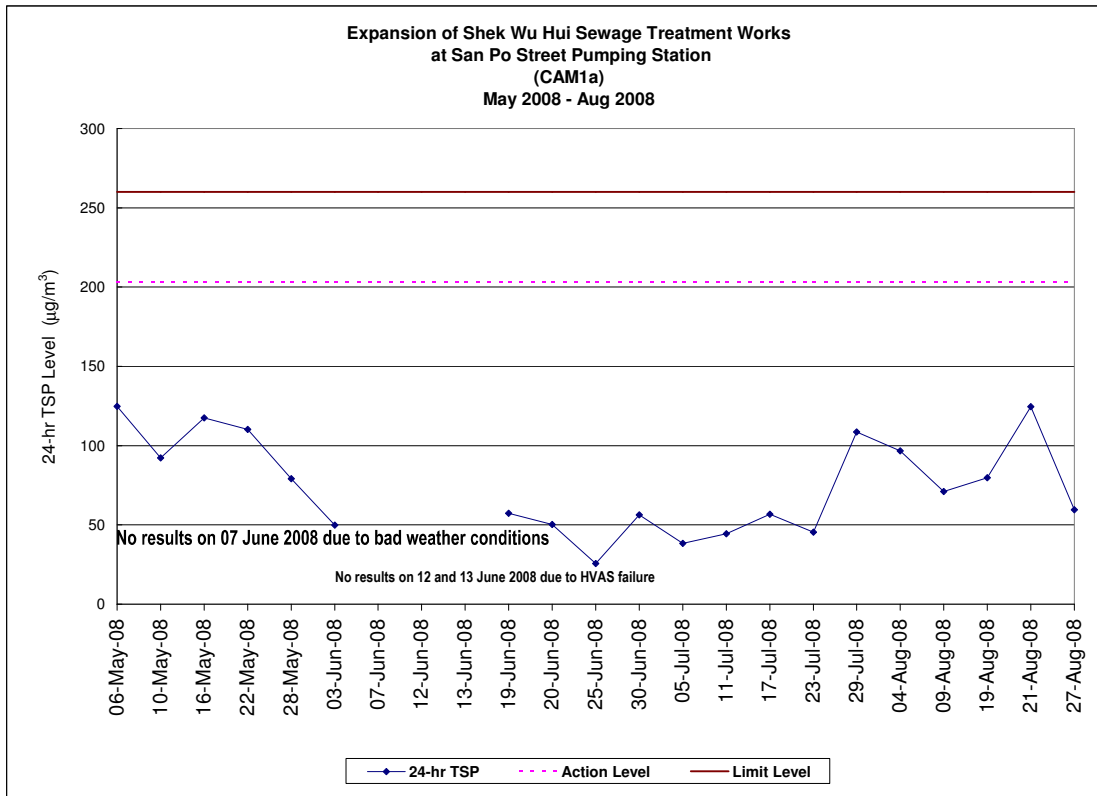


Expansion of Shek Wu Hui Sewage Treatment Works

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 (m³/min)	Flow-F (m³/min)	Flow-avg (m³/min)	Volume (m³)	Weight-I (g)	Weight-f (g)	Weight-diff. (g)	24-hr TSP (ug/m³)	Action/Limit Levels (ug/m³)	Remark
San Po Street Pumping Station CAM1a	04-Aug-08	Sunny	0.3E	32	753.0	660802	663157	1413	41	41	1.09	1.09	1.09	1537.63	2.7609	2.9107	0.1498	97.4	203.3/260	
	09-Aug-08	Fine	0.5E	29	752.6	663456	665867	1446.6	41	41	1.09	1.09	1.09	1574.20	2.8187	2.9330	0.1143	72.6		
	15-Aug-08	Sunny	0.5SE	32	752.6	666161	670933	2863.2	40	40	1.07	1.07	1.07	3070.11	2.8393	2.9786	0.1393	45.4		
	19-Aug-08	Sunny	0.6SE	33	757.5	670933	673348	1449	40	40	1.07	1.07	1.07	1553.71	2.7633	2.8872	0.1239	79.7		
	21-Aug-08	Sunny	0.5SE	30	752.3	673653	676082	1457.4	40	40	1.07	1.07	1.07	1562.72	2.7276	2.9222	0.1946	124.5		
	27-Aug-08	Sunny	0.5SE	33	757.3	676386	678769	1429.8	41	40	1.09	1.07	1.08	1544.52	2.7698	2.8619	0.0921	59.6		
Sheung Shui Heung Floodwater Pumping Station CAM2a	04-Aug-08	Sunny	0.4E	32	753.0	774130	776479	1409.4	40	41	1.02	1.03	1.03	1444.65	2.7748	2.8955	0.1207	83.5	201.6/260	
	09-Aug-08	Fine	0.6E	29	752.6	776776	779197	1452.6	38	38	1.00	1.00	1.00	1445.88	2.7791	2.8541	0.0750	51.9		
	15-Aug-08	Sunny	0.8SE	32	753.3	779490	781911	1452.6	41	41	1.03	1.03	1.03	1497.54	2.7947	2.8481	0.0534	35.7		
	21-Aug-08	Sunny	0.7SE	30	752.3	782220	784658	1462.8	39	39	1.01	1.01	1.01	1473.38	2.7309	2.8786	0.1477	100.2		
	27-Aug-08	Sunny	0.7SE	33	757.3	784957	787346	1433.4	38	38	1.00	1.00	1.00	1426.77	2.7372	2.8024	0.0652	45.7		

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

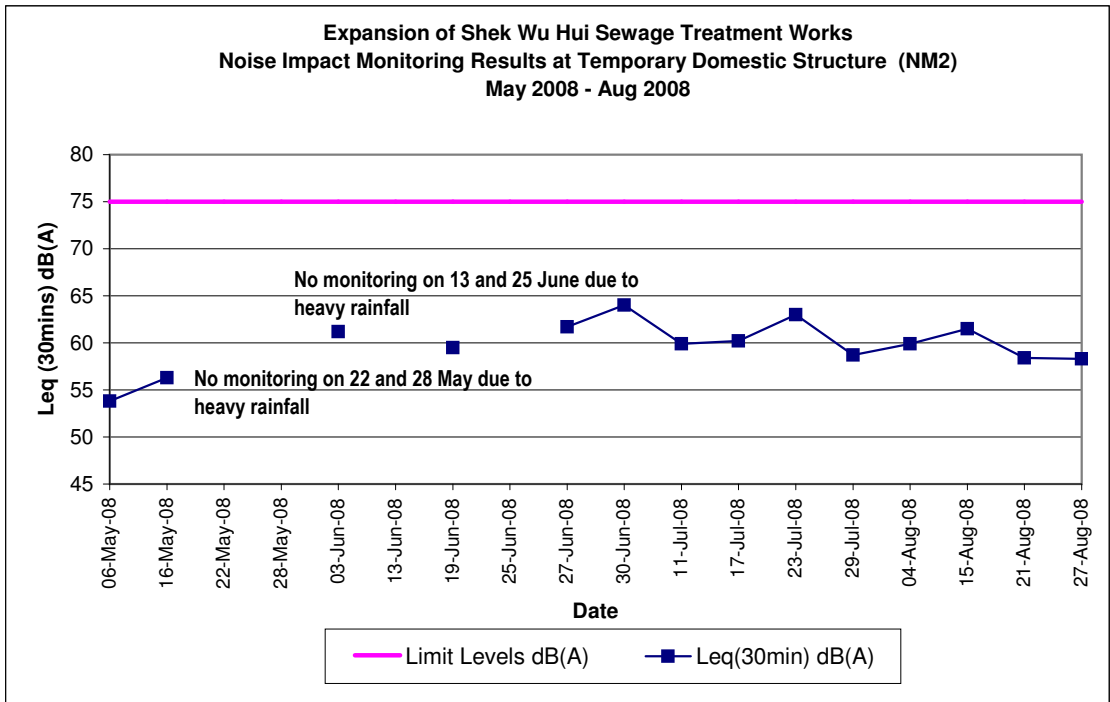
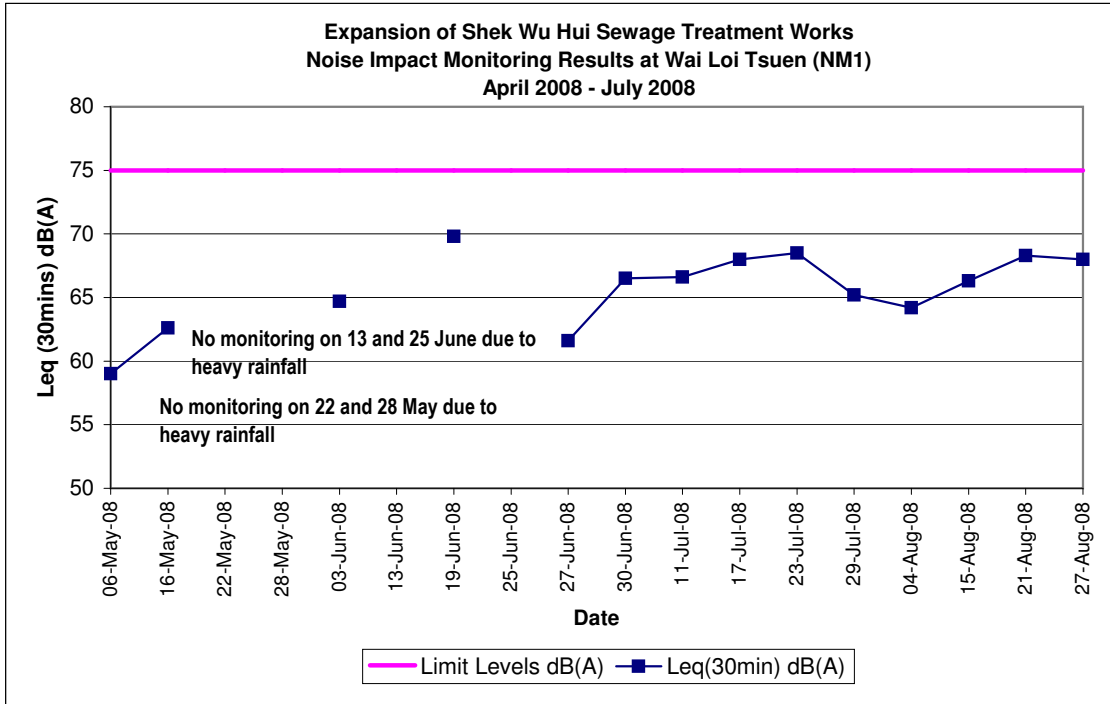


Expansion of Shek Wu Hui Sewage Treatment Works

Noise Impact Monitoring Results

Monitoring Locations	Date	Weather Conditions	Temperature	Wind Speed	Wind	Start Time	End Time	Limit Levels dB(A)	L _{eq(30min)}	L _{10(30min)}	L _{90(30min)}	Remark
			(°C)	(m/s)	Direction				dB(A)	dB(A)	dB(A)	
Wai Loi Tsuen NM1	04-Aug-08	Sunny	32	0.3	E	10:25	11:55	75	64.2	65.8	62.2	
	15-Aug-08	Sunny	32	0.5	SE	9:35	10:05	75	66.3	67.8	63.3	
	21-Aug-08	Fine	30	0.5	SE	9:15	9:45	75	68.3	70.9	66.2	
	27-Aug-08	Sunny	33	0.5	SE	9:50	10:20	75	68.0	70.6	65.9	
Temporary Domestic Structure NM2	04-Aug-08	Sunny	32	0.4	E	14:40	15:10	75	59.9	62.0	57.4	
	15-Aug-08	Sunny	32	0.5	SE	10:35	11:05	75	61.5	64.0	59.3	
	21-Aug-08	Fine	30	0.7	SE	10:15	10:45	75	58.4	60.7	56.2	
	27-Aug-08	Sunny	33	0.7	SE	10:45	11:15	75	58.3	60.9	56.0	

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



Appendix 9

QA/QC Results and Detection Limit

Date of issue : 08-AUG-2008

Page Number : 3 of 3
Client : HYDER CONSULTING LTD
Work Order : HK0812431



Laboratory Duplicate (DUP) Report

- No Laboratory Duplicate (DUP) Results are required to be reported.

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: AIR

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 725956)											
HK-TSP: Total Suspended Particulates	****	0.0010	g	<0.0010	****	****	****	****	****	****	****
HK-TSP: Initial Weight	****	0.0010	g	2.7552	****	****	****	****	****	****	****
HK-TSP: Final Weight	****	0.0010	g	2.7551	****	****	****	****	****	****	****

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

Date of issue : 13-AUG-2008

Page Number : 3 of 3
Client : HYDER CONSULTING LTD
Work Order : HK0812711



Laboratory Duplicate (DUP) Report

- No Laboratory Duplicate (DUP) Results are required to be reported.

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: AIR		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number					LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 729605)											
HK-TSP: Total Suspended Particulates	****	0.0010	g	<0.0010	****	****	****	****	****	****	****
HK-TSP: Initial Weight	****	0.0010	g	2.7556	****	****	****	****	****	****	****
HK-TSP: Final Weight	****	0.0010	g	2.7556	****	****	****	****	****	****	****

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

Date of issue : 20-AUG-2008

Page Number : 3 of 3
Client : HYDER CONSULTING LTD
Work Order : HK0813109



Laboratory Duplicate (DUP) Report

- No Laboratory Duplicate (DUP) Results are required to be reported.

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: AIR		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 735437)											
HK-TSP: Total Suspended Particulates	****	0.0010	g	<0.0010	****	****	****	****	****	****	****
HK-TSP: Initial Weight	****	0.0010	g	2.7558	****	****	****	****	****	****	****
HK-TSP: Final Weight	****	0.0010	g	2.7552	****	****	****	****	****	****	****

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

Date of issue : 27-AUG-2008

Page Number : 3 of 3
 Client : HYDER CONSULTING LTD
 Work Order : HK0813485



Laboratory Duplicate (DUP) Report

- No Laboratory Duplicate (DUP) Results are required to be reported.

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: AIR		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 741524)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7552	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7547	----	----	----	----	----	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 741525)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7552	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7547	----	----	----	----	----	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

Date of issue : 01-SEP-2008

Page Number : 3 of 3
 Client : HYDER CONSULTING LTD
 Work Order : HK0813780



Laboratory Duplicate (DUP) Report

- No Laboratory Duplicate (DUP) Results are required to be reported.

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: AIR		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 744307)											
HK-TSP: Total Suspended Particulates	----	0.0010	g	<0.0010	----	----	----	----	----	----	----
HK-TSP: Initial Weight	----	0.0010	g	2.7547	----	----	----	----	----	----	----
HK-TSP: Final Weight	----	0.0010	g	2.7549	----	----	----	----	----	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

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
August 2008	0	0	0	0	0	0	0	0 (Last in February 2008)

Cumulative Number of Environmental Complaint

Appendix 11

Upcoming EM&A Schedule

Expansion of Shek Wu Hui Sewage Treatment Works

Impact Monitoring Programme – August 2008

Date		Air		Noise	Site Inspection
		1-hr TSP	24-hr TSP		
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

Expansion of Shek Wu Hui Sewage Treatment Works
Impact Monitoring Programme – October 2008 (Tentative)

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

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 – November 2008 (Tentative)

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