# Civil Engineering & Development Department NT EAST Development Office

# Contract No. ST 89/02

# **Sha Tin Heights Tunnel and Approaches**

Monthly EM&A Report (Version 1.0)

February 2007

Certified By

(Environmental Tearn Leader)

REMARKS:

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

CINOTECH accepts no responsibility for changes made to this report by third parties.

#### CINOTECH CONSULTANTS LTD

Room 1602-1610, Delta House, 3 On Yiu Street, Shatin, NT, Hong Kong Tel: (852) 2151 2083 Fax: (852) 3107 1388

Email: info@cinotech.com.hk

# TABLE OF CONTENTS

EX	KECUTIVE SUMMARY	1
	Introduction	1 3
1.	INTRODUCTION	
1.		
	Background Project Organizations	
	Construction Programme	
	Summary of EM&A Requirements	
2.	AIR QUALITY	7
	Monitoring Requirements	7
	Monitoring Locations	
	Monitoring Equipments	
	Monitoring Parameters, Frequency and Duration	
	Monitoring Methodology and QA/QC Procedure	
_	Results and Observations	
3.	NOISE	11
	Monitoring Requirements	
	Monitoring Locations	
	Monitoring Equipment	
	Monitoring Methodology and QA/QC Procedures	
	Maintenance and Calibration	
	Results and Observations	
4.	ENVIRONMENTAL AUDIT	13
	Site Audits	13
	Review of Environmental Monitoring Procedures	13
	Status of Environmental Licenses and Permits	
	Status of Waste Management.	
	Implementation Status of Environmental Mitigation Measures  Implementation Status of Event Action Plans	
	Summary of Complaints and Prosecutions	
5.	FUTURE KEY ISSUES	
٥.		
	Key Issues for the Coming Month	
	Construction Program for the Next Month	
6.	CONCLUSIONS AND RECOMMENDATIONS	
	Conclusions	
	Recommendations	

# LIST OF TABLES

Table I	Summary Table for Non-compliance Recorded in the Reporting Month
Table 1.1	Key Project Contacts
Table 2.1	Locations for Air Quality Monitoring
Table 2.2	Air Quality Monitoring Equipment
Table 2.3	Impact Dust Monitoring Parameters, Frequency and Duration
Table 3.1	Noise Monitoring Stations
Table 3.2	Noise Monitoring Equipment
Table 3.3	Noise Monitoring Parameters, Frequency and Duration
Table 4.1	Summary of Environmental Licences and Permit Status

# LIST OF FIGURES

Figure 1	Site Layout Plan
Figure 2a	Location of Monitoring Stations (I)
Figure 2b	Location of Monitoring Stations (II)
Figure 3	Project Organization Chart

# LIST OF APPENDICES

A	Action and Limit Levels for Air Quality and Noise
В	Copies of Calibration Certificates
C	Environmental Monitoring Schedules
D	1-hour TSP Monitoring Results and Graphical Presentations
E	24-hour TSP Monitoring Results and Graphical Presentations
F	Wind Data
G	Noise Monitoring Results and Graphical Presentations
Н	Summary of Exceedances
I	Site Audit Summary
J	Summary of Amount of Waste Generated
K	Environmental Mitigation Implementation Schedule (EMIS)
L	Event Action Plans
M	Construction Programme
N	Complaint Log

## ABBREVIATION AND ACRONYM

AL Levels Action and Limit Levels

CEDD Civil Engineering & Development Department

E / ER Engineer/Engineer's Representative

EIA Environmental Impact Assessment

EM&A Environmental Monitoring and Audit

EMIS Environmental Mitigation Implementation Schedule

EP Environmental Permit

EPD Environmental Protection Department

ET Environmental Team

HVS High Volume Sampler

IEC Independent Environmental Checker

RE Resident Engineer

RH Relative Humidity

TSP Total Suspended Particulates

QA/QC Quality Assurance / Quality Control

SLM Sound Level Meter

WMP Waste Management Plan

#### **EXECUTIVE SUMMARY**

#### Introduction

- 1. This is the 52<sup>nd</sup> monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the project "Sha Tin Heights Tunnel & Approaches" (the Project). This report documents the findings of EM&A Works conducted in February 2007.
- 2. The construction activities undertaken in the reporting month included:
  - Drainage works;
  - Construction of Inspection Opening for Box Culvert;
  - Water works:
  - Erection of Sign Gantry and Directional Sign;
  - Rising Existing Manhole Level;
  - Lining Installation for 1050mm diameter Sewer under Retaining Wall no.5;
  - Sealing up existing Manholes and Pipes;
  - Erection of Steel Frame / Noise Barrier:
  - Installation of Noise Barrier Post and Panel over KCRC Railway;
  - Installation of Lighting under Bridge N2/S2;
  - Tunnel/Portal Building./RCFE VE cladding installation;
  - Erection of Sign Gantry and Directional Sign;
  - Application of Colour Treatment to RCFE and RE Wall;
  - Removal of Temporary Access Road TAR 1;
  - Construction of Flexible Road Pavement;
  - Construction of retaining wall AR/E/01; and
  - Slope upgrading works F437, F438, F478.

#### **Environmental Monitoring Works**

- 3. Environmental monitoring for the Project was performed regularly as stipulated in the EM&A Manuals and the results were checked and reviewed. Site audits were conducted once per week. The implementations of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
- 4. Summary of the non-compliance of the reporting month is tabulated Table I.

Table I Summary Table for Non-compliance Records in the Reporting Month

Media / Nature	No. of Exceedance		/ Nature No. of Exceedance No. of Exceedance due to the Project		
	<b>Action Level</b>	Limit Level	<b>Action Level</b>	Limit Level	
1-hr TSP	0	0	0	0	
24-hr TSP	0	0	0	0	
Noise	0	0	0	0	

Air Quality

# 1-hour TSP Monitoring

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

# 24-hour TSP Monitoring

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

#### Construction Noise

7. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded in the reporting month.

Environmental Licenses and Permits

8. License/Permits granted to the Project include the Environmental Permit (EP), Construction Noise Permits (CNP), Waste Disposal (Chemical Waste) License, and Wastewater Discharge License.

#### **Complaints and Prosecutions**

- 9. No environmental complaint was received during the reporting month.
- 10. No environmental prosecution was received during the reporting month.

# **Future Key Issues**

- 11. Drainage works, tree felling and transplant, water works, erection of Sign Gantry and Directional Sign, erection of steel frame / noise barrier, installation of noise barrier post and panel over KCRC Railway, tunnel/portal building /RCFE VE cladding installation, drainage work, erection of sign gantry and directional sign, construction of flexible road pavement, construction of retaining wall and slope upgrading works will be the major construction activities for the coming months.
- 12. The anticipated environmental issues will be mainly dust impact and construction noise nuisance during the slope works and parapet construction.

#### 1. INTRODUCTION

#### **Background**

- 1.1 Sha Tin Heights Tunnel and Approaches (SHT) (hereinafter the Project) forms part of the Route 8 (Formerly Route 9) between Cheung Sha Wan and Sha Tin project, which will be a new expressway connecting west Kowloon and Sha Tin. It will be the fourth external link between Sha Tin and Kowloon and will form an important link between the northeast New Territories and the west Kowloon, Lantau Island and the western New Territories. The Project, the entrusted portion of the Route 8 (Formerly Route 9) project, is being managed and implemented by Civil Engineering & Development Department (CEDD).
- 1.2 The Project works mainly comprise the site formation for a toll plaza at the valley of Sha Tin Heights, the construction of 1 km long dual three-lane tunnels under Sha Tin Heights, a 0.6 km long dual two-lane tunnel approach road in Tai Wai, two slip road viaducts with approximately total length of 1 km connecting to Che Kung Miu Road, associated noise barriers and noise enclosures, drainage, slope works and landscape works. The remainder of the Route 8 (Formerly Route 9) (Main Portion, R9K) project forms the Kowloon Section and is being managed and implemented separately by Highways Department.
- 1.3 The Route 8 (Formerly Route 9) (between Cheung Sha Wan and Sha Tin) project is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449, EIAO). An environmental impact assessment (EIA) report had been prepared in 1998 for the Route 8 (Formerly Route 9) project to consider the key issues of noise, air quality, water quality, ecological, construction waste, landscape and visual, land use and culture impacts, and identify possible mitigation measures. An updated Final EIA report was subsequently completed in August 1999 to cater for some changes in the main portion. The 1998 and 1999 Route 8 (Formerly Route 9) EIA (R9 EIA Reports) reports were included in the EIA register under the EIAO as report number EIA-135/BC and AEIAR-022/1999 respectively. EM&A Manuals for each of the R9 EIA reports were also included as part of the EIA reports in the register.
- 1.4 Subsequent to the endorsement of the R9 EIA reports by EPD in November 1999, the R9 project was deferred to start in 2002/2003 for completion by 2006/07. The implementation of the Route 8 (Formerly Route 9) project was then separated into the SHT and R9K portions. Meanwhile further design amendments had also been proposed for the R9S during the detailed design stage to resolve various engineering constraints. In view of these changes, an Environmental Review on the SHT was undertaken to update the findings of the R9 EIA reports. The Environmental Review report for SHT was completed in September 2001 and an Environmental Permit No. EP-104/2001 was issued on 4<sup>th</sup> October 2001 for the Project.
- 1.5 The works of the SHT is constructed under CEDD's construction Contract No. ST 89/02 "Sha Tin Heights Tunnel and Approaches". The site layout of the Project is shown in Figure 1. The Project works were commenced on 18<sup>th</sup> November 2002.

1.6 Cinotech Consultants Limited (Cinotech) was commissioned by CEDD to undertake the Environmental Team (ET) Services for the Project. This is the 52<sup>nd</sup> monthly EM&A report summarizing the EM&A works for the Project in February 2007.

#### **Project Organizations**

- 1.7 Different parties with different levels of involvement in the project organization include:
  - Project Proponent CEDD, NT East Development Office
  - Engineer or Engineer's Representative (E/ER) Maunsell Consultants Asia Limited (MCAL)
  - Environmental Team (ET) Cinotech Consultants Limited
  - Independent Environmental Checker (IEC) CH2M HILL Hong Kong Limited
  - Contractor China State-China Railway Joint Venture
- 1.8 The responsibilities of respective parties are detailed in Section 2 of the EM&A Manual (1998) and Section 1.8 of the EM&A Manual (1999). The project organization chart is presented in Figure 3.
- 1.9 The key contacts of the Project are shown in Table 1.1.

**Table 1.1 Key Project Contacts** 

Party	Name	Role	Phone No.	Fax No.	
CEDD	Ms. Joanna Kwok	Permit Holder	2301 1383	2739 0076	
CEDD	Mr. Robert Choy	Project Coordinator	2301 1373	2721 8630	
	Mr. Francis Leong	The Engineer	2685 6517	2691 2649	
MCAL	Mr. K.Y. Chan	Engineer's Depresentative	9750 0557	2697 4106	
	Mr. S. K. Lo  Engineer's Representative	9751 9638	2697 4106		
	Dr. Priscilla Choy	ET Leader	2151 2089	3107 1388	
ET	Mr. Stanley Liu	Audit Team Leader	2151 2095		
	Mr. Henry Leung Monitoring	Monitoring Team Leader	2151 2087		
IEC	Mr. David Yeung	Independent Environmental Checker	2507 2203	2507 2293	
Contractor Mr. David Lau Senior Project Manager		2601 7917	2697 1592		
24-hour Hotline 9759 9852 -					

# **Construction Programme**

- 1.10 The construction activities undertaken in the reporting month included:
  - Drainage works;
  - Construction of Inspection Opening for Box Culvert;
  - Water works:
  - Erection of Sign Gantry and Directional Sign;
  - Rising Existing Manhole Level;
  - Lining Installation for 1050mm diameter Sewer under Retaining Wall no.5;
  - Sealing up existing Manholes and Pipes;
  - Erection of Steel Frame / Noise Barrier:
  - Installation of Noise Barrier Post and Panel over KCRC Railway;
  - Installation of Lighting under Bridge N2/S2;
  - Tunnel/Portal Building./RCFE VE cladding installation;
  - Erection of Sign Gantry and Directional Sign;
  - Application of Colour Treatment to RCFE and RE Wall;
  - Removal of Temporary Access Road TAR 1;
  - Construction of Flexible Road Pavement;
  - Construction of retaining wall AR/E/01; and
  - Slope upgrading works F437, F438, F478.

# **Summary of EM&A Requirements**

- 1.11 The EM&A programme requires construction phase monitoring for air quality and noise and environmental site audit. The EM&A requirements for each parameter are described in following sections, including:
  - All monitoring parameters;
  - Action and Limit levels for all environmental parameters;
  - Event / Action Plans;
  - Environmental mitigation measures, as recommended in the project EIA study final report; and
  - Environmental requirements in the contract documents.
- 1.12 The advices on the implementation status of environmental protection and pollution control/mitigation measures are summarized in Section 4 of this report.
- 1.13 This report presents the monitoring results, observations, locations, equipments, periods, methodologies and QA/QC procedures of the required monitoring parameters, namely dust and noise levels and audit works for the Project in February 2007.

#### 2. AIR QUALITY

#### **Monitoring Requirements**

2.1 Measurement of 1-hour and 24-hour TSP were conducted to monitor the air quality. Appendix A shows the established Action/Limit Levels for the captioned environmental monitoring works.

# **Monitoring Locations**

2.2 Three designated monitoring stations, A2, A3 and A4 were selected for impact dust monitoring. Table 2.1 describes the air quality monitoring locations, which are also depicted in Figures 2a and 2b.

**Table 2.1** Locations for Air Quality Monitoring

Monitoring Stations Description	
A2	Lau Pak Lok Secondary School
A3	Shatin Heights
A4	Slope no. 07SW-D/FR4 beside Garden Villa

# **Monitoring Equipments**

2.3 Table 2.2 summarizes the equipments used in the impact air monitoring programme. Copies of calibration certificates are attached in Appendix B.

Table 2.2 Air Quality Monitoring Equipment

Equipments	Models and Makes	Quantit y
Calibrator	G25A; S/N: 1536	1
1-hour TSP Dust Meter	Laser Dust Monitor – Model LD3	3
HVS Sampler	GMWS 2310 c/w of TSP sampling inlet	3

# **Monitoring Parameters, Frequency and Duration**

2.4 Table 2.3 summarizes the monitoring parameters and frequencies of impact dust monitoring for the whole construction period. The air quality monitoring schedule for the reporting month is shown in Appendix C.

Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration

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

#### Monitoring Methodology and QA/QC Procedure

1-hour TSP Monitoring

#### Measuring Procedures

- 2.5 The measuring procedures of the 1-hour dust meters were in accordance with the Manufacturer's Instruction Manual as follow:
  - Pull up the air sampling inlet cover
  - Change the Mode 0 to BG with once
  - Push Start/Stop switch once
  - Turn the knob to SENSI.ADJ and press it
  - Push Start/Stop switch once
  - Return the knob to the position MEASURE slowly
  - Push the timer set switch to set measuring time
  - Remove the cap and make a measurement

#### Maintenance/Calibration

- 2.6 The following maintenance/calibration was required for the direct dust meters:
  - Check the meter at 3-month intervals and calibrate the meter at 1-year intervals throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

#### Instrumentation

2.7 High volume (HVS) samplers (Model GMWS-2310 Accu-Vol) completed with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in section 2.3 of the EM&A Manuals.

#### Operating/Analytical Procedures

- 2.8 Operating/analytical procedures for the operation of HVS were as follows:
  - A horizontal platform was provided with appropriate support to secure the samplers against gusty wind.
  - No two samplers were placed less than 2 meters apart.
  - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
  - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
  - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
  - No furnaces or incineration flues were nearby.
  - Airflow around the sampler was unrestricted.
  - The sampler was more than 20 meters from the drip line.
  - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
- 2.9 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 2.10 For TSP sampling, fiberglass filters (G810) were used [Note: these filters have a collection efficiency of > 99% for particles of 0.3 mm diameter].
- 2.11 The power supply was checked to ensure the sampler worked properly.
- 2.12 On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.13 The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- 2.14 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 2.15 The shelter lid was closed and secured with the aluminum strip.
- 2.16 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 2.17 After sampling, the filter was removed and sent to the laboratory for weighing. The elapsed time was also recorded.

2.18 Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than  $\pm 3$ °C; the relative humidity (RH) should be < 50% and not vary by more than  $\pm 5$ %. A convenient working RH is 40%.

#### Maintenance/Calibration

- 2.19 The following maintenance/calibration was required for the HVS:
  - The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
  - High volume samplers were calibrated at bi-monthly intervals using GMW-25 Calibration Kit throughout all stages of the air quality monitoring.

#### **Results and Observations**

- 2.20 All 1-hour TSP monitoring was conducted as scheduled in the reporting month.
- 2.21 All 24-hour TSP monitoring was conducted as scheduled in the reporting month.
- 2.22 No Action/Limit Level exceedance for both 1-hour TSP and 24-hour TSP monitoring was recorded in the reporting month.
- 2.23 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in Appendices D and E, respectively.
- 2.24 Wind data monitoring equipment has been installed in monitoring Station A3 for logging wind speed and wind direction. Wind data for the reporting month is summarized in Appendix F.

#### 3. NOISE

#### **Monitoring Requirements**

3.1 Noise monitoring was conducted in accordance with the EM&A Manuals. Appendix A shows the established Action/Limit Levels for the environmental monitoring works.

#### **Monitoring Locations**

3.2 Noise monitoring was conducted at four designated monitoring stations, namely N5, N6, N7 and N8, as summarized in Table 3.1. Figures 2a and 2b show the locations of these stations.

**Table 3.1 Noise Monitoring Stations** 

Monitoring Stations	Description	
N5	At the podium level of Garden Villa	
N6	On the roofing of Shatin Heights	
N7	On the roofing of Lau Pak Lok Secondary School	
N8	At the ground level of 187 Tin Sam Tsuen	

# **Monitoring Equipment**

3.3 Table 3.2 summarizes the noise monitoring equipment model being used. Copies of calibration certificates are attached in Appendix B.

Table 3.2 Noise Monitoring Equipment

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	B&K Model 2238	5
Calibrator	B&K 4231	3
Wind Speed Anemometer	Vane Anemometer, Model 451104	1

# **Monitoring Parameters, Frequency and Duration**

3.4 Table 3.3 summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in Appendix C.

 Table 3.3
 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameters	Period	Frequency	Measurement
N5	I (20 min )dD(A)	0700-1900		Façade
N6	$\begin{array}{c} L_{10}(30 \text{ min.}) dB(A) \\ L_{90}(30 \text{ min.}) dB(A) \\ L_{eq}(30 \text{ min.}) dB(A) \end{array}$	hrs. on weekdays	Once per week	Façade
N7				Façade
N8		weekdays		Façade

# Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

frequency weighting : Atime weighting : Fast

- time measurement :  $L_{eq (30 \text{ min})}$  for daytime noise monitoring /

3 consecutive L<sub>eq (5 min)</sub> for restricted hour noise

monitoring

- Prior to and after each noise measurement, the meter was calibrated using a
  Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before
  and after measurement was more than 1.0 dB, the measurement would be
  considered invalid and repeat of noise measurement would be required after recalibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the  $L_{eq}$ ,  $L_{90}$  and  $L_{10}$  were recorded. In addition, site conditions and noise sources were recorded on a record sheet.
- Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

#### **Maintenance and Calibration**

- 3.5 The microphone head of the sound level meter and calibrator was cleaned with soft cloth regularly.
- 3.6 The meters were sent to the supplier to check and calibrate on yearly intervals.

#### **Results and Observations**

- 3.7 Noise monitoring was performed as scheduled in the reporting month. Results and graphical presentations are shown in Appendix G.
- 3.8 No Action/Limit Level exceedance was recorded in the reporting month.
- The major noise source at Stations N5 and N6 during night time was identified as road traffic noise from Tai Po Road. From the Baseline Monitoring Report, the maximum and minimum of noise monitoring results during 2300-0700 were 67.1 dB and 50.6 dB for N5 and 68.9 dB and 52.4 dB for N6 respectively, which were higher than the limits stipulated in the EM&A Manual. Therefore, the maximum measured noise level during the Baseline Monitoring period was set as the limit levels at Stations N5 and N6 during 2300-0700 on normal weekdays.

#### 4. ENVIRONMENTAL AUDIT

#### **Site Audits**

- 4.1 Site audits were carried out on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project site.
- 4.2 Site audits were conducted on 1<sup>st</sup>, 8<sup>th</sup>, 15<sup>th</sup> and 22<sup>nd</sup> February 2007. The observation summary of site audit sessions is attached in Appendix I.

#### **Review of Environmental Monitoring Procedures**

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

# Air Quality Monitoring

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

# Noise Monitoring

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

# **Status of Environmental Licenses and Permits**

4.4 All permits/licenses obtained are summarized in Table 4.1.

Table 4.1 Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Section	Status
rerinit No.	From	To	Section	Status
<b>Environmental Pe</b>	ermit			
EP-104/2001/B	16/02/05	N/A	Site formation, drainage, geotechnical and landscape works for the toll plaza. Construction of the Sha Tin Heights Tunnels, the Sha Tin Approach Roads and the Slip Road Connecting to Che Kung Miu Road including all formation, structure, road, geotechnical, drainage and landscape work. Construction of the structure of the portal buildings of the Sha Tin Heights Tunnel and noise mitigation measures.	Valid

Permit No.	Valid Period		Section	C404va	
refillt No.	From	To	Section	Status	
<b>Construction Nois</b>	Construction Noise Permit				
GW-RN0438-06	29/8/06	28/2/07	Installation of cladding over the bridge during general holiday including Sundays between 0700 hrs and 2300 hrs and any day not being a holiday including Sundays between 1900 hrs and 2300 hrs.		
Wastewater Discharge License					
3024	16/6/03	15/6/08	Wastewater discharge at the site office in Sha Tin Heights.	Valid	
2984	21/8/03	20/8/08			
Waste Disposal (Chemical Waste)					
WPN: 5213-754-C3250-01	N/A	N/A	Disposal of chemical waste such as waste lubricating oil and diesel oil arising from construction work.	Valid	

#### **Status of Waste Management**

4.5 The amount of wastes generated by the activities of the Project in February 2007 is provided in Appendix J.

#### **Implementation Status of Environmental Mitigation Measures**

- 4.6 According to the Environmental Permit and the EM&A Manuals, the mitigation measures detailed in the documents are required to be implemented. An updated summary of the EMIS is presented in Appendix K.
- 4.7 During site inspections in the month, the following observations and recommendations were made. All the observations were improved and rectified on the next audit day.

Water Quality

4.8 No environmental deficiencies were identified during the site environmental inspections.

Air Quality

4.9 No environmental deficiencies were identified during the site environmental inspections.

Noise

4.10 No environmental deficiencies were identified during the site environmental inspections.

#### Waste / Chemical Management

- 4.11 A drum of diesel oil without cover provided was observed at Garden Villa. The Contractor was reminded to provide a cover for the drum which should be stored in a sealed drip tray.
- 4.12 Some construction wastes were spread on bare ground at Abatement 1 enclosure. The contractor was reminded to clean it up.

Permits / Licenses

4.13 No environmental deficiencies were identified during the site environmental inspections.

#### **Implementation Status of Event Action Plans**

- 4.14 The Event Action Plans for air quality and noise are presented in Appendix L.
- 4.15 The Exceedance Summary in the reporting month is presented in the Appendix H.

# Air Quality

4.16 No Action/Limit Level exceedance for both 1-hour TSP and 24-hour TSP was recorded in the reporting month.

#### Noise

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

#### **Summary of Complaints and Prosecutions**

- 4.18 No environmental complaint was received in the reporting month.
- 4.19 No environmental prosecution was received in the reporting month.

# 5. FUTURE KEY ISSUES

## **Key Issues for the Coming Month**

- 5.1 Key issues to be considered in the coming month include:
  - Dust and noise nuisances from slope works and parapet construction.

# **Monitoring Schedule for the Next Month**

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

# **Construction Program for the Next Month**

5.3 The tentative construction program for the Project is provided in Appendix M.

#### 6. CONCLUSIONS AND RECOMMENDATIONS

#### **Conclusions**

6.1 Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.

# **Environmental Monitoring**

- 6.2 No Action/Limit Level exceedance was recorded for both 1-hour TSP and 24-hour TSP of dust monitoring in the reporting month.
- 6.3 No Action/Limit Level exceedance was recorded for noise monitoring in the reporting month.

#### Complaint and Prosecution

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

#### Recommendations

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

# **Dust Impact**

- To ensure the dust mitigation measures, such as water spray, are fully implemented during the rock breaking works.
- To cover or water stockpiles of dusty materials on site.

## Noise Impact

- To space out noisy equipment and position as far away as possible from sensitive receivers.
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers.

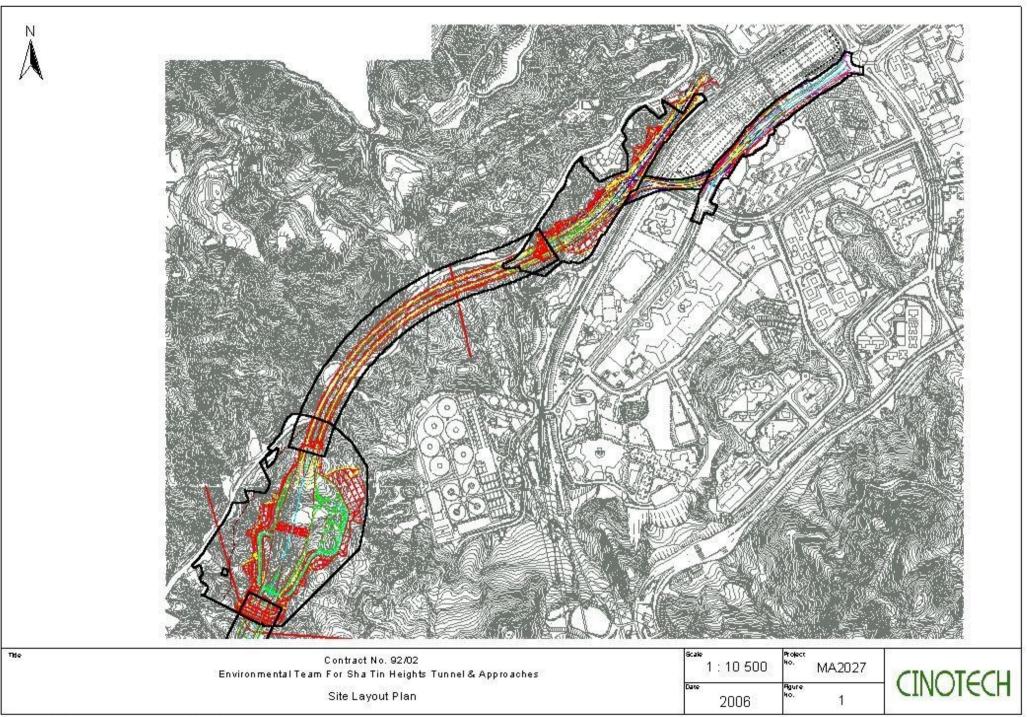
#### Water Quality Impact

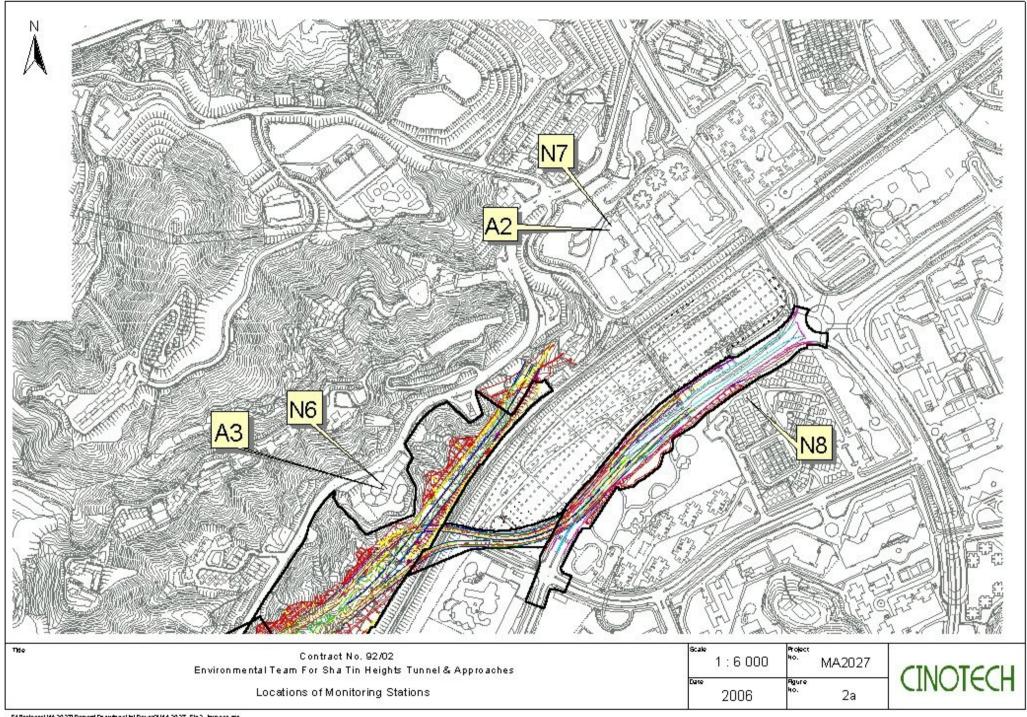
- To regularly maintain the condition of u-channel, catch pits and wheel washing facilities within construction site.
- To regularly maintain the wastewater treatment facilities and ensure the proper.
- To regularly clean the AquaSed as maintain in good working condition.

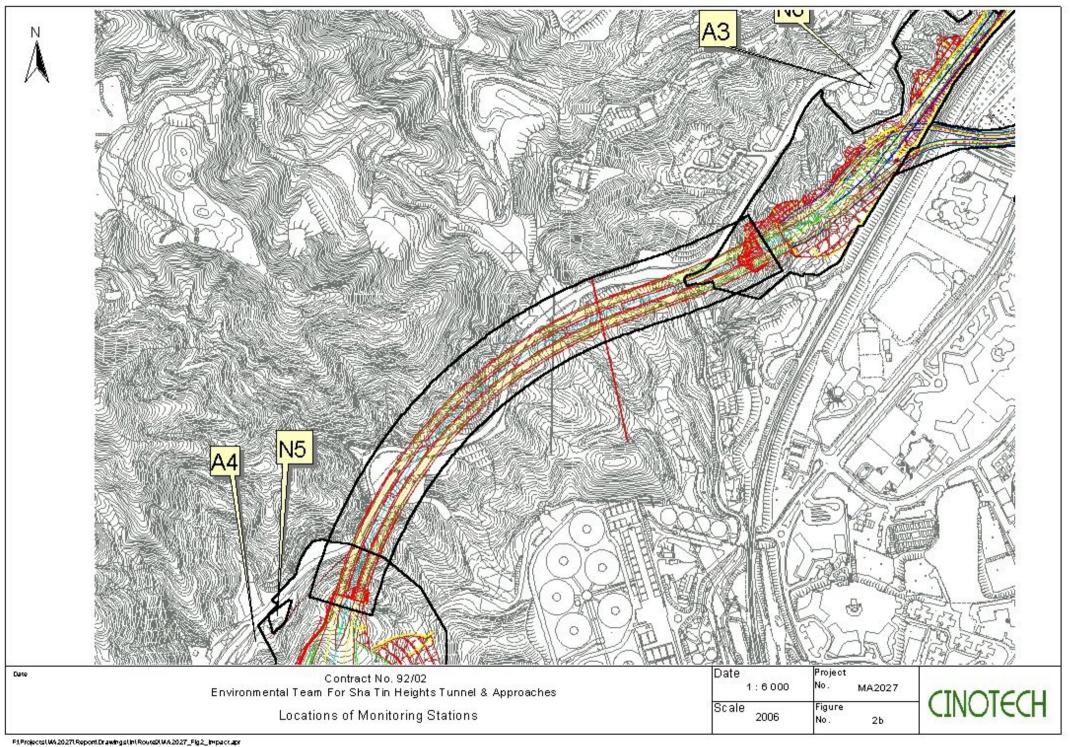
# Waste/Chemical Management

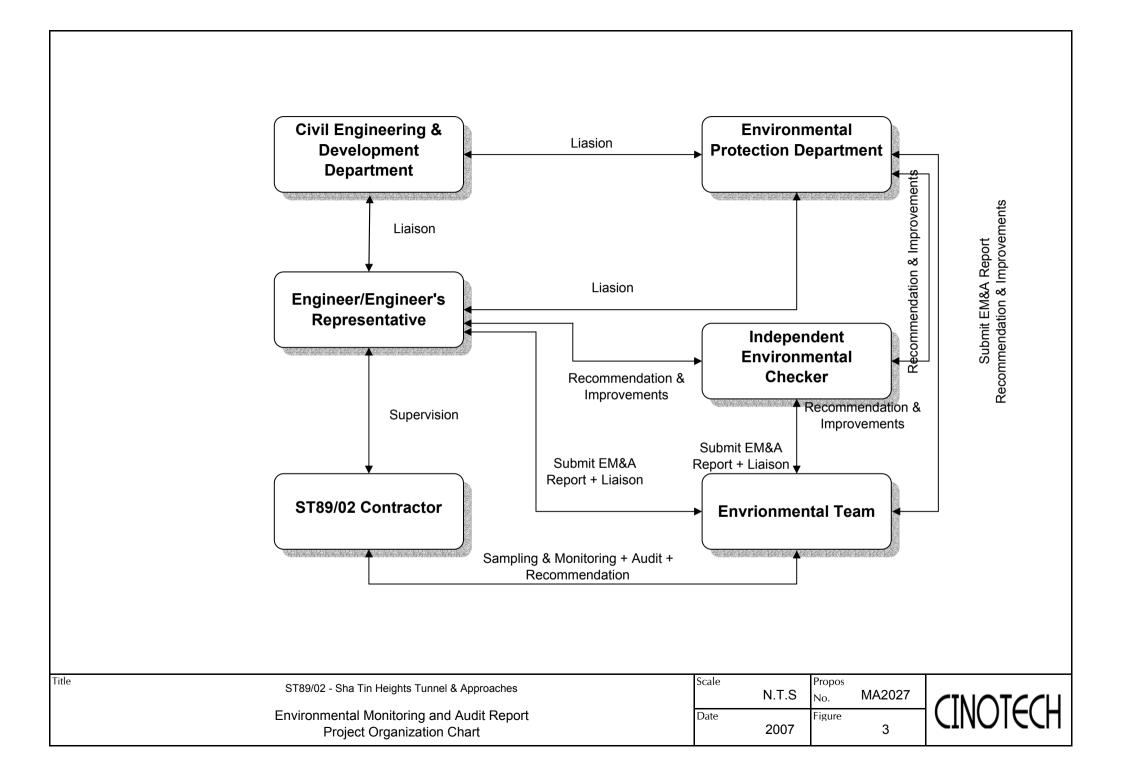
- To check for any accumulation of waste materials or rubbish on construction site.
- To avoid any directly discharge of chemical waste or oil from the site.

# **FIGURES**









APPENDIX A
ACTION AND LIMIT LEVELS
FOR AIR QUALITY AND NOISE

# **Appendix A - Action and Limit Levels**

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

Location	Action Level, μg/m <sup>3</sup>	Limit Level, μg/m <sup>3</sup>
A2		
A3	350	500
A4		

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

Location	Action Level, μg/m <sup>3</sup>	Limit Level, μg/m <sup>3</sup>
A2	186	
A3	200	260
A4	200	

Table A-3 Action and Limit Level for Construction Noise

Action	n Level	Limit Level
0700-1900 hrs on normal weekdays		75* dB(A)
0700-2300 hrs on holidays & 1900- 2300 hrs on all other days	One or more complaint(s) received in one week	60/65/70** dB(A)
2300-0700 hrs of next day		45/50/55** dB(A)

<sup>(\*)</sup> reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

<sup>(\*\*)</sup> to be selected based on Area Sensitivity Rating. If Specified Powered Mechanical Equipment (SPME) is employed, the noise limits should be 15 dB(A) less than that shown above for the restricted hours.

# APPENDIX B COPIES OF CALIBRATION CERTIFICATES

# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



Station	Lau Pak Lok Se	condary Schoo	ol (A2)	Operator:	WK	File No. MA2027/05/0028	
_	22-Jan-07				21-Mar-	07	
quipment No.: A-01-05		-		10599			
			Ambient C	ondition			
Temperatur	e, Ta (K)	288.1	Pressure, Pa	(mmHg)		768.5	
Y ME TOHA		0	e Toric	1. 17.6			
Equipme	nt No :	A-04-04	Slope, mc	0.0575	Intercept	, bc 0.0395	
Last Calibra		13-Mar-06			$= [\Delta H \times (Pa/760)]$		
Next Calibra		12-Mar-07			$(Pa/760) \times (298/T)$		
TOXI Callore	ition Date.	12-10141-07		std ([ZII X	(1 at 700) X (290/1	a)j -bc}/ mc	
			Calibration of	TSP Sampler			
Calibration		(	rfice		HVS		
Point	ΔH (orifice), in. of water	[ΔH x (Pa/	760) x (298/Ta)] <sup>1/2</sup>	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1}$ <b>Y-axis</b>	
1	11.6	3.48		59.89	8.9	3.05	
2	8.9		3.05	52.37	6.9	2.69	
3	7.4		2.78	47.70	5.3	2.35	
4	5.1		2.31	39.48	3.2	1.83	
5	3.3		1.86	31.62	1.9	1.41	
Slope, mw = Correlation c *If Correlation C	oefficient* =		).9985	-	-0.484	· <del>-</del>	
			Set Point C	Calculation			
From the TSP F	ield Calibration	Curve, take Ç	std = 43 CFM				
From the Regres	ssion Equation,	the "Y" value	according to				
		mw x	$\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W}]$	x (Pa/760) x (	298/Ta)] <sup>1/2</sup>		
m 2 5	. D. L						
Therefore, Set	Point; $W = (m)$	w x Qstd + bv	$(x)^2 \times (760 / Pa) \times$	(Ta / 298) =	4.1	2	
Remarks:							
Conducted by:		Signature:	- In	(a)	_	Date: 22 Jan	
Checked by	: It	Signature:				Date: 22 January Date: 32 January	
			1/				

# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET



File No. MA2027/13/0027 WK Operator: Shatin Heights Station Next Due Date: 21-Mar-07 22-Jan-07 Date: Serial No. A-01-13 Equipment No.: **Ambient Condition** 768.5 Pressure, Pa (mmHg) 288.1 Temperature, Ta (K) Orifice Transfer Standard Information 0.0395 Intercept, bc 0.0575 Slope, mc A-04-04 Equipment No.: mc x Qstd + bc =  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ 13-Mar-06 Qstd =  $\{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc \} / mc$ Last Calibration Date: 12-Mar-07 Next Calibration Date: Calibration of TSP Sampler HVS Orfice  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2} Y$  $\Delta W$ Calibration Ostd (CFM)  $\Delta H$  (orifice), [ $\Delta H \times (Pa/760) \times (298/Ta)$ ]<sup>1/2</sup> axis (HVS), in. of oil Point X - axis in. of water 3.12 9.3 62.45 3.63 12.6 1 2.82 7.6 56.40 3.28 10.3 2.48 5.9 49.30 2.87 7.9 3 1.83 3.2 39.87 2.33 5.2 4 1.37 1.8 33.06 1.94 3.6 By Linear Regression of Y on X Intercept, bw =\_\_\_\_ -0.5592 Slope, mw = 0.0598Correlation coefficient\* = \*If Correlation Coefficient < 0.990, check and recalibrate. Set Point Calculation From the TSP Field Calibration Curve, take Qstd = 43 CFM From the Regression Equation, the "Y" value according to mw x Qstd + bw =  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Therefore, Set Point;  $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ Remarks: Conducted by: W.K. Tong Signature: Signature:

# High-Volume TSP Sampler 5-POINT CALIBRATION DATA SHEET

# CINOTECH

File No. MA2027/A14/0021 Garden Vilia Station Operator: WK 1-Feb-07 Next Due Date: 31-Mar-07 Date: Equipment No.: A-01-14 Serial No. 1354 **Ambient Condition** Temperature, Ta (K) 290.2 Pressure, Pa (mmHg) Orifice Transfer Standard Information 0.0575 Intercept, be Equipment No.: A-04-04 Slope, mc 0.0395 mc x Qstd + bc =  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ Last Calibration Date: 13-Mar-06 Qstd =  $\{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc \} / mc$ Next Calibration Date: 12-Mar-07 Calibration of TSP Sampler Orfice HVS Calibration  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2} Y$  $\Delta H$  (orifice), Ostd (CFM)  $\Delta W$ Point  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ in. of water X - axis (HVS), in. of oil axis 12.5 1 3.61 62.10 9.3 3.11 2 10.8 8.2 3.36 57.68 2.92 7.1 5.3 3 2.72 46.64 2.35 2.33 39.81 3.2 1.83 5 3.1 1.80 30.58 2.1 1.48 By Linear Regression of Y on X Slope, mw = 0.0539 Intercept, bw : -0.2146 Correlation coefficient\* = \*If Correlation Coefficient < 0.990, check and recalibrate. Set Point Calculation From the TSP Field Calibration Curve, take Qstd = 43 CFM From the Regression Equation, the "Y" value according to mw x Qstd + bw =  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Therefore, Sct Point; W =  $(\text{mw x Qstd} + \text{bw})^2 \times (760 / \text{Pa}) \times (\text{Ta} / 298) =$ Remarks: Date: Date:

# WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

# **TEST REPORT**

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. 

 Test Report No.:
 C/061220/1A

 Date of Issue:
 2006-12-20

 Date Received:
 2006-12-19

 Date Tested:
 2006-12-20

 Date Completed:
 2006-12-20

 Next Due Date:
 2007-02-19

ATTN: Mr. Henry Leung Page: 1 of 1

#### **Certificate of Calibration**

#### Item for Calibration:

Description : Laser Dust Monitor

Manufacturer : Sibata

Model No. : LD-3

Serial No. : 251634

Sensitivity (K) 1 CPM : 0.001 mg/m³

Sen. Adjustment Scale Setting : 550 CPM

Equipment No. : A-02-01

**Test Conditions:** 

Room Temperature : 20 degree Celsius

Relative Humidity : 60%

#### **Test Specifications & Methodology:**

- 1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
- 2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

#### **Results:**

Correlation Factor (CF) 0.0040

\*

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Operation Manager

# WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

# **TEST REPORT**

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. 

 Test Report No.:
 C/070221/1A

 Date of Issue:
 2007-02-21

 Date Received:
 2007-02-16

 Date Tested:
 2007-02-16

 Date Completed:
 2007-02-21

 Next Due Date:
 2007-04-20

1 of 1

ATTN: Mr. Henry Leung Page:

#### **Certificate of Calibration**

#### Item for Calibration:

Description : Laser Dust Monitor

Manufacturer: SibataModel No.: LD-3Serial No.: 251634Sensitivity (K) 1 CPM: 0.001 mg/m³Sen. Adjustment Scale Setting: 550 CPM

Equipment No. : A-02-01

**Test Conditions:** 

Room Temperature : 20 degree Celsius

Relative Humidity : 65%

#### **Test Specifications & Methodology:**

- 1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
- 2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

#### Results:

Correlation Factor (CF)	0.0041

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Operation Manager

Patrick

# WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong. Tel: (852) 2898 7388

Fax: (852) 2898 7388

# **TEST REPORT**

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. 

 Test Report No.:
 C/061220/1B

 Date of Issue:
 2006-12-20

 Date Received:
 2006-12-19

 Date Tested:
 2006-12-20

 Date Completed:
 2006-12-20

 Next Due Date:
 2007-02-19

ATTN: Mr. Henry Leung Page: 1 of 1

# **Certificate of Calibration**

**Item for Calibration:** 

Description : Laser Dust Monitor

Manufacturer : Sibata

Model No. : LD-3

Serial No. : 281835

Sensitivity (K) 1 CPM : 0.001 mg/m³

Sen. Adjustment Scale Setting : 666 CPM

Equipment No. : A-02-02

**Test Conditions:** 

Room Temperature : 21 degree Celsius

Relative Humidity : 60%

#### **Test Specifications & Methodology:**

- 1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
- 2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

#### **Results:**

Correlation Factor (CF)	0.0039		

\*

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

**PATRICK TSE** 

Operation Manager

Patrick

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

## TEST REPORT

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. Test Report No.: C/070221/1B
Date of Issue: 2007-02-21
Date Received: 2007-02-16
Date Tested: 2007-02-16
Date Completed: 2007-02-21
Next Due Date: 2007-04-20

1 of 1

ATTN: Mr. Henry Leung Page:

### **Certificate of Calibration**

Item for Calibration:

Description : Laser Dust Monitor

Manufacturer : Sibata
Model No. : LD-3
Serial No. : 281835
Sensitivity (K) 1 CPM : 0.001 mg/m³

Sen. Adjustment Scale Setting : 666 CPM
Equipment No. : A-02-02

**Test Conditions:** 

Room Temperature : 20 degree Celsius

Relative Humidity : 65%

#### Test Specifications & Methodology:

- 1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
- 2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

#### Results:

Correlation Factor (CF)	0.0040

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Operation Manager

Patrick

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

## TEST REPORT

**Certificate of Calibration** 

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. Test Report No.: C/061220/1C
Date of Issue: 2006-12-20
Date Received: 2006-12-19
Date Tested: 2006-12-20
Date Completed: 2006-12-20
Next Due Date: 2007-02-19

1 of 1

ATTN: Mr. Henry Leung

Page:

#### **Item for Calibration:**

Description : Laser Dust Monitor

Manufacturer : Sibata

Model No. : LD-3B

Serial No. : 470582

Sensitivity (K) 1 CPM : 0.001 mg/m³

Sen. Adjustment Scale Setting : 855 CPM

Equipment No. : A-02-03

#### **Test Conditions:**

Room Temperature : 21 degree Celsius

Relative Humidity : 60%

## Test Specifications & Methodology:

- 1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
- 2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

#### Results:

Correlation Factor (CF)	0.0036
	*************

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Operation Manager

Patrick

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong. Tel: (852) 2898 7388

Fax: (852) 2898 7388

## TEST REPORT

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. Test Report No.: C/070221/1C

Date of Issue: 2007-02-21

Date Received: 2007-02-16

Date Tested: 2007-02-16

Date Completed: 2007-02-21

Next Due Date: 2007-04-20

1 of 1

ATTN: Mr. Henry Leung

### Certificate of Calibration

Page:

#### Item for Calibration:

Description : Laser Dust Monitor

Manufacturer : Sibata

Model No. : LD-3B

Serial No. : 470582

Sensitivity (K) 1 CPM : 0.001 mg/m³

Sen. Adjustment Scale Setting : 855 CPM

Equipment No. : A-02-03

**Test Conditions:** 

Room Temperature : 20 degree Celsius

Relative Humidity : 65%

## Test Specifications & Methodology:

- 1. Instruction and Operation Manual High Volume Sampler, Andersen Samplers, Inc.
- 2. In-house method in according to the instruction manual: The Laser Dust Monitor was compared with a calibrated High Volume Sampler and the result was used to generate the Correlation Factor (CF) between the Laser Dust Monitor and High Volume Sampler.

#### Results:

Correlation Factor (CF)	0.0037	

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Operation Manager

Patrick

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

## TEST REPORT

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. Test Report No.: C/06/60502
Date of Issue: 2006-05-02
Date Received: 2006-05-01
Date Tested: 2006-05-01

ATTN:

Mr. Henry Leung

Page:

Date Completed:

1 of 1

2006-05-02

#### **Certificate of Calibration**

#### Item for calibration:

Description

: RS232 Integral Vane Digital Anemometer

Manufacturer

: AZ Instrument

Model No.

: 451104

Serial No.

: 9020746

Equipment No.

: A-03-01

#### **Test conditions:**

Room Temperature

: 21 degree Celsius

Relative Humidity

: 66%

Pressure

: 1018.4 kPa

#### Methodology:

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

#### Results:

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

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Laboratory Manager



TISCH ENVIROMENTAL, INC.
145 SOUTH MIAMI ÄVE.
VILLAGE OF CLEVES, 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 - Ma Operator		Rootsmeter Orifice I.I		833620 0993	Ta (K) - Pa (mm) -	294 746.76
PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1 2 3 4 5	NA NA NA NA	NA NA NA NA NA	1.00 1.00 1.00 1.00	1.3890 0.9850 0.8810 0.8410 0.6950	3.2 6.3 7.8 8.6 12.5	2.00 4.00 5.00 5.50 8.00

#### DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9917 0.9876 0.9854 0.9844 0.9792	0.7139 1.0026 1.1185 1.1706 1.4090	1.4113 1.9959 2.2315 2.3405 2.8227		0.9957 0.9916 0.9894 0.9884 0.9832	0.7168 1.0067 1.1231 1.1753 1.4147	0.8874 1.2549 1.4030 1.4715 1.7747
Qstd slop intercept coefficie	(b) =	2.03154 -0.03970 0.99999		Qa slope intercept coefficie	t (b) =	1.27212 -0.02496 0.99999
y axis =	SQRT [H20 (I	?a/760)(298/:	[ [a)]	y axis =	SQRT [H2O (I	[a/Pa)]

#### CALCULATIONS

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

Va = Diff Vol [(Pa-Diff Hg)/Pa]

Qa = Va/Time

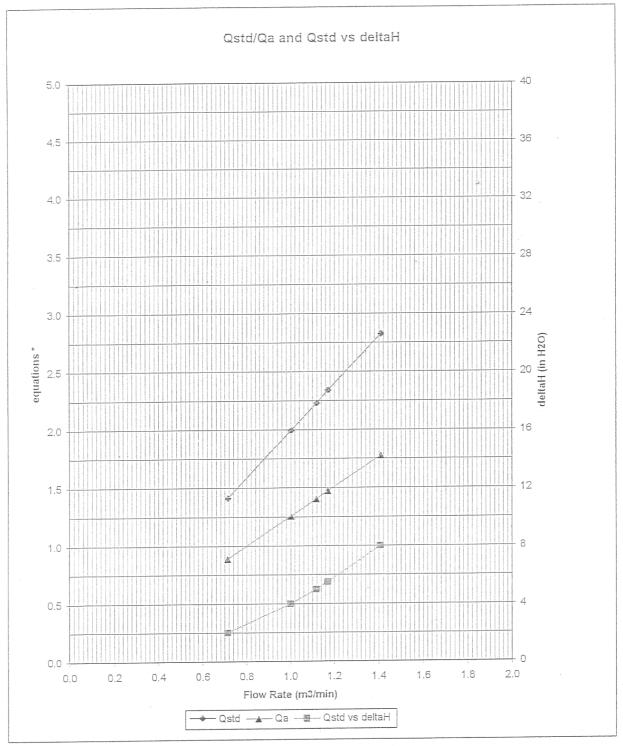
For subsequent flow rate calculations:

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



TISCH ENVIROMENTAL, INC. 145 SOUTH MIAMI AVE. VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX WWW.TISCH-ENV.COM

#### AIR POLLUTION MONITORING EQUIPMENT



\* y-axis equations:

Qstd series:

$$\sqrt{\Delta \ H \ \left( \frac{P \ a}{P \ s \ t \ d} \right) \left( \frac{T \ s \ t \ d}{T \ a} \right)}$$

Qa series:

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

#0993

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

## TEST REPORT

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. Test Report No.: C/N/61215/1
Date of Issue: 2006-12-15
Date Received: 2006-12-14
Date Tested: 2006-12-15
Date Completed: 2006-12-15
Next Due Date: 2007-12-14

ATTN: Mr. Henry Leung Page: 1 of 1

## **Certificate of Calibration**

#### Item for calibration:

Description : Integrating Sound Level Meter

Manufacturer : Brüel & Kjær Model No. : B&K 2238 Serial No. : 2337665 Microphone No. : 2289749 Equipment No. : N-01-01

#### **Test conditions:**

Room Temperatre : 20 degree Celsius

Relative Humidity : 60%

#### **Test Specifications:**

Performance checking at 94 and 114 dB

### Methodology:

In-house method, according to manufacturer instruction manual

#### **Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE
Operation Manager

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

## **TEST REPORT**

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. Test Report No.: C/N/61116/1
Date of Issue: 2006-11-16
Date Received: 2006-11-15
Date Tested: 2006-11-15
Date Completed: 2006-11-16
Next Due Date: 2007-11-15

ATTN:

Mr. Henry Leung

Page:

1 of 1

### Certificate of Calibration

#### Item for calibration:

Description ·

: Integrating Sound Level Meter

Manufacturer Model No.

: Brüel & Kjær : B&K 2238

Serial No.

: 2337666 : 2289750

Microphone No. Equipment No.

: N-01-02

#### Test conditions:

Room Temperatre

: 20 degree Celsius

Relative Humidity

: 59%

### **Test Specifications:**

Performance checking at 94 and 114 dB

#### Methodology:

In-house method, according to manufacturer instruction manual

### Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

### **TEST REPORT**

APPLICANT:

**Cinotech Consultants Limited** 

1601-1610 Delta House,

3 On Yiu Street, Shatin, N.T. Test Report No.: C/N/60904-1

Date of Issue: 2006-09-04 Date Received: 2006-09-02

Date Tested: 2006-09-02
Date Completed: 2006-09-04

Next Due Date: 2007-09-03

ATTN:

Mr. Henry Leung

Page:

1 of 1

### **Certificate of Calibration**

#### Item for calibration:

Description

: Integrating Sound Level Meter

Manufacturer

: Brüel & Kjær : B&K 2238

Model No. Serial No.

: 2359311

Microphone No. Equipment No.

: 2346382 : N-01-03

**Test conditions:** 

Room Temperatre

: 23 degree Celsius

Relative Humidity

: 64%

### **Test Specifications:**

Performance checking at 94 and 114 dB

#### Methodology:

In-house method, according to manufacturer instruction manual

#### **Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Laborary Manager

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

## **TEST REPORT**

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. 

 Test Report No.:
 C/N/60904-2

 Date of Issue:
 2006-09-04

 Date Received:
 2006-09-02

 Date Tested:
 2006-09-02

 Date Completed:
 2006-09-04

 Next Due Date:
 2007-09-03

ATTN:

Mr. Henry Leung

Page:

1 of 1

## **Certificate of Calibration**

#### Item for calibration:

Description

: Integrating Sound Level Meter

Manufacturer

: Brüel & Kjær

Model No.

: B&K 2238 : 2359303

Serial No. Equipment No.

: N-01-04

#### **Test conditions:**

Room Temperatre

: 23 degree Celsius

Relative Humidity

: 63%

Pressure

: 1006.5hPa

#### **Test Specifications:**

Performance checking at 94 and 114 dB

#### Methodology:

In-house method, according to manufacturer instruction manual

#### **Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Operation Manager

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

## **TEST REPORT**

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. Test Report No.: C/N/61014/1
Date of Issue: 2006-10-14
Date Received: 2006-10-13
Date Tested: 2006-10-14
Date Completed: 2006-10-14
Next Due Date: 2007-10-13

ATTN:

Mr. Henry Leung

Page:

1 of 1

#### **Certificate of Calibration**

#### Item for calibration:

Description

: Integrating Sound Level Meter

Manufacturer

: Brüel & Kjær

Model No.

: B&K 2238 : 2394976

Serial No.
Microphone No.

: 2407349

Equipment No.

: N-01-05

#### **Test conditions:**

Room Temperatre

: 21 degree Celsius

Relative Humidity

: 60%

#### **Test Specifications:**

Performance checking at 94 and 114 dB

#### Methodology:

In-house method, according to manufacturer instruction manual

#### Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Operation Manager

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

## **TEST REPORT**

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T. 

 Test Report No.:
 C/N/61116/2

 Date of Issue:
 2006-11-16

 Date Received:
 2006-11-15

 Date Tested:
 2006-11-15

 Date Completed:
 2006-11-16

 Next Due Date:
 2007-11-15

ATTN:

Mr. Henry Leung

Page:

1 of 1

#### Item for calibration:

Description

: Acoustical Calibrator

Manufacturer

: Brüel & Kjær

Model No.

: 4231

Serial No.

: 2326353

Project No.

: C13

Equipment No.

: N-02-01

#### Test conditions:

Room Temperatre

: 20 degree Celsius

Relative Humidity

: 59%

Pressure

: 1015.2 hPa

#### Methodology:

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

#### Results:

Sound Pressure Level	Measured SPL	Tolerance
At 94 dB SPL	94.0	$94.0 \pm 0.1~\mathrm{dB}$

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Unit C, 1/F, Goldlion Holdings Center 13-15 Yuen Shun Circuit, Shatin, Hong Kong.

Tel: (852) 2898 7388 Fax: (852) 2898 7076

## **TEST REPORT**

APPLICANT: Cinotech Consultants Limited

1602-1610 Delta House,

3 On Yiu Street, Shatin, N.T.

Test Report No.: C/06/60304
Date of Issue: 2006-03-04
Date Received: 2006-03-03
Date Tested: 2006-03-03
Date Completed: 2006-03-04
Next Due Date: 2007-03-04

ATTN:

Mr. Henry Leung

Page:

1 of 1

#### Item for calibration:

Description

: Acoustical Calibrator

Manufacturer

: Brüel & Kjær

Model No.
Serial No.

: 4231 : 2343007

Project No.

: C13

Equipment No.

: N-02-02

#### **Test conditions:**

Room Temperatre

: 20 degree Celsius

Relative Humidity

: 71%

Pressure

: 1020.1hPa

#### Methodology:

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

#### Results:

Sound Pressure Level	Measured SPL	Tolerance
At 94 dB SPL	94.0	$94.0 \pm 0.2  \mathrm{dB}$

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

**PATRICK TSE** 

606 - 608 Cornell Centre, 50 Wing Tai Road, Chai Wan, Hong Kong. Tel: (852) 2898 7388

Fax: (852) 2898 7076

## **TEST REPORT**

APPLICANT:

**Cinotech Consultants Limited** 

1601-1610 Delta House,

3 On Yiu Street, Shatin, N.T.

Test Report No.:	C/N/60904-3
Date of Issue:	2006-09-04
Date Received:	2006-09-02
Date Tested:	2006-09-02
Date Completed:	2006-09-04
Next Due Date:	2007-09-03

ATTN:

Mr. Henry Leung

Page:

1 of 1

Item for calibration:

Description

: Acoustical Calibrator

Manufacturer

: Brüel & Kjær

Model No.

: 4231

Serial No.

: 2412367

Equipment No.

: N-02-03

**Test conditions:** 

Room Temperatre

: 23 degree Celsius

Relative Humidity

: 63%

Pressure

: 1020.1hPa

#### Methodology:

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

#### Results:

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

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

## APPENDIX C ENVIRONMENTAL MONITORING SCHEDULES

# **Environmental Team for Sha Tin Heights Tunnel and Approaches Tentative Air Quality and Noise Monitoring Schedule for February 2007**

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

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

A2 Lau Pak Lok Secondary School N6 Shatin Heights

A3 Shatin Heights N7 Lau Pak Lok Secondary School

N5 Garden Villa N8 187 Tin Sam Tsuen

# **Environmental Team for Sha Tin Heights Tunnel and Approaches Tentative Air Quality and Noise Monitoring Schedule for March 2007**

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

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

A2 Lau Pak Lok Secondary School N6 Shatin Heights

A3 Shatin Heights N7 Lau Pak Lok Secondary School

N5 Garden Villa N8 187 Tin Sam Tsuen

## APPENDIX D 1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

## Appendix D - 1-hour TSP Monitoring Results

## 1-HOUR TSP MONITORING RESULTS

Location A2 - L	au Pak Lok	Secondary School	ol
Date	Time	Weather	Particulate Concentration ( μg/m³)
1-Feb-07	13:00	Sunny	181.3
6-Feb-07	13:40	Sunny	171.1
7-Feb-07	13:00	Sunny	104.5
8-Feb-07	13:00	Cloudy	61.6
12-Feb-07	10:00	Sunny	152.4
13-Feb-07	13:40	Sunny	117.6
15-Feb-07	13:00	Sunny	110.1
21-Feb-07	13:00	Cloudy	123.1
22-Feb-07	09:15	Cloudy	26.8
23-Feb-07	14:40	Sunny	60.4
27-Feb-07	13:05	Sunny	61.6
		Average	106.4
		Maximum	181.3
		Minimum	26.8

Location A3 - S	Shatin Heigh	ts	
Date	Time	Weather	Particulate Concentration ( μg/m³)
1-Feb-07	09:45	Sunny	200.9
6-Feb-07	16:15	Sunny	255.5
7-Feb-07	09:25	Sunny	109.3
8-Feb-07	09:45	Cloudy	76.2
12-Feb-07	08:40	Sunny	154.1
13-Feb-07	16:15	Sunny	141.6
15-Feb-07	09:45	Sunny	133.0
21-Feb-07	09:30	Cloudy	232.9
22-Feb-07	13:00	Cloudy	34.2
23-Feb-07	10:30	Sunny	36.0
27-Feb-07	15:36	Sunny	61.8
		Average	130.5
		Maximum	255.5
		Minimum	34.2

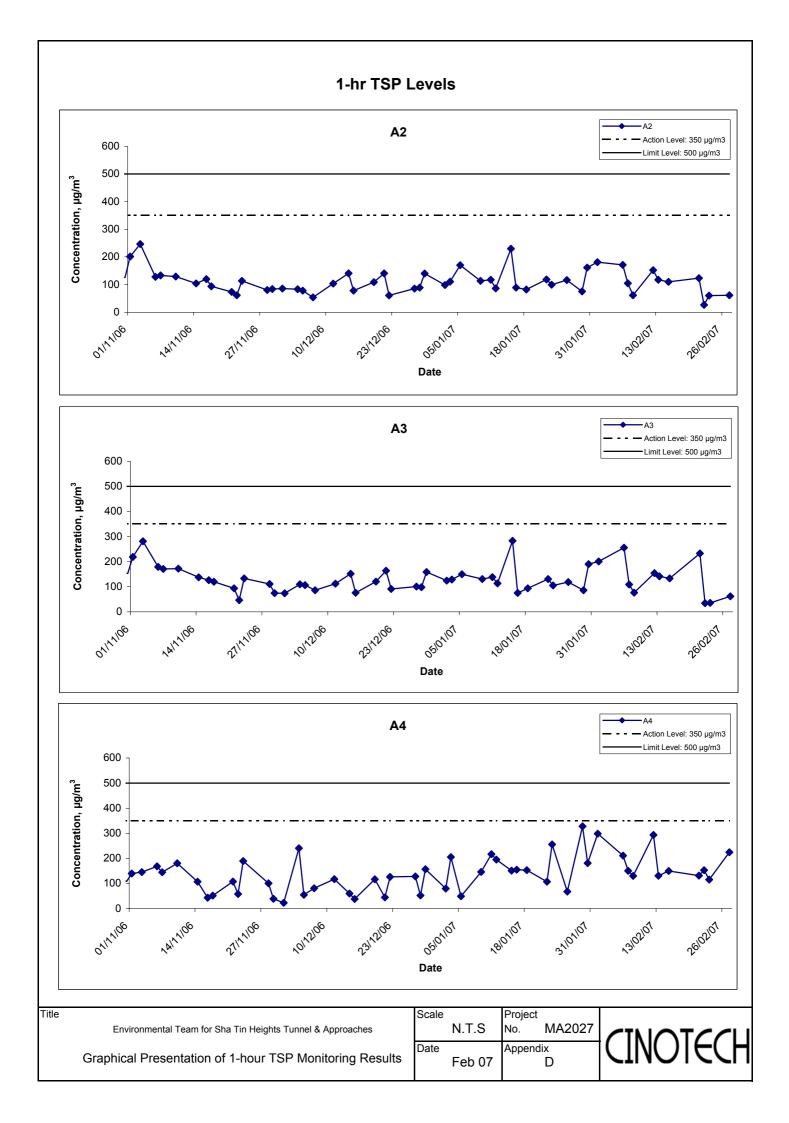
## Appendix D - 1-hour TSP Monitoring Results

## 1-HOUR TSP MONITORING RESULTS

#### Location A4 - Garden Villa

Date	Filter W	/eight (g)	Flow Rate	e (m³/min.)	Elaps	e Time	Sampling	Conc.	Weather	Air	Atmospheric	Particulate	Av. flow	Total vol.
	Initial	Final	Initial	Final	Initial	Final	Time(hrs.)	(µg/m³)	Condition	Temp. (K)	Pressure(Pa	weight(g)	(m <sup>3</sup> /min)	(m <sup>3</sup> )
1-Feb-07	2.8610	2.8827	1.21	1.21	5287.1	5288.1	1.0	298.6	Sunshine	290.3	771.7	0.0217	1.21	72.7
6-Feb-07	2.8472	2.8625	1.21	1.21	5288.1	5289.1	1.0	211.3	Sunshine	290.9	767.3	0.0153	1.21	72.4
7-Feb-07	2.8682	2.8791	1.21	1.21	5313.1	5314.1	1.0	150.8	Sunshine	292.3	768.2	0.0109	1.21	72.3
8-Feb-07	2.8277	2.8371	1.20	1.20	5314.1	5315.1	1.0	130.3	Cloudy	293.3	767.5	0.0094	1.20	72.2
12-Feb-07	2.8363	2.8575	1.21	1.21	5315.1	5316.1	1.0	293.3	Sunshine	291.7	766.4	0.0212	1.21	72.3
13-Feb-07	2.8412	2.8506	1.20	1.20	5340.1	5341.1	1.0	131.0	Sunshine	295.5	763.7	0.0094	1.20	71.8
15-Feb-07	2.8369	2.8477	1.20	1.20	5341.1	5342.1	1.0	149.7	Sunshine	292.7	765.6	0.0108	1.20	72.1
21-Feb-07	2.8543	2.8637	1.19	1.19	5366.1	5367.1	1.0	131.3	Cloudy	296.5	762.3	0.0094	1.19	71.6
22-Feb-07	2.8805	2.8915	1.20	1.20	5367.1	5368.1	1.0	152.8	Cloudy	292.9	762.2	0.0110	1.20	72.0
23-Feb-07	2.9010	2.9093	1.20	1.20	5392.1	5393.1	1.0	115.2	Sunshine	292.6	763.1	0.0083	1.20	72.1
27-Feb-07	2.8970	2.9132	1.20	1.20	5393.1	5394.1	1.0	224.1	Sunshine	291.2	764.9	0.0162	1.20	72.3

Min 115.2 Max 298.6 Average 180.8



APPENDIX E 24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

## **Appendix E - 24-hour TSP Monitoring Results**

Location A2 - Lau Pak Lok Secondary School

Date	Filter W	eight (g)	Flow Rate	e (m³/min.)	Elaps	e Time	Sampling	Conc.	Weather	Air	Atmospheric	Particulate	Av. flow	Total vol.
	Initial	Final	Initial	Final	Initial	Final	Time(hrs.)	(µg/m <sup>3</sup> )	Condition	Temp. (K)	Pressure(Pa)	weight(g)	(m <sup>3</sup> /min)	$(m^3)$
6-Feb-07	2.8548	2.9318	1.21	1.21	10784.2	10808.2	24.0	44.2	Sunshine	290.9	767.3	0.0770	1.21	1742.0
12-Feb-07	2.8811	3.0967	1.21	1.21	10808.2	10832.2	24.0	124.0	Sunshine	291.9	766.3	0.2156	1.21	1738.6
16-Feb-07	2.8716	2.9924	1.20	1.20	10832.2	10856.2	24.0	69.7	Cloudy	293.3	761.9	0.1208	1.20	1732.0
22-Feb-07	2.8277	2.9013	1.20	1.20	10856.2	10880.2	24.0	42.5	Sunshine	292.9	762.2	0.0736	1.20	1732.5
28-Feb-07	2.9093	3.0363	1.21	1.21	10880.2	10904.2	24.0	73.2	Sunshine	292.6	764.5	0.1270	1.21	1735.3
							Min	42.5						
							Max	124.0						
							Average	70.7						

## Location A3 - Shatin Heights

Date	Filter W	eight (g)	Flow Rate	e (m³/min.)	Elaps	se Time	Sampling	Conc.	Weather	Air	Atmospheric	Particulate	Av. flow	Total vol.
	Initial	Final	Initial	Final	Initial	Final	Time(hrs.)	(µg/m <sup>3</sup> )	Condition	Temp. (K)	Pressure(Pa)	weight(g)	(m <sup>3</sup> /min)	(m <sup>3</sup> )
6-Feb-07	2.8870	3.0513	1.22	1.22	6322.8	6346.8	24.0	93.9	Sunshine	290.9	767.3	0.1643	1.22	1749.7
12-Feb-07	2.8439	3.0884	1.21	1.21	6346.8	6370.8	24.0	140.0	Sunshine	291.9	766.3	0.2445	1.21	1746.5
16-Feb-07	2.8636	2.8972	1.21	1.21	6370.8	6394.8	24.0	19.3	Cloudy	293.3	761.9	0.0336	1.21	1739.3
22-Feb-07	2.8610	2.9716	1.21	1.21	6394.8	6418.8	24.0	63.5	Sunshine	292.9	762.2	0.1106	1.21	1740.5
28-Feb-07	2.9075	3.0773	1.21	1.21	6418.8	6442.8	24.0	97.4	Sunshine	292.6	764.5	0.1698	1.21	1743.2
							Min	19.3						
							Max	140.0						
							Average	82.8						

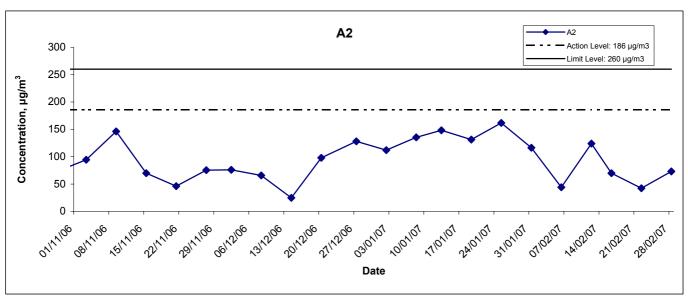
#### Location A4 - Garden Villa

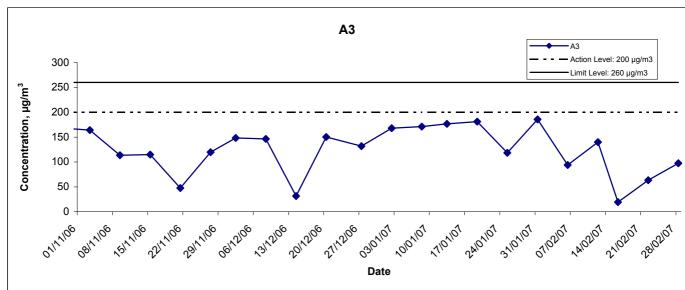
Date	Filter W	eight (g)	Flow Rate	e (m³/min.)	Elaps	se Time	Sampling	Conc.	Weather	Air	Atmospheric	Particulate	Av. flow	Total vol.
	Initial	Final	Initial	Final	Initial	Final	Time(hrs.)	$(\mu g/m^3)$	Condition	Temp. (K)	Pressure(Pa)	weight(g)	(m <sup>3</sup> /min)	$(m^3)$
6-Feb-07	2.8568	3.0159	1.21	1.21	5289.1	5313.1	24.0	91.5	Sunshine	290.7	767.5	0.1591	1.21	1738.8
12-Feb-07	2.8947	3.0178	1.21	1.21	5316.1	5340.1	24.0	71.0	Sunshine	291.7	766.4	0.1231	1.21	1735.0
16-Feb-07	2.8833	2.9571	1.19	1.19	5342.1	5366.1	24.0	43.0	Cloudy	297.1	761.0	0.0738	1.19	1715.1
22-Feb-07	2.9033	3.0211	1.20	1.20	5368.1	5392.1	24.0	68.2	Sunshine	292.9	762.2	0.1178	1.20	1727.4
28-Feb-07	2.8744	3.0202	1.20	1.20	5394.1	5418.1	24.0	84.3	Sunshine	292.6	764.5	0.1458	1.20	1730.5
							Min	43.0			•			
							May	91.5						

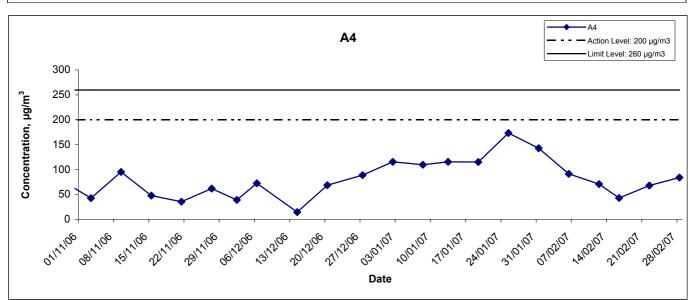
Average

71.6

#### 24-hr TSP Levels







Title

Environmental Team for Sha Tin Heights Tunnel & Approaches

Graphical Presentation of 24-hour TSP Monitoring Results

Scale Project No. MA2027

Date Feb 07 E



## APPENDIX F WIND DATA

Date	Time	Wind Speed m/s	Direction
1-Feb-07	00:00	2.7	WSW
1-Feb-07	01:00	2.7	W
1-Feb-07	02:00	2.2	WSW
1-Feb-07	03:00	3.1	WSW
1-Feb-07	04:00	3.6	WSW
1-Feb-07	05:00	2.7	WSW
1-Feb-07	06:00	4.0	WSW
1-Feb-07	07:00	1.8	W
1-Feb-07	08:00	0.4	WSW
1-Feb-07	09:00	1.3	WNW
1-Feb-07	10:00	0.4	WSW
1-Feb-07	11:00	0.4	W
1-Feb-07	12:00	0.0	WNW
1-Feb-07	13:00	0.9	WNW
1-Feb-07	14:00	0.9	WNW
1-Feb-07	15:00	0.4	W
1-Feb-07	16:00	0.0	
1-Feb-07	17:00	0.0	
1-Feb-07	18:00	1.8	W
1-Feb-07	19:00	0.9	WNW
1-Feb-07	20:00	2.2	WNW
1-Feb-07	21:00	0.9	WNW
1-Feb-07	22:00	0.9	W
1-Feb-07	23:00	2.2	SW
2-Feb-07	00:00	1.3	W
		1.8	WSW
2-Feb-07	01:00 02:00	2.2	SW
2-Feb-07		2.2	WSW
2-Feb-07	03:00		
2-Feb-07	04:00	0.9	WSW
2-Feb-07	05:00	0.9	WNW WNW
2-Feb-07	06:00		WSW
2-Feb-07	07:00	0.0	SW
2-Feb-07	08:00	0.9	WNW
2-Feb-07	09:00	1.8	WNW
2-Feb-07	10:00 11:00	4.0	WNW
2-Feb-07		2.2	WNW
2-Feb-07	12:00 13:00		WSW
2-Feb-07		3.1	
2-Feb-07	14:00	1.3	WNW WSW
2-Feb-07	15:00	2.2	W
2-Feb-07	16:00	1.8	
2-Feb-07	17:00	2.2	WNW
2-Feb-07	18:00	2.2	W VANAV
2-Feb-07	19:00	1.3	WNW
2-Feb-07	20:00	2.7	WNW
2-Feb-07	21:00	2.7	WNW
2-Feb-07	22:00	1.8 4.5	WNW WNW
2-Feb-07	23:00		WNW
3-Feb-07	00:00	1.3	
3-Feb-07	01:00	0.9	WSW
3-Feb-07	02:00	1.3	WSW
3-Feb-07	03:00	0.4	S
3-Feb-07	04:00	0.0	SSW
3-Feb-07	05:00	0.0	
3-Feb-07	06:00	0.0	
3-Feb-07	07:00	0.0	
3-Feb-07	08:00	0.0	SW

Date	Time	Wind Speed m/s	Direction
3-Feb-07	09:00	2.2	SSW
3-Feb-07	10:00	2.7	WNW
3-Feb-07	11:00	1.8	WSW
3-Feb-07	12:00	0.9	WSW
3-Feb-07	13:00	0.0	
3-Feb-07	14:00	0.0	
3-Feb-07	15:00	0.0	
3-Feb-07	16:00	0.0	
3-Feb-07	17:00	0.9	WNW
3-Feb-07	18:00	0.9	WNW
3-Feb-07	19:00	0.9	WNW
3-Feb-07	20:00	1.8	WNW
3-Feb-07	21:00	1.3	WNW
3-Feb-07	22:00	1.3	WNW
3-Feb-07	23:00	1.8	WNW
4-Feb-07	00:00	1.3	NW
4-Feb-07	01:00	0.9	NNE
4-Feb-07	02:00	1.3	WSW
4-Feb-07	03:00	1.3	S
4-Feb-07	04:00	0.0	
4-Feb-07	05:00	0.0	SSW
4-Feb-07	06:00	0.0	
4-Feb-07	07:00	0.0	SSW
4-Feb-07	08:00	0.0	SSE
4-Feb-07	09:00	0.4	S
4-Feb-07	10:00	3.6	<u>S</u>
4-Feb-07	11:00	1.8	WSW
4-Feb-07	12:00	0.9	WSW
4-Feb-07	13:00	0.9	WSW
4-Feb-07	14:00	0.0	NNE
4-Feb-07	15:00	0.0	ININC
4-Feb-07	16:00	0.0	WNW
4-Feb-07 4-Feb-07	17:00		
4-Feb-07	18:00	0.0	WNW
4-Feb-07 4-Feb-07	19:00	0.4	WNW
4-Feb-07	20:00	0.4	NW
4-Feb-07 4-Feb-07	21:00	1.3	WNW
4-Feb-07		2.2	WNW
	22:00	1.3	
4-Feb-07	23:00		W W
5-Feb-07	00:00	2.2	W
5-Feb-07	01:00 02:00	2.2	WSW
5-Feb-07		2.7	W
5-Feb-07	03:00	3.6	
5-Feb-07	04:00	3.1	WSW WSW
5-Feb-07	05:00	3.1	
5-Feb-07	06:00	3.1	WSW
5-Feb-07	07:00	3.6	W
5-Feb-07	08:00	1.3	SW
5-Feb-07	09:00	0.9	W
5-Feb-07	10:00	0.9	WNW
5-Feb-07	11:00	0.0	WSW
5-Feb-07	12:00	1.8	WNW
5-Feb-07	13:00	0.4	WSW
5-Feb-07	14:00	1.8	WNW
5-Feb-07	15:00	0.4	W
5-Feb-07	16:00	0.0	
5-Feb-07	17:00	0.0	W

Date	Time	Wind Speed m/s	Direction
5-Feb-07	18:00	2.7	W
5-Feb-07	19:00	0.0	NW
5-Feb-07	20:00	1.8	WNW
5-Feb-07	21:00	2.2	W
5-Feb-07	22:00	0.9	WNW
5-Feb-07	23:00	2	WSW
6-Feb-07	00:00	2	SW
6-Feb-07	01:00	1	W
6-Feb-07	02:00	2	SW
6-Feb-07	03:00	2	SW
6-Feb-07	04:00	2	SW
6-Feb-07	05:00	0	WNW
6-Feb-07	06:00	0.9	WNW
6-Feb-07	07:00	0.0	W
6-Feb-07	08:00	0.0	SW
6-Feb-07	09:00	1.3	WNW
6-Feb-07	10:00	1.3	WNW
6-Feb-07	11:00	3.1	WNW
6-Feb-07	12:00	0.9	W
6-Feb-07	13:00	3.1	WNW
6-Feb-07	14:00	2.2	W
6-Feb-07	15:00	1.3	SW
6-Feb-07	16:00	0.9	WNW
6-Feb-07	17:00	1.3	WNW
6-Feb-07	18:00	0.9	W
6-Feb-07	19:00	2.7	WNW
6-Feb-07	20:00	2.2	WNW
6-Feb-07	21:00	3.6	WNW
6-Feb-07	22:00	3.6	WNW
6-Feb-07	23:00	2.7	W
7-Feb-07	00:00	4.0	WNW
7-Feb-07	01:00	2.2	WSW
7-Feb-07	02:00	1.8	WSW
7-Feb-07	03:00	2.7	WSW
7-Feb-07	04:00	2.7	SW
7-Feb-07	05:00	1.8	WNW
7-Feb-07	06:00	1.3	W
7-Feb-07	07:00	1.3	WNW
7-Feb-07	08:00	1.8	WNW
7-Feb-07	09:00	1.8	WNW
7-Feb-07	10:00	1.3	WNW
7-Feb-07	11:00	1.3	WNW
7-Feb-07	12:00	2.2	WNW
7-Feb-07	13:00	2.7	WNW
7-Feb-07	14:00	0.9	WSW
7-Feb-07	15:00	0.4	WNW
7-Feb-07	16:00	2.2	W
7-Feb-07	17:00	3.6	WNW
7-Feb-07	18:00	3.1	WNW
7-Feb-07	19:00	3.6	WNW
7-Feb-07	20:00	4	WNW
7-Feb-07	21:00	4	WNW
7-Feb-07	22:00	3	WNW
7-Feb-07	23:00	4.5	WNW
8-Feb-07	00:00	1.8	WNW
8-Feb-07	01:00	1.8	WSW
8-Feb-07	02:00	0.4	WSW

Date	Time	Wind Speed m/s	Direction
8-Feb-07	03:00	0.9	SW
8-Feb-07	04:00	1.3	SSW
8-Feb-07	05:00	1.8	SSW
8-Feb-07	06:00	3.1	WSW
8-Feb-07	07:00	3.1	WSW
8-Feb-07	08:00	1.3	WSW
8-Feb-07	09:00	2.7	WSW
8-Feb-07	10:00	2.7	WSW
8-Feb-07	11:00	1.3	WNW
8-Feb-07	12:00	2.2	W
8-Feb-07	13:00	2.7	WSW
8-Feb-07	14:00	4.0	WSW
8-Feb-07	15:00	4.0	WSW
8-Feb-07	16:00	4.9	WSW
8-Feb-07	17:00	3.6	WSW
8-Feb-07	18:00	3.6	WNW
8-Feb-07	19:00	4	WSW
8-Feb-07	20:00	4.5	WSW
8-Feb-07	21:00	4.9	WSW
8-Feb-07	22:00	3.6	WSW
8-Feb-07	23:00	2.7	WNW
9-Feb-07	00:00	3.6	WSW
9-Feb-07	01:00	3.1	WSW
9-Feb-07	02:00	3.6	WSW
9-Feb-07	03:00	3.6	WSW
9-Feb-07	04:00	3.1	WSW
9-Feb-07	05:00	2.2	WSW
9-Feb-07	06:00	1.8	WSW
9-Feb-07	07:00	1.8	WSW
9-Feb-07	08:00	1.3	W
9-Feb-07	09:00	2.2	WSW
9-Feb-07 9-Feb-07	10:00	2.2	WSW
9-Feb-07 9-Feb-07	11:00	1.8	WSW
9-Feb-07	12:00	3.1	WSW
9-Feb-07 9-Feb-07	13:00	3.1	WSW
9-Feb-07	14:00	2.7	WSW
9-Feb-07 9-Feb-07	15:00	3.1	SW
9-Feb-07	16:00	3.6	WSW
9-Feb-07 9-Feb-07	17:00	5.4 4.0	WNW WNW
	18:00		WSW
9-Feb-07	19:00 20:00	3.6	
9-Feb-07	21:00	4.0	WSW
9-Feb-07		3.6	WSW
9-Feb-07	22:00	2.7	WSW SW
9-Feb-07	23:00	1.8	
10-Feb-07	00:00	2.2	SW
10-Feb-07	01:00	0.9	SSW
10-Feb-07	02:00	1.3	S
10-Feb-07	03:00	0.0	SW
10-Feb-07	04:00	0.0	
10-Feb-07	05:00	0.0	
10-Feb-07	06:00	0.0	
10-Feb-07	07:00	0.0	
10-Feb-07	08:00	0.0	
10-Feb-07	09:00	0.0	W
10-Feb-07	10:00	0.9	WSW
10-Feb-07	11:00	1.8	W

10-Feb-07	Date	Time	Wind Speed m/s	Direction
10-Feb-07	10-Feb-07	12:00	•	WSW
10-Feb-07			3.1	WSW
10-Feb-07				SW
10-Feb-07				
11-Feb-07				
11-Feb-07         13:00         0.0            11-Feb-07         14:00         0.0         SSW           11-Feb-07         15:00         0.0            11-Feb-07         16:00         0.0            11-Feb-07         17:00         1.3         WNW           11-Feb-07         18:00         3.6         WNW           11-Feb-07         19:00         4.0         WNW           11-Feb-07         20:00         3.6         WNW           11-Feb-07         21:00         2.7         WNW           11-Feb-07         21:00         2.7         WNW           11-Feb-07         22:00         2.2         WNW           11-Feb-07         23:00         1.3         WNW           12-Feb-07         00:00         1.3         WNW           12-Feb-07         01:00         0.4         NE           12-Feb-07         02:00         0.0            12-Feb-07         03:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         06:00         0.0            12-Feb-07 <td< td=""><td></td><td></td><td></td><td></td></td<>				
11-Feb-07         14:00         0.0         SSW           11-Feb-07         15:00         0.0            11-Feb-07         16:00         0.0            11-Feb-07         17:00         1.3         WNW           11-Feb-07         18:00         3.6         WNW           11-Feb-07         19:00         4.0         WNW           11-Feb-07         20:00         3.6         WNW           11-Feb-07         21:00         2.7         WNW           11-Feb-07         22:00         2.2         WNW           11-Feb-07         23:00         1.3         WNW           12-Feb-07         00:00         1.3         WNW           12-Feb-07         01:00         0.4         NE           12-Feb-07         01:00         0.4         NE           12-Feb-07         03:00         0.0            12-Feb-07         04:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         08:00         0.0            12-Feb-07				
11-Feb-07       15:00       0.0          11-Feb-07       16:00       0.0          11-Feb-07       17:00       1.3       WNW         11-Feb-07       18:00       3.6       WNW         11-Feb-07       19:00       4.0       WNW         11-Feb-07       20:00       3.6       WNW         11-Feb-07       21:00       2.7       WNW         11-Feb-07       21:00       2.7       WNW         11-Feb-07       22:00       2.2       WNW         11-Feb-07       23:00       1.3       WNW         12-Feb-07       00:00       1.3       WNW         12-Feb-07       01:00       0.4       NE         12-Feb-07       01:00       0.4       NE         12-Feb-07       02:00       0.0          12-Feb-07       03:00       0.0          12-Feb-07       04:00       0.0          12-Feb-07       05:00       0.0          12-Feb-07       06:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       10:00       0.0				
11-Feb-07       16:00       0.0          11-Feb-07       17:00       1.3       WNW         11-Feb-07       18:00       3.6       WNW         11-Feb-07       19:00       4.0       WNW         11-Feb-07       20:00       3.6       WNW         11-Feb-07       21:00       2.7       WNW         11-Feb-07       22:00       2.2       WNW         11-Feb-07       23:00       1.3       WNW         12-Feb-07       00:00       1.3       WNW         12-Feb-07       01:00       0.4       NE         12-Feb-07       02:00       0.0          12-Feb-07       03:00       0.0          12-Feb-07       04:00       0.0          12-Feb-07       05:00       0.0          12-Feb-07       06:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       13:00       0.0				3377
11-Feb-07         17:00         1.3         WNW           11-Feb-07         18:00         3.6         WNW           11-Feb-07         19:00         4.0         WNW           11-Feb-07         20:00         3.6         WNW           11-Feb-07         21:00         2.7         WNW           11-Feb-07         21:00         2.7         WNW           11-Feb-07         22:00         2.2         WNW           11-Feb-07         23:00         1.3         WNW           12-Feb-07         00:00         1.3         WNW           12-Feb-07         01:00         0.4         NE           12-Feb-07         02:00         0.0            12-Feb-07         03:00         0.0            12-Feb-07         04:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         06:00         0.0            12-Feb-07         07:00         0.0            12-Feb-07         08:00         0.0            12-Feb-07         10:00         0.0            12-Feb-07 <td< td=""><td></td><td></td><td></td><td><b></b></td></td<>				<b></b>
11-Feb-07       18:00       3.6       WNW         11-Feb-07       19:00       4.0       WNW         11-Feb-07       20:00       3.6       WNW         11-Feb-07       21:00       2.7       WNW         11-Feb-07       22:00       2.2       WNW         11-Feb-07       23:00       1.3       WNW         12-Feb-07       00:00       1.3       WNW         12-Feb-07       01:00       0.4       NE         12-Feb-07       02:00       0.0          12-Feb-07       03:00       0.0          12-Feb-07       04:00       0.0          12-Feb-07       05:00       0.0          12-Feb-07       06:00       0.0          12-Feb-07       07:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0          12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4				\\/\\\/
11-Feb-07         19:00         4.0         WNW           11-Feb-07         20:00         3.6         WNW           11-Feb-07         21:00         2.7         WNW           11-Feb-07         22:00         2.2         WNW           11-Feb-07         23:00         1.3         WNW           12-Feb-07         00:00         1.3         WNW           12-Feb-07         01:00         0.4         NE           12-Feb-07         02:00         0.0            12-Feb-07         03:00         0.0            12-Feb-07         04:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         06:00         0.0            12-Feb-07         08:00         0.0            12-Feb-07         09:00         0.0            12-Feb-07         10:00         0.0            12-Feb-07         11:00         0.0            12-Feb-07         13:00         0.0            12-Feb-07 <td< td=""><td></td><td></td><td></td><td></td></td<>				
11-Feb-07         20:00         3.6         WNW           11-Feb-07         21:00         2.7         WNW           11-Feb-07         22:00         2.2         WNW           11-Feb-07         23:00         1.3         WNW           12-Feb-07         00:00         1.3         WNW           12-Feb-07         01:00         0.4         NE           12-Feb-07         02:00         0.0            12-Feb-07         03:00         0.0            12-Feb-07         04:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         06:00         0.0            12-Feb-07         07:00         0.0            12-Feb-07         08:00         0.0            12-Feb-07         09:00         0.0            12-Feb-07         10:00         0.0            12-Feb-07         11:00         0.0            12-Feb-07         13:00         1.3         WNW           12-Feb-07 <td< td=""><td></td><td></td><td></td><td></td></td<>				
11-Feb-07         21:00         2.7         WNW           11-Feb-07         22:00         2.2         WNW           11-Feb-07         23:00         1.3         WNW           12-Feb-07         00:00         1.3         WNW           12-Feb-07         01:00         0.4         NE           12-Feb-07         02:00         0.0            12-Feb-07         03:00         0.0            12-Feb-07         04:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         06:00         0.0            12-Feb-07         07:00         0.0            12-Feb-07         08:00         0.0            12-Feb-07         08:00         0.0            12-Feb-07         09:00         0.0            12-Feb-07         10:00         0.0            12-Feb-07         11:00         0.0            12-Feb-07         13:00         1.3         WNW           12-Feb-07         14:00         0.4         WNW           12-Feb-07 <td< td=""><td></td><td></td><td></td><td></td></td<>				
11-Feb-07         22:00         2.2         WNW           11-Feb-07         23:00         1.3         WNW           12-Feb-07         00:00         1.3         WNW           12-Feb-07         01:00         0.4         NE           12-Feb-07         02:00         0.0            12-Feb-07         03:00         0.0            12-Feb-07         04:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         06:00         0.0            12-Feb-07         07:00         0.0            12-Feb-07         08:00         0.0            12-Feb-07         09:00         0.0            12-Feb-07         10:00         0.0            12-Feb-07         11:00         0.0            12-Feb-07         12:00         0.0         SW           12-Feb-07         13:00         1.3         WNW           12-Feb-07         15:00         2.2         WNW           12-Feb-07         16:00         1.3         WSW           12-Feb-07				
11-Feb-07         23:00         1.3         WNW           12-Feb-07         00:00         1.3         WNW           12-Feb-07         01:00         0.4         NE           12-Feb-07         02:00         0.0            12-Feb-07         03:00         0.0            12-Feb-07         04:00         0.0            12-Feb-07         05:00         0.0            12-Feb-07         06:00         0.0            12-Feb-07         07:00         0.0            12-Feb-07         08:00         0.0            12-Feb-07         10:00         0.0            12-Feb-07         11:00         0.0            12-Feb-07         12:00         0.0         SW           12-Feb-07         13:00         1.3         WNW           12-Feb-07         14:00         0.4         WNW           12-Feb-07         16:00         1.3         WSW           12-Feb-07         16:00         1.3         WSW           12-Feb-07         17:00         2.2         WNW           12-Feb-07				
12-Feb-07       00:00       1.3       WNW         12-Feb-07       01:00       0.4       NE         12-Feb-07       02:00       0.0          12-Feb-07       03:00       0.0          12-Feb-07       04:00       0.0          12-Feb-07       05:00       0.0          12-Feb-07       06:00       0.0          12-Feb-07       07:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       09:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0          12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07       01:00       0.4       NE         12-Feb-07       02:00       0.0          12-Feb-07       03:00       0.0          12-Feb-07       04:00       0.0          12-Feb-07       05:00       0.0          12-Feb-07       06:00       0.0          12-Feb-07       07:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       09:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0          12-Feb-07       12:00       0.0       SW         12-Feb-07       13:00       1.3       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       17:00       2.2       WNW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07       02:00       0.0          12-Feb-07       03:00       0.0          12-Feb-07       04:00       0.0          12-Feb-07       05:00       0.0          12-Feb-07       06:00       0.0          12-Feb-07       07:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       09:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0       SW         12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       17:00       2.2       WNW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07       03:00       0.0          12-Feb-07       04:00       0.0          12-Feb-07       05:00       0.0          12-Feb-07       06:00       0.0          12-Feb-07       07:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       09:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0          12-Feb-07       12:00       0.0       SW         12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       17:00       2.2       WNW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07       04:00       0.0          12-Feb-07       05:00       0.0          12-Feb-07       06:00       0.0          12-Feb-07       07:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0          12-Feb-07       12:00       0.0       SW         12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       17:00       2.2       WNW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07       05:00       0.0          12-Feb-07       06:00       0.0          12-Feb-07       07:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       09:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0          12-Feb-07       12:00       0.0       SW         12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       17:00       2.2       WNW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07       06:00       0.0          12-Feb-07       07:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       09:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0       SW         12-Feb-07       12:00       0.0       SW         12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       17:00       2.2       WNW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07       07:00       0.0          12-Feb-07       08:00       0.0          12-Feb-07       09:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0       SW         12-Feb-07       13:00       0.0       SW         12-Feb-07       13:00       1.3       WNW         12-Feb-07       15:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07       08:00       0.0          12-Feb-07       09:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0       SW         12-Feb-07       12:00       0.0       SW         12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       17:00       2.2       WNW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07       09:00       0.0          12-Feb-07       10:00       0.0          12-Feb-07       11:00       0.0          12-Feb-07       12:00       0.0       SW         12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       17:00       2.2       WNW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07     10:00     0.0        12-Feb-07     11:00     0.0        12-Feb-07     12:00     0.0     SW       12-Feb-07     13:00     1.3     WNW       12-Feb-07     14:00     0.4     WNW       12-Feb-07     15:00     2.2     WNW       12-Feb-07     16:00     1.3     WSW       12-Feb-07     17:00     2.2     WNW       12-Feb-07     18:00     1.8     WNW       12-Feb-07     19:00     1.3     WNW				
12-Feb-07       11:00       0.0          12-Feb-07       12:00       0.0       SW         12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       17:00       2.2       WNW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07     12:00     0.0     SW       12-Feb-07     13:00     1.3     WNW       12-Feb-07     14:00     0.4     WNW       12-Feb-07     15:00     2.2     WNW       12-Feb-07     16:00     1.3     WSW       12-Feb-07     17:00     2.2     WNW       12-Feb-07     18:00     1.8     WNW       12-Feb-07     19:00     1.3     WNW				
12-Feb-07       13:00       1.3       WNW         12-Feb-07       14:00       0.4       WNW         12-Feb-07       15:00       2.2       WNW         12-Feb-07       16:00       1.3       WSW         12-Feb-07       17:00       2.2       WNW         12-Feb-07       18:00       1.8       WNW         12-Feb-07       19:00       1.3       WNW				
12-Feb-07 14:00 0.4 WNW 12-Feb-07 15:00 2.2 WNW 12-Feb-07 16:00 1.3 WSW 12-Feb-07 17:00 2.2 WNW 12-Feb-07 18:00 1.8 WNW 12-Feb-07 19:00 1.3 WNW				
12-Feb-07     15:00     2.2     WNW       12-Feb-07     16:00     1.3     WSW       12-Feb-07     17:00     2.2     WNW       12-Feb-07     18:00     1.8     WNW       12-Feb-07     19:00     1.3     WNW				
12-Feb-07     16:00     1.3     WSW       12-Feb-07     17:00     2.2     WNW       12-Feb-07     18:00     1.8     WNW       12-Feb-07     19:00     1.3     WNW				
12-Feb-07     17:00     2.2     WNW       12-Feb-07     18:00     1.8     WNW       12-Feb-07     19:00     1.3     WNW				
12-Feb-07 18:00 1.8 WNW 12-Feb-07 19:00 1.3 WNW				
12-Feb-07 19:00 1.3 WNW				
12-Feb-07 20:00 0.4 SSW				
	12-Feb-07	20:00	0.4	SSW

12-Feb-07	Date	Time	Wind Speed m/s	Direction
12-Feb-07	12-Feb-07	21:00	<u> </u>	WNW
12.Feb-07	12-Feb-07		1.8	WNW
13-Feb-07				WSW
13-Feb-07				
13-Feb-07         15:00         3.6         WNW           13-Feb-07         16:00         3.1         WNW           13-Feb-07         17:00         2.2         WNW           13-Feb-07         18:00         4.5         W           13-Feb-07         19:00         4.0         WNW           13-Feb-07         20:00         2.7         W           13-Feb-07         21:00         1.3         WNW           13-Feb-07         22:00         1.3         WNW           13-Feb-07         23:00         0.9         SW           14-Feb-07         00:00         1.3         W           14-Feb-07         01:00         0.4         SW           14-Feb-07         01:00         0.4         SW           14-Feb-07         03:00         0.9         W           14-Feb-07         03:00         0.9         W           14-Feb-07         05:00         1.8         WNW           14-Feb-07         05:00         1.3         WNW           14-Feb-07         07:00         2.7         W           14-Feb-07         07:00         2.7         W           14-Feb-07         09:00				
13-Feb-07				
13-Feb-07				
13-Feb-07         18:00         4.5         W           13-Feb-07         19:00         4.0         WNW           13-Feb-07         20:00         2.7         W           13-Feb-07         21:00         1.3         WNW           13-Feb-07         22:00         1.3         WNW           13-Feb-07         23:00         0.9         SW           14-Feb-07         00:00         0.9         SW           14-Feb-07         01:00         0.4         SW           14-Feb-07         02:00         0.0            14-Feb-07         03:00         0.9         W           14-Feb-07         04:00         1.8         WNW           14-Feb-07         05:00         1.3         WNW           14-Feb-07         05:00         1.3         WNW           14-Feb-07         06:00         1.8         W           14-Feb-07         06:00         1.8         W           14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         W           14-Feb-07         10:00         1.3         W           14-Feb-07         10:00				
13-Feb-07         19:00         4.0         WNW           13-Feb-07         20:00         2.7         W           13-Feb-07         21:00         1.3         WNW           13-Feb-07         22:00         1.3         WNW           13-Feb-07         23:00         0.9         SW           14-Feb-07         00:00         1.3         W           14-Feb-07         01:00         0.4         SW           14-Feb-07         02:00         0.0            14-Feb-07         03:00         0.9         W           14-Feb-07         03:00         0.9         W           14-Feb-07         04:00         1.8         WNW           14-Feb-07         05:00         1.3         WNW           14-Feb-07         06:00         1.8         W           14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         W           14-Feb-07         10:00         1.3         W           14-Feb-07         10:00         1.3         SW           14-Feb-07         12:00         0.9         SW           14-Feb-07         13:00				
13-Feb-07         20:00         2.7         W           13-Feb-07         21:00         1.3         WNW           13-Feb-07         22:00         1.3         WNW           13-Feb-07         23:00         0.9         SW           14-Feb-07         00:00         1.3         W           14-Feb-07         01:00         0.4         SW           14-Feb-07         02:00         0.0            14-Feb-07         03:00         0.9         W           14-Feb-07         04:00         1.8         WNW           14-Feb-07         05:00         1.3         WNW           14-Feb-07         06:00         1.8         W           14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         W           14-Feb-07         09:00         2.2         WNW           14-Feb-07         10:00         1.3         W           14-Feb-07         11:00         1.3         W           14-Feb-07         12:00         0.9         SW           14-Feb-07         14:00         0.0         WSW           14-Feb-07         15:00				
13-Feb-07         21:00         1.3         WNW           13-Feb-07         22:00         1.3         WNW           13-Feb-07         23:00         0.9         SW           14-Feb-07         00:00         1.3         W           14-Feb-07         01:00         0.4         SW           14-Feb-07         02:00         0.0            14-Feb-07         03:00         0.9         W           14-Feb-07         04:00         1.8         WNW           14-Feb-07         05:00         1.3         WW           14-Feb-07         06:00         1.8         W           14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         W           14-Feb-07         09:00         2.2         WNW           14-Feb-07         10:00         1.3         W           14-Feb-07         10:00         1.3         W           14-Feb-07         11:00         1.3         SW           14-Feb-07         13:00         2.2         WNW           14-Feb-07         14:00         0.0         WSW           14-Feb-07         15:00				
13-Feb-07         22:00         1.3         WNW           13-Feb-07         23:00         0.9         SW           14-Feb-07         00:00         1.3         W           14-Feb-07         01:00         0.4         SW           14-Feb-07         02:00         0.0            14-Feb-07         03:00         0.9         W           14-Feb-07         04:00         1.8         WNW           14-Feb-07         05:00         1.3         WNW           14-Feb-07         06:00         1.8         W           14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         WNW           14-Feb-07         09:00         2.2         WNW           14-Feb-07         10:00         1.3         W           14-Feb-07         10:00         1.3         W           14-Feb-07         11:00         1.3         SW           14-Feb-07         13:00         2.2         WNW           14-Feb-07         14:00         0.9         SW           14-Feb-07         15:00         1.8         WNW           14-Feb-07         16:00				
13-Feb-07         23:00         0.9         SW           14-Feb-07         00:00         1.3         W           14-Feb-07         01:00         0.4         SW           14-Feb-07         02:00         0.0            14-Feb-07         03:00         0.9         W           14-Feb-07         04:00         1.8         WNW           14-Feb-07         05:00         1.3         WNW           14-Feb-07         06:00         1.8         W           14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         WNW           14-Feb-07         09:00         2.2         WNW           14-Feb-07         10:00         1.3         W           14-Feb-07         11:00         1.3         SW           14-Feb-07         12:00         0.9         SW           14-Feb-07         13:00         2.2         WNW           14-Feb-07         14:00         0.0         WSW           14-Feb-07         16:00         1.3         WSW           14-Feb-07         16:00         1.3         WSW           14-Feb-07         19:00				
14-Feb-07       00:00       1.3       W         14-Feb-07       01:00       0.4       SW         14-Feb-07       02:00       0.0          14-Feb-07       03:00       0.9       W         14-Feb-07       04:00       1.8       WNW         14-Feb-07       05:00       1.3       WNW         14-Feb-07       06:00       1.8       W         14-Feb-07       07:00       2.7       W         14-Feb-07       07:00       2.7       W         14-Feb-07       07:00       2.7       W         14-Feb-07       08:00       2.2       WNW         14-Feb-07       09:00       2.2       WNW         14-Feb-07       10:00       1.3       W         14-Feb-07       11:00       1.3       SW         14-Feb-07       13:00       2.2       WNW         14-Feb-07       13:00       2.2       WNW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       18:00       2.2       WNW				
14-Feb-07         01:00         0.4         SW           14-Feb-07         02:00         0.0            14-Feb-07         03:00         0.9         W           14-Feb-07         04:00         1.8         WNW           14-Feb-07         05:00         1.3         WNW           14-Feb-07         06:00         1.8         W           14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         W           14-Feb-07         09:00         2.2         WNW           14-Feb-07         10:00         1.3         W           14-Feb-07         10:00         1.3         W           14-Feb-07         12:00         0.9         SW           14-Feb-07         13:00         2.2         WNW           14-Feb-07         14:00         0.0         WSW           14-Feb-07         15:00         1.8         WNW           14-Feb-07         16:00         1.3         WSW           14-Feb-07         17:00         2.2         W           14-Feb-07         18:00         2.2         WNW           14-Feb-07         20:00				
14-Feb-07       02:00       0.0          14-Feb-07       03:00       0.9       W         14-Feb-07       04:00       1.8       WNW         14-Feb-07       05:00       1.3       WNW         14-Feb-07       06:00       1.8       W         14-Feb-07       07:00       2.7       W         14-Feb-07       07:00       2.7       W         14-Feb-07       08:00       2.2       WNW         14-Feb-07       10:00       1.3       W         14-Feb-07       11:00       1.3       SW         14-Feb-07       12:00       0.9       SW         14-Feb-07       13:00       2.2       WNW         14-Feb-07       14:00       0.0       WSW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW				
14-Feb-07       03:00       0.9       W         14-Feb-07       04:00       1.8       WNW         14-Feb-07       05:00       1.3       WNW         14-Feb-07       06:00       1.8       W         14-Feb-07       07:00       2.7       W         14-Feb-07       08:00       2.2       W         14-Feb-07       09:00       2.2       WNW         14-Feb-07       10:00       1.3       W         14-Feb-07       11:00       1.3       SW         14-Feb-07       12:00       0.9       SW         14-Feb-07       13:00       2.2       WNW         14-Feb-07       14:00       0.0       WSW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W				
14-Feb-07         04:00         1.8         WNW           14-Feb-07         05:00         1.3         WNW           14-Feb-07         06:00         1.8         W           14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         W           14-Feb-07         09:00         2.2         WNW           14-Feb-07         10:00         1.3         W           14-Feb-07         11:00         1.3         SW           14-Feb-07         12:00         0.9         SW           14-Feb-07         13:00         2.2         WNW           14-Feb-07         14:00         0.0         WSW           14-Feb-07         15:00         1.8         WNW           14-Feb-07         15:00         1.8         WNW           14-Feb-07         16:00         1.3         WSW           14-Feb-07         18:00         2.2         WNW           14-Feb-07         18:00         2.2         WNW           14-Feb-07         19:00         0.4         WNW           14-Feb-07         21:00         0.4         WNW           14-Feb-07         21:00 <td></td> <td></td> <td></td> <td></td>				
14-Feb-07         05:00         1.3         WNW           14-Feb-07         06:00         1.8         W           14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         WNW           14-Feb-07         09:00         2.2         WNW           14-Feb-07         10:00         1.3         W           14-Feb-07         11:00         1.3         SW           14-Feb-07         12:00         0.9         SW           14-Feb-07         13:00         2.2         WNW           14-Feb-07         14:00         0.0         WSW           14-Feb-07         15:00         1.8         WNW           14-Feb-07         16:00         1.3         WSW           14-Feb-07         17:00         2.2         WNW           14-Feb-07         18:00         2.2         WNW           14-Feb-07         18:00         2.2         WNW           14-Feb-07         19:00         0.4         WNW           14-Feb-07         20:00         0.9         NW           14-Feb-07         21:00         0.4         W           14-Feb-07         23:00 <td></td> <td></td> <td></td> <td></td>				
14-Feb-07         06:00         1.8         W           14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         W           14-Feb-07         09:00         2.2         WNW           14-Feb-07         10:00         1.3         W           14-Feb-07         11:00         1.3         SW           14-Feb-07         12:00         0.9         SW           14-Feb-07         13:00         2.2         WNW           14-Feb-07         14:00         0.0         WSW           14-Feb-07         15:00         1.8         WNW           14-Feb-07         16:00         1.3         WSW           14-Feb-07         17:00         2.2         WNW           14-Feb-07         17:00         2.2         WNW           14-Feb-07         18:00         2.2         WNW           14-Feb-07         19:00         0.4         WNW           14-Feb-07         20:00         0.9         NW           14-Feb-07         20:00         0.9         NW           14-Feb-07         21:00         0.4         W           14-Feb-07         23:00				
14-Feb-07         07:00         2.7         W           14-Feb-07         08:00         2.2         W           14-Feb-07         09:00         2.2         WNW           14-Feb-07         10:00         1.3         W           14-Feb-07         11:00         1.3         SW           14-Feb-07         12:00         0.9         SW           14-Feb-07         13:00         2.2         WNW           14-Feb-07         14:00         0.0         WSW           14-Feb-07         15:00         1.8         WNW           14-Feb-07         16:00         1.3         WSW           14-Feb-07         17:00         2.2         W           14-Feb-07         18:00         2.2         WNW           14-Feb-07         19:00         0.4         WNW           14-Feb-07         20:00         0.9         NW           14-Feb-07         21:00         0.4         W           14-Feb-07         21:00         0.4         W           14-Feb-07         22:00         0.9         WNW           15-Feb-07         00:00         2.2         WNW           15-Feb-07         01:00				
14-Feb-07       08:00       2.2       W         14-Feb-07       09:00       2.2       WNW         14-Feb-07       10:00       1.3       W         14-Feb-07       11:00       1.3       SW         14-Feb-07       12:00       0.9       SW         14-Feb-07       13:00       2.2       WNW         14-Feb-07       14:00       0.0       WSW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW <td></td> <td></td> <td></td> <td></td>				
14-Feb-07       09:00       2.2       WNW         14-Feb-07       10:00       1.3       W         14-Feb-07       11:00       1.3       SW         14-Feb-07       12:00       0.9       SW         14-Feb-07       13:00       2.2       WNW         14-Feb-07       14:00       0.0       WSW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW				
14-Feb-07       10:00       1.3       W         14-Feb-07       11:00       1.3       SW         14-Feb-07       12:00       0.9       SW         14-Feb-07       13:00       2.2       WNW         14-Feb-07       14:00       0.0       WSW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW				
14-Feb-07       11:00       1.3       SW         14-Feb-07       12:00       0.9       SW         14-Feb-07       13:00       2.2       WNW         14-Feb-07       14:00       0.0       WSW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW         15-Feb-07       04:00       0.4       SW				
14-Feb-07       12:00       0.9       SW         14-Feb-07       13:00       2.2       WNW         14-Feb-07       14:00       0.0       WSW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW         15-Feb-07       04:00       0.4       SW				
14-Feb-07       13:00       2.2       WNW         14-Feb-07       14:00       0.0       WSW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW         15-Feb-07       04:00       0.4       SW				
14-Feb-07       14:00       0.0       WSW         14-Feb-07       15:00       1.8       WNW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW         15-Feb-07       04:00       0.4       SW				
14-Feb-07       15:00       1.8       WNW         14-Feb-07       16:00       1.3       WSW         14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW         15-Feb-07       04:00       0.4       SW				
14-Feb-07       16:00       1.3       WSW         14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW         15-Feb-07       04:00       0.4       SW				
14-Feb-07       17:00       2.2       W         14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW         15-Feb-07       04:00       0.4       SW				
14-Feb-07       18:00       2.2       WNW         14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW         15-Feb-07       04:00       0.4       SW				
14-Feb-07       19:00       0.4       WNW         14-Feb-07       20:00       0.9       NW         14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW         15-Feb-07       04:00       0.4       SW				
14-Feb-07     20:00     0.9     NW       14-Feb-07     21:00     0.4     W       14-Feb-07     22:00     0.9     WNW       14-Feb-07     23:00     2.2     WNW       15-Feb-07     00:00     2.2     WNW       15-Feb-07     01:00     1.3     W       15-Feb-07     02:00     0.9     SSW       15-Feb-07     03:00     0.4     SW       15-Feb-07     04:00     0.4     SW				
14-Feb-07       21:00       0.4       W         14-Feb-07       22:00       0.9       WNW         14-Feb-07       23:00       2.2       WNW         15-Feb-07       00:00       2.2       WNW         15-Feb-07       01:00       1.3       W         15-Feb-07       02:00       0.9       SSW         15-Feb-07       03:00       0.4       SW         15-Feb-07       04:00       0.4       SW				
14-Feb-07     22:00     0.9     WNW       14-Feb-07     23:00     2.2     WNW       15-Feb-07     00:00     2.2     WNW       15-Feb-07     01:00     1.3     W       15-Feb-07     02:00     0.9     SSW       15-Feb-07     03:00     0.4     SW       15-Feb-07     04:00     0.4     SW				
14-Feb-07     23:00     2.2     WNW       15-Feb-07     00:00     2.2     WNW       15-Feb-07     01:00     1.3     W       15-Feb-07     02:00     0.9     SSW       15-Feb-07     03:00     0.4     SW       15-Feb-07     04:00     0.4     SW				
15-Feb-07     00:00     2.2     WNW       15-Feb-07     01:00     1.3     W       15-Feb-07     02:00     0.9     SSW       15-Feb-07     03:00     0.4     SW       15-Feb-07     04:00     0.4     SW				
15-Feb-07     01:00     1.3     W       15-Feb-07     02:00     0.9     SSW       15-Feb-07     03:00     0.4     SW       15-Feb-07     04:00     0.4     SW				
15-Feb-07     02:00     0.9     SSW       15-Feb-07     03:00     0.4     SW       15-Feb-07     04:00     0.4     SW				
15-Feb-07 03:00 0.4 SW 15-Feb-07 04:00 0.4 SW				
15-Feb-07 04:00 0.4 SW				
15-Feb-07 05:00 0.9 SW				
	15-Feb-07	05:00	0.9	SW

15-Feb-07	Date	Time	Wind Speed m/s	Direction
15-Feb-07	15-Feb-07	06:00	•	WNW
15-Feb-07	15-Feb-07	07:00	1.8	SW
15-Feb-07	15-Feb-07	08:00	1.8	WNW
15-Feb-07	15-Feb-07	09:00	1.8	WNW
15-Feb-07				WNW
15-Feb-07	15-Feb-07			
15-Feb-07				
15-Feb-07				
15-Feb-07				
15-Feb-07	15-Feb-07			
15-Feb-07				
15-Feb-07				
15-Feb-07				
15-Feb-07	15-Feb-07			
15-Feb-07				
15-Feb-07				
15-Feb-07				
16-Feb-07				
16-Feb-07         05:00         0         W           16-Feb-07         06:00         2         WNW           16-Feb-07         07:00         3         WNW           16-Feb-07         08:00         2         WNW           16-Feb-07         09:00         1         WNW           16-Feb-07         10:00         2         WSW           16-Feb-07         11:00         3         WSW           16-Feb-07         12:00         3         WSW           16-Feb-07         13:00         2         WSW           16-Feb-07         14:00         1.8         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         23:00         1.8 </td <td></td> <td></td> <td></td> <td></td>				
16-Feb-07         06:00         2         WNW           16-Feb-07         07:00         3         WNW           16-Feb-07         08:00         2         WNW           16-Feb-07         09:00         1         WNW           16-Feb-07         10:00         2         WSW           16-Feb-07         11:00         3         WSW           16-Feb-07         12:00         3         WSW           16-Feb-07         13:00         2         WSW           16-Feb-07         14:00         1.8         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         23:00         1.8 </td <td></td> <td></td> <td></td> <td></td>				
16-Feb-07         07:00         3         WNW           16-Feb-07         08:00         2         WNW           16-Feb-07         09:00         1         WNW           16-Feb-07         10:00         2         WSW           16-Feb-07         11:00         3         WSW           16-Feb-07         12:00         3         WSW           16-Feb-07         13:00         2         WSW           16-Feb-07         14:00         1.8         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1				
16-Feb-07         08:00         2         WNW           16-Feb-07         09:00         1         WNW           16-Feb-07         10:00         2         WSW           16-Feb-07         11:00         3         WSW           16-Feb-07         12:00         3         WSW           16-Feb-07         13:00         2         WSW           16-Feb-07         14:00         1.8         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00				
16-Feb-07         09:00         1         WNW           16-Feb-07         10:00         2         WSW           16-Feb-07         11:00         3         WSW           16-Feb-07         12:00         3         WSW           16-Feb-07         13:00         2         WSW           16-Feb-07         14:00         1.8         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         05:00				
16-Feb-07         10:00         2         WSW           16-Feb-07         11:00         3         WSW           16-Feb-07         12:00         3         WSW           16-Feb-07         13:00         2         WSW           16-Feb-07         14:00         1.8         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         05:00				
16-Feb-07         11:00         3         WSW           16-Feb-07         12:00         3         WSW           16-Feb-07         13:00         2         WSW           16-Feb-07         14:00         1.8         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         05:00         0.4         W           17-Feb-07         06:00				
16-Feb-07         12:00         3         WSW           16-Feb-07         13:00         2         WSW           16-Feb-07         14:00         1.8         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00				
16-Feb-07         13:00         2         WSW           16-Feb-07         14:00         1.8         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         03:00         0.4         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         09:00				
16-Feb-07         14:00         1.8         WSW           16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         05:00         0.4         SSW           17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         08:00         1.8         SW           17-Feb-07         10:00				
16-Feb-07         15:00         2         WSW           16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         08:00         1.8         SW           17-Feb-07         10:00				
16-Feb-07         16:00         2         WSW           16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         08:00         1.8         SW           17-Feb-07         09:00         2.7         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         10:00				
16-Feb-07         17:00         3         W           16-Feb-07         18:00         3.1         WNW           16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         07:00         0.9         SW           17-Feb-07         09:00         2.7         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         11:00         2.7         W           17-Feb-07         12:00				
16-Feb-07       18:00       3.1       WNW         16-Feb-07       19:00       3.1       WNW         16-Feb-07       20:00       2.2       WNW         16-Feb-07       21:00       2.2       WNW         16-Feb-07       22:00       2.2       WNW         16-Feb-07       23:00       1.8       WNW         17-Feb-07       00:00       2.2       WNW         17-Feb-07       01:00       0.9       W         17-Feb-07       02:00       0.4       W         17-Feb-07       03:00       0.9       W         17-Feb-07       05:00       0.4       SSW         17-Feb-07       06:00       0.0       WSW         17-Feb-07       08:00       1.8       SW         17-Feb-07       09:00       2.7       SW         17-Feb-07       10:00       3.1       SW         17-Feb-07       11:00       2.7       W         17-Feb-07       12:00       1.8       SW         17-Feb-07       12:00       1.8       SW         17-Feb-07       13:00       2.2       WNW			2	
16-Feb-07         19:00         3.1         WNW           16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         08:00         1.8         SW           17-Feb-07         09:00         2.7         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         11:00         2.7         W           17-Feb-07         12:00         1.8         SW           17-Feb-07         13:00         2.2         WNW				
16-Feb-07         20:00         2.2         WNW           16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         08:00         1.8         SW           17-Feb-07         09:00         2.7         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         11:00         2.7         W           17-Feb-07         12:00         1.8         SW           17-Feb-07         13:00         2.2         WNW				
16-Feb-07         21:00         2.2         WNW           16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         08:00         1.8         SW           17-Feb-07         09:00         2.7         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         11:00         2.7         W           17-Feb-07         12:00         1.8         SW           17-Feb-07         13:00         2.2         WNW				
16-Feb-07         22:00         2.2         WNW           16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         07:00         0.9         SW           17-Feb-07         08:00         1.8         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         11:00         2.7         W           17-Feb-07         12:00         1.8         SW           17-Feb-07         12:00         1.8         SW				
16-Feb-07         23:00         1.8         WNW           17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         07:00         0.9         SW           17-Feb-07         08:00         1.8         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         11:00         2.7         W           17-Feb-07         12:00         1.8         SW           17-Feb-07         13:00         2.2         WNW				
17-Feb-07         00:00         2.2         WNW           17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         07:00         0.9         SW           17-Feb-07         08:00         1.8         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         11:00         2.7         W           17-Feb-07         12:00         1.8         SW           17-Feb-07         13:00         2.2         WNW				
17-Feb-07         01:00         0.9         W           17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         07:00         0.9         SW           17-Feb-07         08:00         1.8         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         11:00         2.7         W           17-Feb-07         12:00         1.8         SW           17-Feb-07         13:00         2.2         WNW				
17-Feb-07         02:00         0.4         W           17-Feb-07         03:00         0.9         W           17-Feb-07         04:00         0.0            17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         07:00         0.9         SW           17-Feb-07         08:00         1.8         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         11:00         2.7         W           17-Feb-07         12:00         1.8         SW           17-Feb-07         13:00         2.2         WNW				
17-Feb-07       03:00       0.9       W         17-Feb-07       04:00       0.0          17-Feb-07       05:00       0.4       SSW         17-Feb-07       06:00       0.0       WSW         17-Feb-07       07:00       0.9       SW         17-Feb-07       08:00       1.8       SW         17-Feb-07       09:00       2.7       SW         17-Feb-07       10:00       3.1       SW         17-Feb-07       11:00       2.7       W         17-Feb-07       12:00       1.8       SW         17-Feb-07       13:00       2.2       WNW				
17-Feb-07     04:00     0.0        17-Feb-07     05:00     0.4     SSW       17-Feb-07     06:00     0.0     WSW       17-Feb-07     07:00     0.9     SW       17-Feb-07     08:00     1.8     SW       17-Feb-07     09:00     2.7     SW       17-Feb-07     10:00     3.1     SW       17-Feb-07     11:00     2.7     W       17-Feb-07     12:00     1.8     SW       17-Feb-07     13:00     2.2     WNW				= = = = = = = = = = = = = = = = = = = =
17-Feb-07         05:00         0.4         SSW           17-Feb-07         06:00         0.0         WSW           17-Feb-07         07:00         0.9         SW           17-Feb-07         08:00         1.8         SW           17-Feb-07         09:00         2.7         SW           17-Feb-07         10:00         3.1         SW           17-Feb-07         11:00         2.7         W           17-Feb-07         12:00         1.8         SW           17-Feb-07         13:00         2.2         WNW				
17-Feb-07     06:00     0.0     WSW       17-Feb-07     07:00     0.9     SW       17-Feb-07     08:00     1.8     SW       17-Feb-07     09:00     2.7     SW       17-Feb-07     10:00     3.1     SW       17-Feb-07     11:00     2.7     W       17-Feb-07     12:00     1.8     SW       17-Feb-07     13:00     2.2     WNW				
17-Feb-07     07:00     0.9     SW       17-Feb-07     08:00     1.8     SW       17-Feb-07     09:00     2.7     SW       17-Feb-07     10:00     3.1     SW       17-Feb-07     11:00     2.7     W       17-Feb-07     12:00     1.8     SW       17-Feb-07     13:00     2.2     WNW				
17-Feb-07     08:00     1.8     SW       17-Feb-07     09:00     2.7     SW       17-Feb-07     10:00     3.1     SW       17-Feb-07     11:00     2.7     W       17-Feb-07     12:00     1.8     SW       17-Feb-07     13:00     2.2     WNW				
17-Feb-07     09:00     2.7     SW       17-Feb-07     10:00     3.1     SW       17-Feb-07     11:00     2.7     W       17-Feb-07     12:00     1.8     SW       17-Feb-07     13:00     2.2     WNW				
17-Feb-07     10:00     3.1     SW       17-Feb-07     11:00     2.7     W       17-Feb-07     12:00     1.8     SW       17-Feb-07     13:00     2.2     WNW				
17-Feb-07     11:00     2.7     W       17-Feb-07     12:00     1.8     SW       17-Feb-07     13:00     2.2     WNW				
17-Feb-07         12:00         1.8         SW           17-Feb-07         13:00         2.2         WNW				
17-Feb-07 13:00 2.2 WNW				
17-Feb-07 14:00 1.3 WNW				
	17-Feb-07	14:00	1.3	WNW

Date	Time	Wind Speed m/s	Direction
17-Feb-07	15:00	0.9	W
17-Feb-07	16:00	1.3	W
17-Feb-07	17:00	1.8	WNW
17-Feb-07	18:00	2	WNW
17-Feb-07	19:00	2	WNW
17-Feb-07	20:00	2	WNW
17-Feb-07	21:00	2	WNW
17-Feb-07	22:00	3	W
17-Feb-07	23:00	1.8	WNW
18-Feb-07	00:00	1.3	WNW
18-Feb-07	01:00	1.3	W
18-Feb-07	02:00	0.0	W
18-Feb-07	03:00	0.0	
18-Feb-07	04:00	0.0	
18-Feb-07	05:00	0.0	SSW
18-Feb-07	06:00	0.9	SSW
18-Feb-07	07:00	1.3	SSW
18-Feb-07	08:00	3.6	WNW
18-Feb-07	09:00	2.7	WNW
18-Feb-07	10:00	0.9	WNW
18-Feb-07	11:00	0.4	WNW
18-Feb-07	12:00	0.0	
18-Feb-07	13:00	0.0	
18-Feb-07	14:00	0.0	S
18-Feb-07	15:00	0.0	
18-Feb-07	16:00	0.4	SSE
18-Feb-07	17:00	1.3	WNW
18-Feb-07	18:00	0.9	WNW
18-Feb-07	19:00	1.8	WNW
18-Feb-07	20:00	0.9	WNW
18-Feb-07	21:00	0.9	W
18-Feb-07	22:00	1.8	W
18-Feb-07	23:00	2.7	WNW
19-Feb-07	00:00	1.3	W
19-Feb-07	01:00	1.8	WNW
19-Feb-07	02:00	0.4	WNW
19-Feb-07	03:00	2.7	WNW
19-Feb-07	04:00	2.7	WSW
19-Feb-07 19-Feb-07	05:00 06:00	2.7	WNW WSW
19-Feb-07 19-Feb-07	07:00	0.4	WSW
19-Feb-07 19-Feb-07		0.4	
19-Feb-07 19-Feb-07	08:00 09:00	0.0	WNW
19-Feb-07	10:00	0.0	WNW
19-Feb-07	11:00	0.0	
19-Feb-07	12:00	0.0	WNW
19-Feb-07	13:00	2.7	WNW
19-Feb-07	14:00	3.1	WNW WNW
19-Feb-07	15:00	3.6	
19-Feb-07	16:00	2.7	W
19-Feb-07	17:00	0.4	W
19-Feb-07	18:00	1.3	W
19-Feb-07	19:00	1.8	W
19-Feb-07	20:00	0.9	W
19-Feb-07	21:00	2.2	W
19-Feb-07	22:00	1.8	W
19-Feb-07	23:00	2.2	W

Date	Time	Wind Speed m/s	Direction
20-Feb-07	00:00	2.2	WNW
20-Feb-07	01:00	4.0	WNW
20-Feb-07	02:00	1.8	WNW
20-Feb-07	03:00	2.7	WNW
20-Feb-07	04:00	4.0	WNW
20-Feb-07	05:00	4.9	WNW
20-Feb-07	06:00	3.6	W
20-Feb-07	07:00	0.4	WSW
20-Feb-07	08:00	1.3	W
20-Feb-07	09:00	1.8	W
20-Feb-07	10:00	2.7	WNW
20-Feb-07	11:00	4.0	WNW
20-Feb-07	12:00	1.8	WNW
20-Feb-07	13:00	1.3	WNW
20-Feb-07	14:00	1.3	WNW
20-Feb-07	15:00	0.9	WNW
20-Feb-07	16:00	3.1	WNW
20-Feb-07	17:00	3	W
20-Feb-07	18:00	3	WNW
20-Feb-07	19:00	3	W
20-Feb-07	20:00	4	WNW
20-Feb-07	21:00	4	WNW
20-Feb-07	22:00	4	WNW
20-Feb-07	23:00	2.7	WNW
21-Feb-07	00:00	1.8	W
21-Feb-07	01:00	1.3	WSW
21-Feb-07	02:00	0.9	WSW
21-Feb-07	03:00	0.4	SW
21-Feb-07	04:00	0.9	SSW
21-Feb-07	05:00	1.3	WSW
21-Feb-07	06:00	1.3	WNW
21-Feb-07	07:00	0.9	WNW
21-Feb-07	08:00	0.9	WNW
21-Feb-07	09:00	0.4	WNW
21-Feb-07	10:00	0.0	
21-Feb-07	11:00	0.0	WNW
21-Feb-07	12:00	0.4	W
21-Feb-07	13:00	1.8	WNW
		1.8	WNW
21-Feb-07 21-Feb-07	14:00 15:00	2.2	WNW
21-Feb-07 21-Feb-07	16:00	1.3	WNW
21-Feb-07 21-Feb-07	17:00	2.2	W
21-Feb-07 21-Feb-07	18:00	3.6	WNW
21-Feb-07 21-Feb-07	19:00	4.5	WNW
21-Feb-07 21-Feb-07	20:00	4.5	WNW
21-Feb-07 21-Feb-07	21:00	1.8	WNW
21-Feb-07 21-Feb-07			WNW
	22:00	1.8	WNW
21-Feb-07	23:00 00:00	0.4	ESE
22-Feb-07	00:00	0.9	
22-Feb-07		0.4	ESE
22-Feb-07	02:00	0.0	
22-Feb-07	03:00	0.0	ESE
22-Feb-07	04:00	0.0	
22-Feb-07	05:00	0.0	SW
22-Feb-07	06:00	0.0	WSW
22-Feb-07	07:00	0.0	SW
22-Feb-07	08:00	0.4	WNW

Date	Time	Wind Speed m/s	Direction
22-Feb-07	09:00	0.9	WNW
22-Feb-07	10:00	0.9	W
22-Feb-07	11:00	0.9	WNW
22-Feb-07	12:00	0.4	WNW
22-Feb-07	13:00	0.0	SSE
22-Feb-07	14:00	0.0	
22-Feb-07	15:00	0.9	SW
22-Feb-07	16:00	0.9	WNW
22-Feb-07	17:00	2.2	WNW
22-Feb-07	18:00	2.7	W
22-Feb-07	19:00	2.2	W
22-Feb-07	20:00	3.1	WNW
22-Feb-07	21:00	2.2	WNW
22-Feb-07	22:00	2.2	WNW
22-Feb-07	23:00	1.3	SW
23-Feb-07	00:00	2.7	WNW
23-Feb-07	01:00	1.8	WNW
23-Feb-07	02:00	2	WNW
23-Feb-07	03:00	1	WSW
23-Feb-07	04:00	2	WNW
23-Feb-07 23-Feb-07	05:00	3	WNW
23-Feb-07 23-Feb-07	06:00	2	WNW
23-Feb-07 23-Feb-07	07:00	2	W
23-Feb-07 23-Feb-07	08:00	1	WNW
			W
23-Feb-07	09:00	0	W
23-Feb-07	10:00	0	
23-Feb-07	11:00		
23-Feb-07	12:00	0.9	W
23-Feb-07	13:00	0.0	NW
23-Feb-07	14:00	0.0	 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
23-Feb-07	15:00	0.0	WNW
23-Feb-07	16:00	2.7	WNW
23-Feb-07	17:00	0.9	WNW
23-Feb-07	18:00	1.3	WNW
23-Feb-07	19:00	0.4	WNW
23-Feb-07	20:00	0.4	WNW
23-Feb-07	21:00	0.9	WNW
23-Feb-07	22:00	0.9	W
23-Feb-07	23:00	1.8	WNW
24-Feb-07	00:00	1.8	WNW
24-Feb-07	01:00	2.7	WNW
24-Feb-07	02:00	3.1	WNW
24-Feb-07	03:00	2.7	WNW
24-Feb-07	04:00	2.2	WNW
24-Feb-07	05:00	2.7	WNW
24-Feb-07	06:00	2.2	WNW
24-Feb-07	07:00	0.9	WNW
24-Feb-07	08:00	0.9	WNW
24-Feb-07	09:00	0.0	NW
24-Feb-07	10:00	0.0	NW
24-Feb-07	11:00	0.0	WSW
24-Feb-07	12:00	0.9	WNW
24-Feb-07	13:00	0.4	WSW
24-Feb-07	14:00	1.3	SW
24-Feb-07	15:00	0.9	SW
24-Feb-07	16:00	1.3	WSW
24-Feb-07	17:00	2.7	WNW

Date	Time	Wind Speed m/s	Direction
24-Feb-07	18:00	1.3	W
24-Feb-07	19:00	2.7	WSW
24-Feb-07	20:00	1.8	WSW
24-Feb-07	21:00	2.7	WNW
24-Feb-07	22:00	2.7	W
24-Feb-07	23:00	2.2	WNW
25-Feb-07	00:00	2.2	WNW
25-Feb-07	01:00	1.3	WNW
25-Feb-07	02:00	2.2	WNW
25-Feb-07	03:00	0.4	WNW
25-Feb-07	04:00	0.9	WSW
25-Feb-07	05:00	0.4	WSW
25-Feb-07	06:00	1.8	WNW
25-Feb-07	07:00	1.8	WNW
25-Feb-07	08:00	1.3	SW
25-Feb-07	09:00	0.9	WSW
25-Feb-07	10:00	0.4	W
25-Feb-07	11:00	1.8	WNW
25-Feb-07	12:00	2.2	WNW
25-Feb-07	13:00	2.7	WNW
25-Feb-07	14:00	2	W
25-Feb-07	15:00	2	WNW
25-Feb-07	16:00	2	WNW
25-Feb-07	17:00	4	WNW
25-Feb-07	18:00	4	WNW
25-Feb-07	19:00	2	WNW
25-Feb-07	20:00	2	WNW
25-Feb-07	21:00	1.8	W
25-Feb-07	22:00	2.2	W
25-Feb-07	23:00	2.7	SW
26-Feb-07	00:00	1.3	W
26-Feb-07	01:00	1.3	W
26-Feb-07	02:00	0.4	WSW
26-Feb-07	03:00	0.4	SSW
26-Feb-07	04:00	0.9	SW
26-Feb-07	05:00	0.9	W
26-Feb-07	06:00	1.8	SW
26-Feb-07	07:00	2.7	WSW
26-Feb-07	08:00	2.7	SW
26-Feb-07	09:00	2.7	WSW
26-Feb-07	10:00	2.2	WSW
26-Feb-07	11:00	2.2	WSW
26-Feb-07	12:00	2.2	WSW
26-Feb-07	13:00	2.2	WSW
26-Feb-07	14:00	2.7	WNW
26-Feb-07	15:00	4.0	WNW
26-Feb-07	16:00	4.9	WNW
26-Feb-07	17:00	4.0	WNW
26-Feb-07	18:00	4.5	WNW
26-Feb-07	19:00	3.6	WNW
26-Feb-07	20:00	2.2	WNW
26-Feb-07	21:00	3.6	WNW
26-Feb-07	22:00	3.6	WNW
26-Feb-07	23:00	3.1	WNW
27-Feb-07	00:00	3.1	WNW
27-Feb-07	01:00	2.2	WNW
27-Feb-07	02:00	1.3	SSW

## Appendix F - Wind Data

Date	Time	Wind Speed m/s	Direction
27-Feb-07	03:00	0.9	S
27-Feb-07	04:00	0.0	S
27-Feb-07	05:00	0.0	
27-Feb-07	06:00	0.0	
27-Feb-07	07:00	0.0	SW
27-Feb-07	08:00	0.4	SW
27-Feb-07	09:00	0.9	NW
27-Feb-07	10:00	1.3	SW
27-Feb-07	11:00	0.4	WNW
27-Feb-07	12:00	0.4	NW
27-Feb-07	13:00	0.9	WNW
27-Feb-07	14:00	1.3	WNW
27-Feb-07	15:00	2.2	WNW
27-Feb-07	16:00	3.6	WNW
27-Feb-07	17:00	2.7	WNW
27-Feb-07	18:00	2.2	WNW
27-Feb-07	19:00	1.8	WNW
27-Feb-07	20:00	2.2	WNW
27-Feb-07	21:00	2.2	WNW
27-Feb-07	22:00	1.3	WNW
27-Feb-07	23:00	0.9	WNW
28-Feb-07	00:00	2.7	WNW
28-Feb-07	01:00	0.4	SW
28-Feb-07	02:00	0.0	
28-Feb-07	03:00	0.0	
28-Feb-07	04:00	0.0	
28-Feb-07	05:00	0.0	
28-Feb-07	06:00	0.0	SSE
28-Feb-07	07:00	0.0	
28-Feb-07	08:00	0.0	
28-Feb-07	09:00	0.0	
28-Feb-07	10:00	0.0	
28-Feb-07	11:00	0.0	
28-Feb-07	12:00	0.0	
28-Feb-07	13:00	0.0	
28-Feb-07	14:00	0.0	
28-Feb-07	15:00	0.0	
28-Feb-07	16:00	0.0	W
28-Feb-07	17:00	0.9	NW
28-Feb-07	18:00	2.2	WNW
28-Feb-07	19:00	2.7	WNW
28-Feb-07	20:00	3.1	WNW
28-Feb-07	21:00	2.7	WNW
28-Feb-07	22:00	2.2	NW
28-Feb-07	23:00	2.7	WSW

APPENDIX G NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS

## Appendix G - Noise Monitoring Results

Location N5 - Garden Villa			(Baseline Level : 66.3 dB(A) )			
Data	Time	Weather	dE	3 (A) (30-min	Construction Noise Level	
Date	Date Time		L <sub>eq</sub>	L <sub>10</sub>	L 90	L <sub>eq</sub>
8-Feb-07	09:00	Cloudy	70.7	73.0	66.5	68.7
12-Feb-07	08:05	Sunny	70.6	72.5	67.5	68.6
21-Feb-07	10:30	Cloudy	56.8	58.5	55.0	56.8
		Average	69.0	71.1	65.4	67.0
		Minimum	56.8	58.5	55.0	56.8
		Maximum	70.7	73.0	67.5	68.7

Location N6 - Shatin Heights			(Baseline Level : 70.2 dB(A) )			
Data	Timo	Weather	dE	3 (A) (30-min	)	Construction Noise Level
Date	Date Time		L <sub>eq</sub>	L <sub>10</sub>	L 90	L <sub>eq</sub>
8-Feb-07	10:00	Cloudy	66.6	69.5	63.5	66.6
12-Feb-07	08:40	Sunny	68.7	70.5	67.0	68.7
21-Feb-07	09:45	Cloudy	59.9	63.0	55.5	59.9
		Average	66.4	68.7	64.0	66.4
		Minimum	59.9	63.0	55.5	59.9
		Maximum	68.7	70.5	67.0	68.7

Location N7 -	Lau Pak Lo	k Secondary S	School	(Baseline L	evel : 67.3 d	B(A) )
Data	Time	Weather	dE	3 (A) (30-min	)	Construction Noise Level
Date	Time	weather	L <sub>eq</sub>	L <sub>10</sub>	L 90	L <sub>eq</sub>
8-Feb-07	13:20	Cloudy	68.6	70.5	65.0	62.7
12-Feb-07	10:00	Sunny	67.4	70.5	65.5	51.0
21-Feb-07	13:00	Cloudy	56.1	57.5	53.0	56.1
		Average	66.4	68.8	63.6	59.0
		Minimum	56.1	57.5	53.0	51.0
		Maximum	68.6	70.5	65.5	62.7

Location N8 - Tin Sam Tsuen			(Baseline Level : 72.0 dB(A) )			
Dete	Time	Weather	d	B (A) (30-min	)	Construction Noise Level
Date	Date Time		L <sub>eq</sub>	L <sub>10</sub>	L 90	L <sub>eq</sub>
6-Feb-07	14:15	Cloudy	71.4	74.5	68.0	71.4
12-Feb-07	11:15	Sunny	66.7	69.0	63.5	66.7
21-Feb-07	16:50	Cloudy	60.1	63.0	53.5	60.1
		Average	68.1	71.0	64.7	68.1
		Minimum	60.1	63.0	53.5	60.1
		Maximum	71.4	74.5	68.0	71.4

<sup>#</sup> Construction Noise Level = Measured Noise Level - Baseline Noise Level (or equal to measured noise level when less than baseline)

## Restricted Hours\* - Noise Monitoring Results

Location N5 - Garden Villa			(Baseline Level : 60.0 dB(A) )		
Dete	Time	\\/aathar	dl	3 (A) (5-min)	
Date	Time	Weather	L <sub>eq</sub>	L <sub>10</sub>	L 90
	09:45		57.8	62.0	53.0
4-Feb-07	09:50	Sunny	57.6	62.0	53.0
	09:55		57.1	62.0	53.0
	19:10		58.4	60.5	54.5
8-Feb-07	19:15	Cloudy	58.1	61.0	54.5
	19:20		58.1	61.0	55.0
	10:10		58.5	63.0	54.0
11-Feb-07	10:15	Sunny	58.6	63.0	54.5
	10:20	•	58.6	63.0	54.5
	19:30	Cloudy	57.6	60.0	54.0
12-Feb-07	19:35		57.4	60.0	53.5
	19:40		57.6	60.0	54.0
	09:30		56.7	61.0	51.0
18-Feb-07	09:35	Sunny	56.8	61.0	51.5
	09:40		56.8	61.0	51.0
	19:00		59.7	61.0	56.0
21-Feb-07	19:05	Cloudy	59.5	61.0	56.5
	19:10		58.7	60.5	56.0
	10:00	_	57.0	62.5	52.0
25-Feb-07	10:05	Sunny	57.7	63.5	52.0
	10:10		57.7	63.5	52.0
		Average	58.0	61.7	53.9
		Minimum	56.7	60.0	51.0
		Maximum	59.7	63.5	56.5

<sup>\*</sup>Remarks: - 07:00 - 23:00 hrs holidays & 19:00 - 23:00 hrs on all other days

## Restricted Hours\* - Noise Monitoring Results

Location N6 - Shatin Heights			(Baseline Lev	el : 65.0 dB	(A) )
Date	Time	Weather	dl	3 (A) (5-min)	
Date	Time	vveatriei	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
	19:50		57.9	60.5	54.0
8-Feb-07	19:55	Cloudy	58.1	61.5	54.5
	20:00		57.6	61.0	54.5
	20:15		58.8	60.5	56.5
12-Feb-07	20:20	Cloudy	58.6	60.0	56.0
	20:25		58.5	60.0	56.0
	19:45		57.3	59.5	55.5
21-Feb-07	19:50	Cloudy	56.8	59.0	55.5
	19:55		57.1	59.0	55.5
	_	Average	57.9	60.2	55.4
		Minimum	56.8	59.0	54.0
		Maximum	56.8	59.0	54.0

<sup>\*</sup>Remarks: - 19:00 to 23:00 on normal weekdays

<sup>- 23:00 - 07:00</sup> of next day

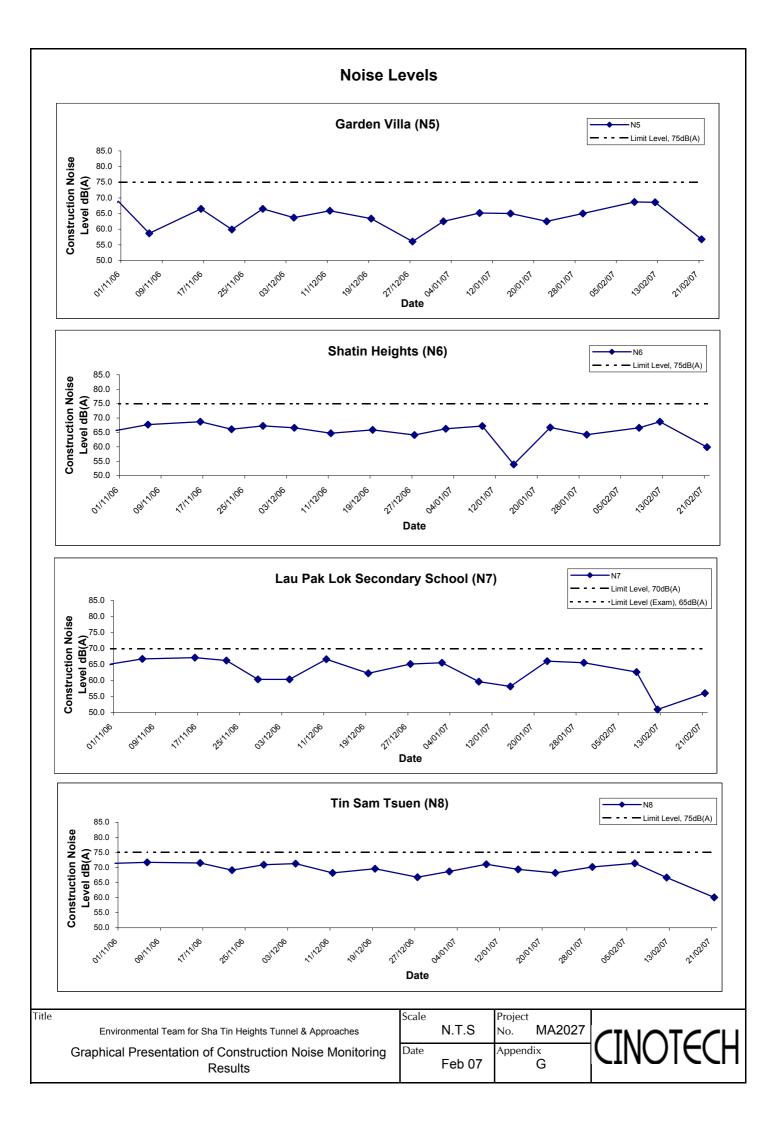
## Restricted Hours\* - Noise Monitoring Results

Location N5 - Garden Villa			(Baseline Lev	rel : 50.6 ~ 6	7.1 dB(A) )
Date	Time	Weather	dB (A) (5-min)		
Date	Time	vveatriei	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
	23:50		53.7	58.0	50.5
8-Feb-07	23:55	Cloudy	53.9	58.0	50.5
	00:00		53.9	58.0	50.5
	23:50	Cloudy	53.8	57.5	50.0
12-Feb-07	23:55		53.8	57.5	50.0
	00:00		54.2	58.0	50.5
	23:50		54.8	57.0	50.0
21-Feb-07	23:55	Cloudy	54.7	57.0	50.5
	00:00		54.4	57.0	50.0
		Average	54.2	57.6	50.3
		Minimum	53.7	57.0	50.0
		Maximum	54.8	58.0	50.5

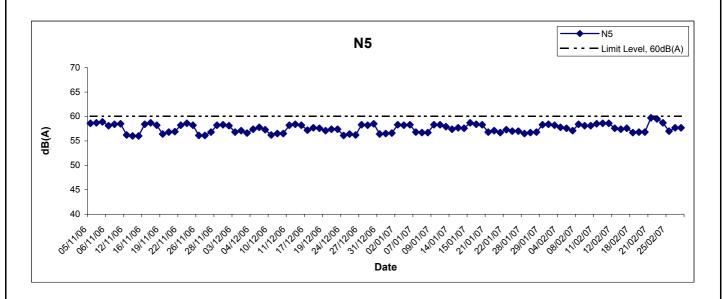
Location N6 -	Location N6 - Shatin Heights			⁄el : 52.4 ~ 6	8.9 dB(A) )
Date	Time	Weather	dB (A) (5-min)		
Date	Time	weather	L <sub>eq</sub>	L <sub>10</sub>	L 90
	23:00		57.3	60.0	53.5
8-Feb-07	23:05	Cloudy	57.4	60.5	53.5
	23:10		57.8	60.5	53.5
	23:00		56.2	60.0	52.5
12-Feb-07	23:05	Cloudy	56.8	60.0	52.5
	23:10		56.5	60.0	52.5
	23:00		56.8	59.0	52.5
21-Feb-07	23:05	Cloudy	56.3	59.0	52.0
	23:10		56.4	59.0	52.0
	_	Average	56.9	59.8	52.8
		Minimum	56.2	59.0	52.0
		Maximum	57.8	60.5	53.5

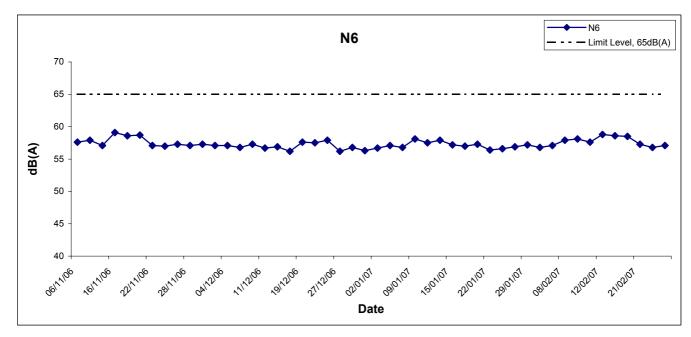
<sup>\*</sup>Remarks: - 23:00 to 07:00 on normal weekdays

<sup>-</sup>The noise monitoring results are well within the range of Baseline Monitoring Level and there is no evidence showing that the dominant noise was generated from the construction activities.



## **Restricted Hours** - Noise Levels





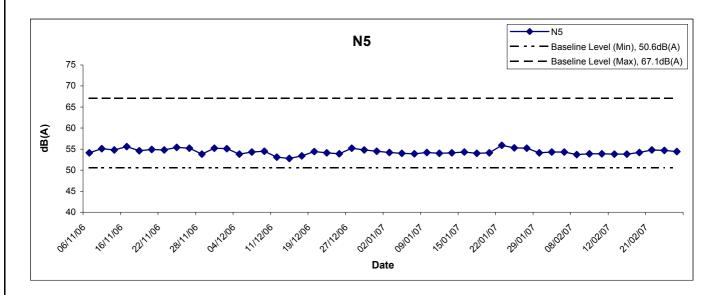
<sup>\*</sup>Remarks: - 19:00 to 23:00 on normal weekdays - 07:00 to 23:00 on Holidays

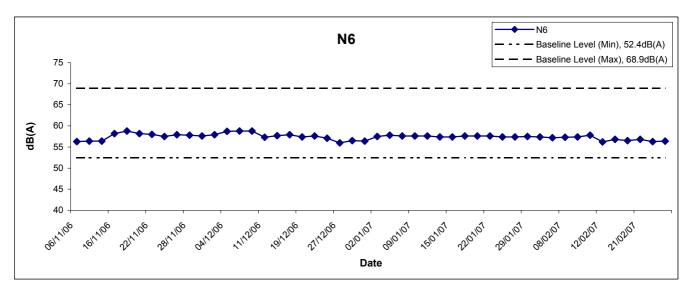
Litle	
	Environmental Team for Sha Tin Heights Tunnel & Approaches
	Graphical Presentation of Construction Noise Monitoring
	Results

Scale	— .	Project No. MA2027
Date		Appendix
	Feb 07	G



## **Restricted Hours** - Noise Levels





<sup>\*</sup>Remarks: - 23:00 to 07:00 on normal weekdays

Litle	
	Environmental Team for Sha Tin Heights Tunnel & Approaches
	Graphical Presentation of Construction Noise Monitoring
	Results

Scale	N.T.S	Project No. MA2027
Date		Appendix
	Feb 07	G



## APPENDIX H SUMMARY OF EXCEEDANCES

## **Summary of Exceedances Recorded in the Reporting Month**

- a) Exceedance Report for 1-hr TSP: NIL
- b) Exceedance Report for 24-hr TSP: NIL
- c) Exceedance Report for Construction Noise: NIL
- No Action / Limit level exceedance was recorded in the reporting month.

## APPENDIX I SITE AUDIT SUMMARY

## Sha Tin Heights Tunnel and Approaches

## Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	70201
Date	1 February 2007
Time	09:00 - 11:00 (a.m.)

Non-Compliance	Reference No.
None	

#### Remarks/Observations

## A. Water Quality

No environmental deficiency was identified during the environmental site inspection.

#### B. Air Quality

No environmental deficiency was identified during the environmental site inspection.

#### C. Noise

No environmental deficiency was identified during the environmental site inspection.

## D. Waste / Chemical Management

 A drum of diesel oil without cover provided was observed at Garden Villa. The Contractor was reminded to provide a cover for the drum which should be stored in a sealed drip tray.

1

## E. Permit / Licenses

No environmental deficiency was identified during the environmental site inspection.

#### F. Others

 Follow-up on previous site audit session (Ref. No. 70125), all environmental deficiencies were rectified by the Contractor

#### Reminders:

	Name	Signature	Date
Recorded by	Tommy Ho	Ten	6 February 2007
Checked by	Mitch Law	Whil	6 February 2007

CINOTECH MA2027 70201

## Sha Tin New Town, Stage II Contract No. ST 89/02

## Sha Tin Heights Tunnel and Approaches

## Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number 70208	
Date	8 February 2007
Time	09:00 - 10:30 (a.m.)

Non-Compliance	Reference No.
None	2

## Remarks/Observations

## A. Water Quality

No environmental deficiency was identified during the environmental site inspection.

## B. Air Quality

• No environmental deficiency was identified during the environmental site inspection.

## C. Noise

• No environmental deficiency was identified during the environmental site inspection.

## D. Waste / Chemical Management

• No environmental deficiency was identified during the environmental site inspection.

#### E. Permit / Licenses

· No environmental deficiency was identified during the environmental site inspection.

## F. Others

 Follow-up on previous site audit session (Ref. No. 70201), all environmental deficiencies were rectified by the Contractor

#### Reminders:

W55567	Name	Sig <del>na</del> ture	Date
Recorded by	Ray Yan	Kan.	8 February 2007
Checked by	Gerald Kam	Ħ	8 February 2007

CINOTECH MA2027 70208

## Sha Tin New Town, Stage II Contract No. ST 89/02

## Sha Tin Heights Tunnel and Approaches

## Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number 70215		
Date	15 February 2007	
Time	09:30 - 11:00 (a.m.)	

Non-Compliance	Reference No.
None	100 A

## Remarks/Observations

## A. Water Quality

• No environmental deficiency was identified during the environmental site inspection.

## B. Air Quality

• No environmental deficiency was identified during the environmental site inspection.

#### C. Noise

• No environmental deficiency was identified during the environmental site inspection.

## D. Waste / Chemical Management

No environmental deficiency was identified during the environmental site inspection.

#### E. Permit / Licenses

No environmental deficiency was identified during the environmental site inspection.

## F. Others

 Follow-up on previous site audit session (Ref. No. 70208), all environmental deficiencies were rectified by the Contractor

Reminders:	

	Name	Signature	Date
Recorded by	Stanley Liu	Stanley	15 February 2007
Checked by	Edmond Wu	252	15 February 2007

CINOTECH MA2027 70215.doc

## Sha Tin New Town, Stage II Contract No. ST 89/02

## Sha Tin Heights Tunnel and Approaches

## Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	70222
Date	22 February 2007
Time	09:00 – 11:00 (a.m.)

Non-Compliance	Reference No.
None	 -

## Remarks/Observations

## A. Water Quality

No environmental deficiency was identified during the environmental site inspection.

## B. Air Quality

• No environmental deficiency was identified during the environmental site inspection.

#### C. Noise

• No environmental deficiency was identified during the environmental site inspection.

#### D. Waste / Chemical Management

• Some construction wastes were spread on bare ground at Abatement 1 enclosure. The contractor was reminded to clean it up.

4 ii

## E. Permit / Licenses

No environmental deficiency was identified during the environmental site inspection.

## F. Others

No environmental deficiency was identified in the last audit (ref. 70115).

Reminders:	

	Name	Signature	Date
Recorded by	Stanley Liu	Stanley	22 February 2007
Checked by	Priscilla Choy	WIL	22 February 2007

CINOTECH MA2027 70222

APPENDIX J SUMMARY OF AMOUNT OF WASTE GENERATED

## Appendix J

Name of Department: CEDD	Contract No.:	ST89/02

# Monthly Summary Waste Flow Table For Feb 2007 (year)

	Actua	l Quantities of Ir	nert C&D Materi	als Generated Mo	onthly	A	ctual Quantities	of C&D Waste (	Generated Month	nly
Month	Total Quantity Generated	Broken Concrete (see Note 4)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
Jan	3.486	0.341	3.145	0.000	0.000	5.633	0.165	0.000	1.623	0.090
Feb	2.324	0.049	2.257	0.018	0.000	0.000	0.120	0.000	0.000	0.040
Mar										
Apr										
May										
June										
Sub-total	5.810	0.390	5.402	0.018	0.000	5.633	0.285	0.000	1.623	0.130
July										
Aug										
Sept										
Oct										
Nov										
Dec										
Total	5.810	0.390	5.402	0.018	0.000	5.633	0.285	0.000	1.623	0.130

Notes:

- (1) The performance targets are given in PS Sub-clause 2(5) (c).
- (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (4) Broken concrete for recycling into aggregates.

APPENDIX K SUMMARY OF ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE Appendix K - Summary of Environmental Mitigation Implementation Schedule

Types of Impacts	Mitigation Measures	Status
	• Any stockpile of dusty materials or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet.	^
	A stockpile of dusty materials should not extend beyond the pedestrian barriers, fencing or traffic cones.	^
	Vehicle washing facilities should be provided at every exit point.	^
	• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	^
	• Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit.	^
<b>Construction Dust</b>	• Every main haul road should be sprayed with water or a dust suppression chemical so as to maintain the entire road surface wet.	^
	• The portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit should be kept clear of dusty materials.	^
	• Any stockpile of dusty materials should be either covered entirely be impervious sheeting, placed in an area sheltered on the top and the 3 sides or sprayed with water or a dust suppression chemical so as to maintain the entire surface wet.	^
	• All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.	^
	<ul> <li>Every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving a construction site.</li> </ul>	^
	• The working area of any excavation should be sprayed with water or a dust suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet.	^
	• Only well-maintained plant should be operated on –site and plant should be serviced regularly during the construction works.	^
	• Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	^
	• Plant know to emit noise strongly in one direction, should where possible, be orientated to direct noise away from the NSRS.	^
Construction	Mobile plant should be sited as far away from NSRs as possible.	^
Noise	<ul> <li>Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>	^
	Use quite plant and Working Method	^
	Reduce the number of plant operating in critical areas close NSRs.	^
	Construct temporary and movable noise barriers	^

<b>Types of Impacts</b>	Mitigation Measures	Status
Water Quality	Construction Runoff and Drainage	
	<ul> <li>Use of sediment traps and the adequate maintenance of drainage systems to prevent flooding and overflow.</li> </ul>	^
	<ul> <li>Boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection.</li> <li>Temporary ditches should be provided to facilities runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates.</li> </ul>	^
	<ul> <li>All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment traps should be regularly cleaned and maintained. The temporarily diverted drainage should be reinstated to its original condition when the construction works has finished or the temporary diversion is no longer required</li> </ul>	^
	• Sand silt in the wash water from the wheel washing facilities, which ensure no earth, mud and debris is deposited on roads, should be settled out the removed before discharging into storm drains. A section of the road between the wheel washing bay and the public road should be paved with backfill to prevent wash water or other site runoff form entering public road drains.	^
	<ul> <li>Oil interceptors should be provided in the drainage system and regularly emptied to prevent the release of oils and grease into the storm water drainage system after accidental spillage. The interceptor should have a bypass to prevent flushing during periods of heavy rain.</li> </ul>	^
	• Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks.	^
	• Silt removal facilities, channels and manholes shall be suitably maintained with the deposited silt and grit being removed at least once a week, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	^
	• Earthworks final surfaces shall be well compacted and the subsequent permanent work or surface protection shall be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate intercepting channels shall be provided along the site boundary or at the locations agreed with the ET Leader. Rainwater pumped out from trenches or foundation excavations shall be discharged into silt removal facilities before discharge into storm drains.	^
	• All generators, fuel and oil storage shall be within bunded areas. Drainage from the areas shall be connected to storm drains via a petrol interceptor.	^
	Tunnelling Work	
	<ul> <li>Temporary open storage of excavated materials should be covered with tarpaulin or similar fabric during rainstorms. Any washout of construction or excavated materials form the drill and blast tunnelling work should be diverted to the drainage system via appropriate sediment traps.</li> </ul>	^
	<ul> <li>Ground water pumped out of tunnels should be discharged into the drainage channels which incorporated sediment traps to enhance deposition rates and to remove silt.</li> </ul>	^
	<ul> <li>Spend grouts used in diaphragm wall construction should be collected in a separate slurry collection system, reconditioned and reused wherever practicable. The disposal of used grouting materials will only be permitted if it is treated to the TM standards before discharge to the storm drains or disposal to landfill.</li> </ul>	N/A

<b>Types of Impacts</b>	Mitigation Measures	Status							
	General Construction Activities								
	<ul> <li>Debris and rubbish on site should be collected, handled and disposed of properly to avoid entering the water column and cause water quality impacts.</li> </ul>	^							
	• All fuel tanks and storage areas will be provided with locks and be located on sealed areas (within bunds of a capacity equation 110% of the storage capacity of the largest tank or 20% by volume of the fuel stored in that areas, whichever in the greatest).								
	Sewage Effluent								
	• Construction work force sewage discharges form fixed toilet facilities on-site should be connected to the nearby existing trunk sewer wherever feasible. However, for areas where existing trunk sewer is not available, it is recommended that appropriate and adequate on site portable chemical toilets should be provided by a licensed contractor who will be responsible for appropriate disposal and maintenance of these facilities.	^							
	• It is considered that sewage discharges could also be treated by on-site septic tanks and soakaway. Minimum clearance away form streams and catchments and other requirements for the proposed septic tank and soakaway should be referred to EPD's Practice Note for Professional Persons, Drainage Plans.	N/A							
Waste	General								
	• Training and instruction shall be given at a site to construction staff to increase awareness and draw attention to waste management issues and the need to minimise waste generation. The training requirement shall be included in the site waste management plan.	^							
	Storage, Collection and Transportation of Waste								
	Wastes shall be handled and stored in a manner to ensure that they are held securely without loss or leakage.	^							
	<ul> <li>Authorised or licensed waste hauliers shall be used and they shall only collect wastes prescribed by their permits.</li> </ul>	^							
	Waste shall be removed on a daily basis.	^							
	Waste storage area shall be maintained and cleaned on a daily basis.	^							
	<ul> <li>Windblown litter and dust during transportation shall be minimised by either covering trucks or transporting wastes in enclosed containers.</li> </ul>	^							
	Obtain necessary waste disposal permits from the appropriate authorities if they are required.	^							
	Wastes shall be disposed of at licensed waste disposal facilities.	^							
	• Develop procedure such as ticketing system to facilitate tracking of loads, particularly for chemical waste, and to ensure that illegal disposal of wastes does not occur.	^							
	Maintain records of the quantities of wastes generated, recycled and disposed.	^							
	Surplus Excavated Materials								
	Due to the high risk of loose material being washed into the existing nullah, stockpile materials should be properly compacted and covered from water erosion and located at least 10 away from the nullah wall.	N/A							
	Construction and Demolition (C&D) Waste								

Types of Impacts	Mitigation Measures	Status						
	Careful design, planning and good site management shall be adopted to minimise over-ordering and generation of waste	^						
	materials such as concrete grouts.							
	<ul> <li>The handling and disposal of bentonite slurries shall be undertaken in accordance with Practice Note for Professional Persons – Construction Site Drainage (ProPECC PN 1/94) on construction site drainage.</li> </ul>							
	• Construction and demolition (C&D) material shall be segregated to inert and non-inert parts. The inert portion shall re-used at areas of reclamation or land formation, or to public filling area shall such allocation is deemed necessary. The non-inert portion shall be disposed of to landfill.	^						
	Chemical Waste							
	<ul> <li>Chemical waste that is produce during construction shall be handled in accordance with the Cod of Practice on the Packaging, Handling and Storage of Chemical Wastes.</li> </ul>	^						
	Containers used for the storage of chemical wastes should:							
	<ul> <li>Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> </ul>	^						
	<ul><li>b. Have a capacity of less than 450 litres unless the specifications have been approved by the EPD;</li><li>c. Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste Regulations.</li></ul>							
	<ul> <li>The storage area for chemical wastes should:</li> <li>a. Be clearly labelled and used solely for the storage of chemical waste;</li> <li>b. Be enclosed on at least 3 sides;</li> </ul>							
	<ul> <li>c. Have an impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is largest;</li> <li>d. Have adequate ventilation;</li> </ul>	^						
	<ul><li>e. Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary);</li><li>f. Be arranged so that incompatible materials are adequately separated.</li></ul>							
	<ul> <li>Disposal of chemical waste shall be via a licensed waste collector; and to a facility licensed to receive chemical waste; or a reuser of the waste (under approval from EPD).</li> </ul>	^						
	General Refuse							
	<ul> <li>General refuse generated on-site shall be stored in enclosed bins or compaction unit separate from C&amp;D and chemical wastes. A reputable waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&amp;D and chemical wastes, on a daily for every second day basis to minimise odour, pest and litter impacts. The burning of refuse on construction sites is prohibited by law.</li> </ul>	^						
	Reusable rather than disposable dishware shall be used if feasible.	N/A						
Ecology	<ul> <li>A sediment barrier shall be erected to minimize stream sedimentation at downstream of the project boundary of the Toll Plaza.</li> </ul>	^						

<b>Types of Impacts</b>	Mitigation Measures	Status
	Conduct a tree survey before commencement of the construction work.	^
	• All measures recommended in the approved landscape proposals under Condition 2.4 in EP above shall be fully implemented in accordance with the details and time schedule set out in the submission.	N/A
	<ul> <li>Loss of the adjacent woodland due to temporary land take shall be returned to the original status immediately.</li> </ul>	N/A
	Wild and uncontrolled fire shall be strictly prohibited	^
	• Fences shall be erected along the boundary of the construction sites at the Toll Plaza before commencement of works, to prevent tipping, vehicle movements, and encroachment of personnel onto adjacent wooded areas.	N/A
	• Landscape mitigation measure 1 (LMM1) – Construction programming and management. The periphery of the works areas at street level shall be managed so that they do not appear cluttered, untidy and unattractive and inconvenient to pedestrians. For example, all hoarding shall be colorfully designed with interesting motifs demonstrating the work of Highways Department. Hoardings with bland colours shall be avoided.	N/A
Landscape and Visual Impact	• Landscape mitigation measure 2 (LMM2) – Advanced planting and erosion control works. Where possible, the transplantation of existing valuable trees, the stockpiling of topsoil, new planting and erosion control works shall be carried out as early as possible in the construction period instead of at the end. This will assist in maximizing the time for carrying out transplantation and new planting, resulting in a higher success rate for the survival of transplantation and new planting, resulting in a higher success rate for the survival of transplanted trees and the establishment of new screen trees. The stockpiling of topsoil will provide an abundant use of on-site material for growing media. During detailed design, the issue of stockpiling of topsoil in a manner that would avoid washing into the drainage scheme should be examined comprehensively.	N/A
	Measurement of vibration would also be carried out on a need basis during the piling work	N/A

Remarks:

Compliance of mitigation measure; Not Applicable;  $\wedge$ N/A

Non-compliance of mitigation measure; Non-compliance but rectified by the Contractor X

## APPENDIX L EVENT ACTION PLANS

## **Appendix L - Event Action Plans**

## **Event/Action Plan for Air Quality**

EVENT		AC	ΓΙΟΝ	
EVENT	ET	IEC	ER	Contractor
ACTION LEVEL				
1. Exceedance	1. Identify source	1. Check monitoring data	1. Notify Contractor	1. Rectify any
for one sample	2. Inform ER & IEC	submitted by ET	2. Check monitoring data	unacceptable practice
	3. Repeat measurement	2. Check Contractor's	and Contractor's	2. Amend working
	to confirm finding	working methods	working methods	methods if appropriate
	4. Increase monitoring			
	frequency to daily			
2. Exceedance for	1. Identify source	1. Checking monitoring	1. Confirm receipt of	1. Submit proposals for
two or more	2. Inform ER & IEC	data submitted by ET	notification of failure in	remedial actions to
consecutive	3. Repeat measurement	2. Check Contractor's	writing	ER within 3 working
samples	to confirm findings	working methods	2. Notify Contractor	days of notification
	4. Increase monitoring	3. Discuss with ET and	3. Check Contractor's	2. Implement the agreed
	frequency to daily	Contractor on possible	working methods	proposals
	5. Discuss with ER & for	remedial measure	4. Discuss with ET, IEC	3. Amend proposal if
	remedial actions	4. Advise the ER & ET	and Contractor on	appropriate
	required	on the effectiveness of	proposed remedial	
	6. If exceedance	the proposed remedial	actions	
	continues, arrange	measures	5. Ensure remedial actions	
	meeting with ER &	5. Supervise the	properly implemented	
	IEC	implementation of the		
	7. If exceedance stops,	remedial measures		
	cease additional			
	monitoring			
LIMIT LEVEL				
1. Exceedance for	1. Identify source	1. Checking monitoring	1. Confirm receipt of	1. Take immediate action
one sample	2. Inform ER & IEC and	data submitted by ET	notification of failure in	to avoid further
	EPD	2. Check Contractor's	writing	exceedance
	3. Repeat measurement	working methods	2. Notify Contractor	2. Submit proposals for
	to confirm finding	3. Discuss with ET and	3. Check Contractor's	remedial actions to
	4. Increase monitoring	Contractor on possible	working methods	ER within 3 working
	frequency to daily	remedial measure	4. Discuss with ET, IEC	days of notification
	5. Assess effectiveness	4. Advise the ER & ET	and Contractor on	3. Implement the agreed
	of Contractor's	on the effectiveness of	proposed remedial	proposals
	remedial actions and	the proposed remedial	actions	4. Amend proposal if
	keep EPD and ER &	measures	5. Ensure remedial actions	appropriate

EVENT		AC	ΓΙΟΝ	
EVENT	ET	IEC	ER	Contractor
	IEC informed of the results	5. Supervise the implementation of the remedial measures	properly implemented	
2. Exceedance for	1. Identify source	1. Checking monitoring	1. Confirm receipt of	1. Take immediate action
two or more	2. Inform ER, IEC,	data submitted by ET	notification of failure in	to avoid further
consecutive	Contractor and EPD	2. Discuss amongst ER,	writing	exceedance
samples	the cause & actions	ET and Contractor on	2. Notify Contractor	2. Submit proposals for
	taken for the	possible remedial	3. Carry out analysis of	remedial actions to
	exceedances	measures	Contractor's working	IEC, ER within 3
	3. Repeat measurement	3. Review Contractor's	procedures to determine	working days of
	to confirm findings	remedial measures	possible mitigation to	notification
	4. Increase monitoring	whenever necessary to	be implemented	3. Implement the agreed
	frequency to daily	ensure their	4. Discuss amongst ET,	proposals
	5. Investigate the causes	effectiveness and	IEC and the Contractor	4. Resubmit proposals if
	of exceedance	advise the ER	on proposed remedial	problem still not
	6. Carry out analysis of	accordingly	actions	under control
	contractor's working	4. Supervise the	5. In consultation with	5. Stop the relevant
	procedures to	implementation of the	IEC, agree with the	portion of works as
	determine possible	remedial measures	contractor remedial	determined by the ER
	mitigation to be		measures to be	until the exceedance is
	implemented.		implemented	abated
	7. Arrange meeting with		6. Ensure remedial	
	EPD, IEC and ER to		measure are properly	
	discuss the remedial		implemented	
	actions to be taken		7. If exceedance	
	8. Assess effectiveness		continues, consider	
	of Contractor's		what portion of the	
	remedial actions and		work is responsible and	
	keep EPD and ER &		instruct the Contractor	
	IEC informed of the		to stop that portion of	
	results		work until the	
	9. If exceedance stops,		exceedance is abated	
	cease additional			
	monitoring			

## **Event/Action Plan for Construction Noise**

г 1		ACT	ΓΙΟΝ	
Exceedance	ET	IEC	ER	Contractor
ACTION LEVEL	Discuss with the IEC and ER and seek to identify potential noise source      Undertake noise measurement to confirm the validity of complaint	1. Review the analyzed results submitted by the ET  2. Review the proposed remedial measures by the Contractor and advise the ER & ET accordingly	Confirm receipt     of notification of     complaint and     notify Contractor     immediately     Check monitoring     data trends and     Contractor's     working methods	Submit proposals for remedial actions to ER within three working days of notification      Amend proposals if required by the Engineer
	3. Inform ER&IEC in writing Discuss remedial actions required with ER&IEC if an exceedance is recorded	3. Supervise the implementation of remedial measures	3. Remind the Contractor of his contractual obligations and discuss with ET, IEC and Contractor on proposed remedial actions	3. Implement the remedial actions immediately upon instruction
	4. Increase monitoring frequency to demonstrate efficacy of remedial measures		4. Assess the efficacy of remedial actions and keep the Contractor informed	4. Liaise with the ER to optimize the effectiveness of the agreed mitigation
	5. If exceedance continues, meet with ER&IEC to review implementation of appropriate mitigation measures 6. If exceedance stops, cease additional monitoring		5. Inform complainant of actions taken	5. Amend proposal if appropriate

Exceedance		A	CTION	
Exceedance	ET	IEC	ER	Contractor
LIMIT LEVEL	Repeat     measurement to     confirm findings	Check     monitoring data     submitted by ET	Confirm receipt of     notification of     exceedance and     notify Contractor	Take immediate     action to avoid     further exceedance
	2. Investigate the cause of the exceedance and identify the main source(s) of impact	2. Review Contractor's remedial actions to assure their effectiveness and advise the ER	2. Check monitoring data trends and Contractor's working methods	2. Submit proposals for remedial actions to ER immediately not more than 3 working days of notification
	3. Inform ER&IEC and EPD in writing	&ET accordingly  3. Supervise the implementation of the remedial measures	3. Discuss with ET, IEC and Contractor on proposed remedial actions to be	3. Amend proposals if required by the ER
	4. Discuss remedial actions required with ER&IEC		implemented 4. Assess the efficacy of remedial actions and keep the Contractor informed	4. Implement remedial actions immediately upon instruction
	5. Increase monitoring frequency to demonstrate efficacy of remedial measures		5. If exceedance continuous, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is	5. Liaise with the ER to optimize the effectiveness of the agreed mitigation
			exceedance is aborted	

Europadanaa	ACTION							
Exceedance	ET	IEC	ER	Contractor				
LIMIT LEVEL	6. Assess efficacy of remedial actions and keep ER & IEC informed of the results			6. Resubmit proposals if problem still not under control				
	7. If exceedance continues, meet with ER&IEC to identify appropriate mitigation measures 8. If exceedance stops, cease additional monitoring			7. Stop the relevant portion of works as determined by the ER until the exceedance is aborted				

# APPENDIX M CONSTRUCTION PROGRAMME

Activity	Activity	Orig	Current	Current	15FEB07			0007		
ID ID	Description	Dur	Projected Start	Projected Finish	Total Float	FEB		2007 MAR	APR	MAY
SECTION YVI	- REMAINDER OF WORKS (4 SEP 06)		Ottalit	1 1111311	Tiout	120		MOD	AFIX	mA1
	TION & SLOPE WORKS									
Slope 7SW-D										
SB3547C	Back Filling from +102mPD	6	28/07/06A	21/02/07	-146	Back Filing fr	om +102mPD			
SB3546	U-Channel construction	6	22/02/07	28/02/07	-146		U-Channel constru	ction		
SB3548	Planting works - 7SW-D/FR5	6	22/02/07	28/02/07	-146		Planting works - 78	SW-D/FRS		
SB3572	Slope 7SW-D/FR5 Complete	0		28/02/07	-146	•	Slope 7SW-D/FRS	5 Complete		
Slope D/F478										
NP2634	VO186 - 7SW-D/F478 upgrading	72	21/02/06A	28/02/07	-146		VO185 - 79W-D/F	478 upgrading		
Portion 15 Ar	rea									
NP3620	Concrete Footpath	6	15/02/07	21/02/07	-140	Concrete Foo				
NP3630	FTNS & other utilities construction	6	15/02/07	21/02/07	-140	FTNS & other	utilities construction	on		
RETAINING S	TRUCTURES									
RE Wall 1,2 a	nd 3 in RC Enclosure Area									
	I									
NP2870	RE Wall AR/E/03 + APF1	24	02/05/06A	21/02/07	-147	RE Wall AR/E				
NP2880E	RE Wall AR/E/02 + APF1	12	31/07/06A	21/02/07	-147	RE Wall ARVE				
NP2890	RE Wall AR/E/01 (Part 1) + APF2	12	31/07/06A	21/02/07	-147		/01 (Part 1) + APF Wall 1,2,3,4 - copir			
NP2872	RE Wall 1,2,3,4 - coping	6	20/02/07	26/02/07	-147	N.E	RE Wall 1.2,3,4 -			
NP2873	RE Wall 1,2,3,4 - railing	6	23/02/07	01/03/07	-147			H to 03 at RC Enclosure Complete		
NP2880	RE Wall AR/E/01 to 03 at RC Enclosure Complete	0		01/03/07	-147		THE WAITHGOOD	i to us at No Enclusive Complete		
	TRUCTURES									
RCE: Roadwo	orks, Cladding, Int. / Ext. Finishes									
NP2296	Bituminous Road Pavement : Wearing course	18	17/07/06A	21/02/07	-140	Bituminous R	pad Pavement : We	earing course		
NP2298	Road Markings and Road Furnitures	6	15/02/07	21/02/07	-140		s and Road Fumiti	_		
	ENSTRUCTURE		10/02/07	21/02/01	-140					
Road Works	ENSTRUCTORE									
Road Works										
AB1590	Bridge S2- Bituminous Surfacing, Final Course	6	15/02/07	21/02/07	-146	Bridge S2- Bit	uminous Surfacing	, Final Course		
AB1602	Bridge S1- Road Marking + Signs	6	15/02/07*	21/02/07	-148	Bridge S1- Ro	ad Marking + Sign	s		
AB1604	Bridge N1- Bituminous Surfacing, Final Course	6	15/02/07	21/02/07	-146	Bridge N1- Bi	uminous Surfacing	, Final Course		
AB1606	Bridge N1- Road Marking + Signs	6	15/02/07	21/02/07	-140	Bridge N1- Ro	ad Marking + Sign	s		
AB1592	Bridge N2- Bituminous Surfacing, Final Course	6	22/02/07	28/02/07	-146		Bridge N2- Bitumin	ous Surfacing, Final Course		
ABCK7870	Bridge N2- Road Marking + Signs	6	22/02/07	28/02/07*	-146		Bridge N2- Road N	fanking + Signs		
ABCK7872	Bridge S2- Road Marking + Signs	6	22/02/07	28/02/07	-146		Bridge \$2- Road M	farking + Signs		
Start Date	18/11/02 Based on 0	Surrent P	rogress WD98		CSC	CRJV	Sheet 1 of 2		Prepared by WC /Works Department	 - toward
Finish Date Data Date	14/03/07 15/02/07 Progress 8					89/02		Date 15/33/17 Progress Update Schooled from Clause 18 Revision 107	nest #	 Opposite Control
Dava Date	130207		F			s Rolling Programs ng Programme to 1		BOY SH INCLUDED		
@ Prim:	avera Systems, Inc.		'			Clause 16 Rev "K"	10.02.01			
- THIN										

Activity	Activity	Orig	Current	Current	15FEB07			0007			
ID	Description	Dur	Projected Start	Projected Finish	Total Float	FEB		2007 MAR	APR	MA	AY
NB7 Type 1.	N2, NS2/1 to NS2/5, L=232m					123		mr u c	7		
Bridge N2											
AB2814	NB7 Type 1 - install panel, Span 1 and 2	16	17/08/06A	17/02/07	-137	NB7 Type 1 - Install (	anel, Span 1 and	2			
NB9 Type 4, I	Bridge \$2, Ret Wall 4, L= 56m										
Bridge S2											
AB2850	NB9 Type 4 - install panel, RW4 area	18	09/08/06A	17/02/07	-137	NB9 Type 4 - Install p	anel, RW4 area				
ROADWORK!	5										
Road Works											
ABCK7558E		48	24/05/06A	21/02/07	-140	Concrete Foo	path + Paving Bio				
ABCK7556C	,	30	21/07/06A	28/02/07	-146			minous Pavement (CKMR)			
	Railing + Untensioned safety fence	30	29/07/06A	27/02/07	-145	R	alling + Untensions	ed safety fence			
NB6-3, Type	1 RW 5, CKMR SB area) L=180m										
LEVOVO	Inno and the state of the state	145	47100105	45.00.00	405						
AB1948	NB6-3 Type 1 - install panel, RW5 area	12	17/08/06A	15/02/07	-135	NB6-3 Type 1 - Install pa	nei, RWS area				
Road Works	in North Portal Approach Area										
	has tarring and	1.0	001101001	00.00.00			ND Annmach Dd -	- Landscape Softworks			
NP2480E	NP Approach Rd - Landscape Softworks	12	22/12/06A	28/02/07	-146						
NP3650	Railing + untensioned safety fence	12	22/12/06A	28/02/07	-146		Railing + untensio Boundary fence in				
NP3660	Boundary fence installation	12	22/12/06A	28/02/07	-146		Boundary rence in	research .			
NOISE BARR											
	(Bridge N1 to Abut 1)L = 100m										
Bridge N1 AB0860	NB1 Type 3 - install panels (80m)	15	16/08/06A	20/02/07	-139	NR1 Type 3 - In	stali panels (80m)				
	N1/S1.L=75m, W=20m, H=5.5m + Alum Cl	10	TOVOOVOOA	20/02/07	-138	TOT TIPE 5 T	aun panca (com)	'			
Noise Enclos											
AB2320	Noise Enclosure Panel Installation	12	23/12/06A	15/02/07	-135	Noise Enclosure Panel In	staliation				
SECTION CO		1.2	20/12/00/1	TOTOLIOT	100						
	mpletion Date(SA6+EOT AWARD 27)										
CONTRACT CON	inpletion bate(3A0+EO+A4ARD 27)										
CONP3170	Section XVI (Remainder of Works)	0		01/03/07*	-178		◆Section XVI (Ra	emainder of Works)			
100111101110	Control ( Control of Trollo)			0 1100101				-			
Clast Dat-	40/44/03		W098			OD 11/	Sheet 2 of 2	1	Prepared by WC /Works Department		
Start Date Finish Date	14/03/07	n Current P	rogress Wuse			CRJV 89/02	oneer 2 of 2	Date 155007 Pragress Update	Berlin	Checked Approve	ed
Data Date	15/02/07 Progress	Bar		LT 03: T	hree Month'	s Rolling Program	me	Schooled from Clause 16 Revision N BOT 34 INCLUDED	,		_
			F	L-35 Three N	Months Rolli	ng Programme to	15/02/07				_
© Prima	avera Systems, Inc.			Extr	acted from (	Clause 16 Rev "K"					<u> </u>

## APPENDIX N COMPLAINT LOG

Appendix N - Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
30422-1	Garden Villa, Tai Po Road	22 <sup>nd</sup> April 2003	The complaint (EPD complaint ref. N01/TN/00004192-03), which was transferred by EPD to ET on 22 <sup>nd</sup> April 2003, was raised by a resident living at Garden Villa on 22 <sup>nd</sup> April 2003 concerning construction activity during general holidays (18 <sup>th</sup> to 21 <sup>st</sup> April 2003) at Portion 2C, the concerned works area near Garden Villa at Tai Po Road.	Based on the monitoring results on 18 <sup>th</sup> April 2003, noise levels at the concerned area were below the limit level. The type and quantity PMEs used during the concerned period were complied with the requirement stated in the relevant CNP (CNP no. GW-TN0504-2002).  The ET will continue monitoring under the EM&A programme. In case there is any exceedance or complaint reported, procedures stipulated in the Event Action Plans and the complaint handling procedure of the EM&A Manual will be strictly followed.	Closed
30506-1	Garden Villa, Tai Po Road	6 <sup>th</sup> May 2003	The complaint (EPD complaint ref. N01/TN/00004856-03), which was transferred by EPD to ET on 6 <sup>th</sup> May 2003, was raised by a resident living at Garden Villa on 5 <sup>th</sup> May 2003 concerning construction noise during general holidays (1 <sup>st</sup> May to 4 <sup>th</sup> May 2003) at Portion 2C, the concerned works area near Garden Villa at Tai Po Road and construction waste accumulated on the footpath outside Garden Villa.	No construction work was carried out and A Construction Noise Permit (CNP no. GW-TN0504-2002) was granted by the Contractor on 18 <sup>th</sup> December 2002 for the use of powered mechanical equipments at the concerned area during restricted hours.  The Contractor has cleared the moulds from the footpath and placed all of them inside the site boundary upon receiving the complaint on 3 <sup>rd</sup> May 2003.  The ET will continue monitoring under the EM&A programme. In case there is any exceedance or complaint reported, procedures stipulated in the Event Action Plans and the complaint handling procedure of the EM&A Manual will be strictly followed.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
30714	Garden Villa, Tai Po Road	14 <sup>th</sup> July 2003	The complaint, which was transferred by ER to ET on 14 <sup>th</sup> July 2003, was raised by a resident living at Garden Villa concerning the dust pollution generated from the soil nail works at Temporary Access Road No. 1.	The mitigation measures did not apply effective to prevent the dust generation at the concerned area during the soil nail.  It was recommended that ER should continue monitoring the Contractor to implement the mitigation measures to avoid dust generation; the Contractor should continue implementing the mitigation measures to avoid dust generation, and minimize the disturbance generated by the construction activities at TAR1.	Closed
30808	Sha Tin Heights	8 <sup>th</sup> August 2003	The complaint (EPD Complaint Ref. N01/TN/00011396-03), which was transferred by the EPD to the ET on 8 <sup>th</sup> August 2003, was about the massive tree cutting activities in the site near Sha Tin Heights.	Based on the information stated in the Environmental Review Report, the tree cutting activities were considered necessary and the ecological impact of tree cutting was limited.  According to the Contractor's Method Statement for tree felling and transplanting, which had been commented from ET and Engineer Representative (ER), the tree felling and transplanting had been under the supervision of ER and the tree being felled or transplanted were clearly labeled. Photographic records for the tree being affected were kept.  Based on the information provided by the ER, the concerned area mainly included abandoned farm land and an existing stream covered with grass and shrubs. No individual tree identified to be retained had been felled.  The complaint was considered to be invalid.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
30826	Garden Villa	26 <sup>th</sup> August 2003	An environmental complaint was received by the ER on 26 <sup>th</sup> August 2003. The complaint (ER's complaint ref. EC-05) was forwarded to the ET on same day. It was about the noise disturbance from the rock-breaking activities in South Portal. ET undertook the investigation and submitted the complaint investigation report to ER on 29 <sup>th</sup> August 2003.	According to the ET's investigation, the complaint was considered to be valid. However, there was no noise Limit Level exceedance in August 2003 at the concerned area. Additional noise measurement conducted on 26 <sup>th</sup> August 2003 confirmed that the construction noise level at Garden Villa was below the noise limit.  To minimize the noise disturbance from the rock breaking activities, mitigation measures were then provided by the Contractor.	Closed
30901	Garden Villa	1 <sup>st</sup> September 2003	A public complaint was received by the EPD on 1 <sup>st</sup> September 2003. The complaint was forwarded by EPD to the ET on the same day. It was about the construction dust and Sunday noise generated from construction activities at Toll Plaza near Garden Villa. The complainant also expressed his/her concerns on the noise from breaking activities during weekdays' early morning around 7am. ET undertook the investigation and submitted the complaint investigation report to EPD on 9 <sup>th</sup> September 2003.	According to the ET's investigation report, the complaint was considered to be valid. However, the information provided by the Contractor stated that no Powered Mechanical Equipment was used on Sunday except that wire mesh installation works were carried out at the concerned area. In addition, the measured noise levels and dust levels were below the respective environmental limit in August 2003 at the concerned area. Further dust measurement was conducted on 9 <sup>th</sup> September 2003 to confirm that the dust level at Garden Villa was below the limit.  Mitigation measures were recommended to the Contractor. An additional regular continuous construction dust monitoring was also recommended and has been working since 9 <sup>th</sup> September 2003.	Closed

Log Ref.	Location	<b>Received Date</b>	Details of Complaint	Investigation/Mitigation Action	Status
30905	Garden Villa	5 <sup>th</sup> September 2003	An environmental complaint via the Honourable Cheng Kar Foo and Leung Wing Hung and was received by TDD on 5 <sup>th</sup> September 2003. The complaint was forwarded by TDD to the ET on the same day. It was about the construction dust and noise generated from construction activities at the site near Garden Villa. The complainant also requested to implement barrier to mitigate the noise and dust problem. ET undertook the investigation and submitted the complaint investigation report (Appendix P) to TDD on 9 <sup>th</sup> September 2003.	According to the ET's investigation report, the complaint was considered to be valid. However, the measured noise levels and dust levels were below the respective environmental limits in August and September 2003.  Mitigation measures were recommended to the Contractor. An additional regular continuous construction dust monitoring was also recommended and has been working since 9 <sup>th</sup> September 2003.	Closed
31003	Golden Time Villa	3 <sup>rd</sup> October 2003	An environmental complaint was raised by a resident of Golden Time Villa and was received by TDD on 3 <sup>rd</sup> October 2003. The complaint was forwarded by TDD to the ET on the same day. The complainant concerned about wildlife threat due to road works. He also expressed his concerns on whether the concerned department had any planning on how to settle the wildlife. ET undertook investigation and submitted the complaint investigation report to TDD on 14 <sup>th</sup> October 2003	According to the ET's investigation, the animal wildlife recorded for the Project was limited and no species of conservation interest was found. Avifauna, reptile, amphibian and butterfly species in the area were all common in Hong Kong. The potential impacts on animal wildlife were expected to be low. Therefore, no specific mitigation measure to the animal wildlife was recommended.	Closed

Log Ref.	Location	<b>Received Date</b>	Details of Complaint	Investigation/Mitigation Action	Status
31229	Hin Keng Estate	29 <sup>th</sup> December 2003	An environmental complaint was raised by residents of Hin Keng Estate and was received by EPD (EPD complaint ref.: N01/TN/00022004-03) on 29 <sup>th</sup> December 2003. The complaint was forwarded to the ET on the same day. The complaint was about the construction noise at the entrance of Sha Tin Heights Tunnel in North Portion. ET has undertaken investigation and submitted the complaint investigation report to TDD on 6 <sup>th</sup> January 2004.	According to ET's investigation report, a noise measurement at Hin Keng Estate was conducted on 3 <sup>rd</sup> January 2004 and the measured construction noise levels were well below the respective environmental criteria. The Contractor was recommended to  • space out noisy equipment and position it as far away as possible from the sensitive receivers;  • avoid concurrent uses of noisy equipment near the sensitive area;  • ensure the equipment are maintaining in good operation condition;  • turne off any idle equipment on site;  • provide mitigation measures to the rockbreaking activities; and  • continuously keep ET informed for the construction works to be carried out.	Closed
31231a	Sha Tin Heights	31 <sup>st</sup> December 2003	An environmental complaint was received by EPD (EPD complaint ref. N01/TN/00019795-03) on 29 <sup>th</sup> November 2003, which was transferred to ET on 31 <sup>st</sup> December 2003. The complaint was about the construction dust from at Sha Tin Heights. ET has undertaken investigation and submitted the complaint investigation report to TDD on 6 <sup>th</sup> January 2004.	According to Contractor's information, the Contractor has implemented mitigation measures to suppress the dust generation. These include  Exhaust of dump trucks for internal use were slightly verified in order to avoid it directing to the ground, but horizontally;  All bared slope was hydroseeded; and Frequency of watering for haul road was increased.	Closed
31231b	Sha Tin Heights	31 <sup>st</sup> December 2003	An environmental complaint was received by EPD (EPD complaint ref. N01/TN/00019858-03) on 1 <sup>st</sup> December 2003, which was transferred to ET on 31 <sup>st</sup> December 2003. The complaint was about the construction dust at Sha Tin Heights. ET has undertaken investigation and submitted the complaint investigation report to TDD on 6 <sup>th</sup> January 2004.	According to Contractor's information, the Contractor has implemented mitigation measures to suppress the dust generation. These include • Exhaust of dump trucks for internal use were slightly verified in order to avoid it directing to the ground, but horizontally; • All bared slope was hydroseeded; and • Frequency of watering for haul road was increased.	Closed

Log Ref.	Location	<b>Received Date</b>	Details of Complaint	Investigation/Mitigation Action	Status
40323	Sha Tin Heights	23 <sup>rd</sup> March 2004	An environmental complaint was received by EPD on 20 <sup>th</sup> March 2004 (EPD Ref.: N01/TN/00005617-04) about the dust nuisance generated from the Project at Shatin Heights. The EPD referred the complaint to the ET Leader on 23 <sup>rd</sup> March 2004 for investigation and the ET has submitted the investigation report on 29 <sup>th</sup> March 2004.	<ul> <li>According to ET's investigation report, the Contractor has enhanced mitigation measures as follows:-</li> <li>Arrange water spraying during the loading and unloading of dusty materials;</li> <li>Increase the frequency for haul road watering;</li> <li>Provide a brush machine to remove the dusty materials on the steep road;</li> <li>Arrange workers to spray water at rock breaking area; and</li> <li>Arrange workers at site entrance for wheel washing.</li> <li>No non-compliance of dust level recorded and observed after implementation of mitigations.</li> </ul>	Closed
40506	Hin Keng Estate	6 <sup>th</sup> May 2004	On 3 <sup>rd</sup> May 2004, the TDD received a complaint (TDD Ref.: NTE-ST2/694TH/100) about the noise and dust nuisance due to tunnel blasting near Shatin Heights. The TDD referred the complaint to the ET Leader of the Project on the following day for investigation and the ET has submitted the investigation report on 10 <sup>th</sup> May 2004.	<ul> <li>According to ET's investigation report, the Contractor has enhanced mitigation measures as follows:-</li> <li>To cover the gap between the steel sheet panels of the blasting door to reduce dust nuisance;</li> <li>To inform Hin Keng Estate of the time of blasting in advance;</li> <li>To provide water spraying in the blasting door during blasting time; and</li> <li>To provide acoustic absorption material at the inner surface of the blasting door.</li> <li>No non-compliance of noise level recorded and observed after implementation of mitigations.</li> </ul>	Closed

Log Ref.	Location	<b>Received Date</b>	<b>Details of Complaint</b>	Investigation/Mitigation Action	Status
40517	Sha Tin Heights	17 <sup>th</sup> May 2004	On 14 May 2004, the EPD received a complaint (EPD Ref.: N01/TN/00009723-04) about the dust nuisance due to uncovered lorries near Shatin Heights. The EPD referred the complaint to the ET Leader of the Project on 17 May 2004 for investigation and the ET has submitted the investigation report on 20 May 2004.	The complaint was a public complaint at Sha Tin Heights. The complainant mentioned that some construction lorries with loaded with earth were not covered and caused dust nuisance. According to ET's investigation, the Contractor has already provided all possible measures to prevent uncovered dump trucks leaving the site. It is believed that the captioned complaint is an exceptional incidence and the Contractor was recommended to strictly enforce their policy on dump trucks leaving the site.	Closed
40630	Hin Keng Estate	30 <sup>th</sup> June 2004	On 28 June 2004, the EPD received a complaint (EPD Ref.: N01/TN/00012734-04) about the noise and dust nuisance due to blasting near Shatin Heights. The EPD referred the complaint to the ET Leader of the Project on 30 June 2004 for investigation and the complaint handling procedure is initiated.	According to the information provided by the Contractor, blasting activities were taken place on 23, 26 and 29 June 2004.  The Contractor has erected a blasting door for both the tunnel before the commencement of blasting works in order to enclose the dust and reduce the noise level. The blasting door is made of steel plate with fiberglass filled in between. In addition, a water pipe has been installed inside the tunnel, which can produce aerosol to form a water screen for dust suppression. During blasting, water screen will be operated throughout the period until dust is settled. Water will be sprayed outside the open ground of the tunnel. The blasting door is only allowed to re-open at least 15 minutes after blasting. Additional water spraying will be provided after opening the blasting door.  After received the complaint, the Contractor has installed an additional water screen on 29 June 2004.	Closed

Log Ref.	Location	<b>Received Date</b>	Details of Complaint	Investigation/Mitigation Action	Status
40713	Hin Keng Estate	13 <sup>th</sup> July 2004	On 6 July 2004, the CEDD received a complaint (CEDD Ref.: NTE-ST2/654TH/108) about the noise and dust nuisance due to tunnel blasting near Shatin Heights. The CEDD referred the complaint to the ET Leader of the Project on 13 July 2004 for investigation.	<ul> <li>The Contractor has provided the following mitigations:-</li> <li>To cover the gap between the steel sheet panels of the blasting door to reduce dust nuisance;</li> <li>To inform Hin Keng Estate of the time of blasting in advance;</li> <li>To provide water spraying in the blasting door during blasting time; and</li> <li>To provide acoustic absorption material at the inner surface of the blasting door.</li> <li>Based on the information provided by the ER on 13 July 2004 and the site investigation conducted by ET on 15 July 2004, the Contractor has been strictly implementing the mitigations. The Management Office of Hin Keng Estate was always noticed 24 hours before every blasting.</li> </ul>	Closed
40723	Garden Villa	23 <sup>rd</sup> July 2004	On 21 July 2004, the ER received a complaint (ER Ref.: EC-017) about the noise nuisance due to trucks queuing up along Temporary Access Road 1 (TAR1). The ER referred the complaint to the ET Leader of the Project on 23 July 2004 for investigation.	On 26 July 2004, the Contractor has relocated the truck queue from top of TAR1 to downhill in front of wheel washing bay, where is much far away from Garden Villa. The increased notional distance is about 200m. A noise measurement was conducted on the same day at 9:30am and the measured construction noise level was 69.6dB(A) which does not exceed the Limit Level. Early measurement at Garden Villa will be conducted in order to monitor the effectiveness of mitigations.	Closed

Log Ref.	Location	<b>Received Date</b>	<b>Details of Complaint</b>	Investigation/Mitigation Action	Status
41201	Construction site which near K. K. Terrace	1 <sup>st</sup> December 2004	Complaint regarding the noise nuisance was received on 1 December 2004 at 23:12 (EPD Letter ref: EP580/E6/3/15 with 'Notice of Complaint'). The complainant complained the construction noise emitted after 19:00 from the construction site which near K. K. Terrace.	According to the RSS and the Contractor, one unit Rock Drill (hydraulic) was operated inside T1N tunnel and one unit Pneumatic Breaker was operated inside T2N tunnel during the time period of 19:00-23:00 on 1 December 2004. These two plants were operated in different tunnel and at staggered time. All the tunneling works should be conducted within a fully enclosure situation by closing the blasting door entirely. The Contractor did comply with the CNP conditions on the time of concern. In addition, no shotcreting works were conducted during the time period of 19:00-23:00 on 1 December 2004. As such, no concrete lorry mixer had traveled through Temporary Access Road No. 3 which is near K. K. Terrace during such period.  There is insufficient evidence to establish the complaint based on the available information from the "Notice of Complaint", the RSS, the Contractor and monitoring records. However, it is recommended the Contractor should notify the nearby residents in advance with the working schedule of construction work during restricted hours and strictly comply with all noise mitigation measures.	Closed

Log Ref.	Location	<b>Received Date</b>	Details of Complaint	Investigation/Mitigation Action	Status
50308	Garden Villa	8 <sup>th</sup> March 2005	Complaint regarding the noise and dust nuisance was received on 8 <sup>th</sup> March 2005at 23:12 (EPD Letter ref: EP580/E6/3/15 with 'Notice of Complaint'). The complaint was about the night time and Sunday Construction noise and dust from construction activities carrying out at the site near Garden Villa.	Dust: According to the site inspection on 18 March 2005, fugitive dust emission was observed generated by traffic movement on the haul road before vehicles entering into the wheel washing facility. The Contractor was recommended to provide sufficient dust control on the TAR1 such as installing additional water sprinklers or increasing the water spraying frequency by water truck to reduce the dust emission.  The Contractor should also cover the trucks with canvas sheet once the C&D waste was laden before passing adjacent to Garden Villa.  The Contractor should strictly implement the penalty system and further review and tighten up the system if no obvious improvement is made.  Noise: Based on the available information, no sufficient evidence could establish the noise complaint from the "Notice of Complaint", the Contractor and monitoring records.  The Contractor was recommended to notify the nearby residents in advance of the working schedule of construction work during the restricted hours and strictly comply with all necessary noise mitigation measures.	Closed
50330	Garden Villa	30 <sup>th</sup> March 2005	Complaint regarding the noise nuisance was received on 30 <sup>th</sup> March 2005 at 16:00 (EPD Letter ref: EP580/E6/3/15 with 'Notice of Complaint'). The complaint was about the noise generated by heavy vehicles traveling in and out of the construction site near Garden Villa. According to the complaint, the noise was made from 7am onwards.	According to the information provided by the Resident Site Staff, trucks from R8-SHT contract are not allowed to exit via TAR1 before 9am. The noise identified by the complainant is not related to R8-SHT contract. The complaint lodged against R8-SHT is therefore considered not justifiable.	Closed

Log Ref. Lo	ocation	<b>Received Date</b>	Details of Complaint	Investigation/Mitigation Action	Status
50425 Sh	hatin Ieights	25 <sup>th</sup> April 2005	Complaint regarding the dust nuisance was received on 18 <sup>th</sup> April 2005 (EPD Letter ref: EP580/E6/3/15 with 'Notice of Complaint'). The complaint was subsequently referred to the ET Leader on 25 <sup>th</sup> April 2005. It was related to the construction dust and sulphur-like odour generated from the tunnel blasting works near Shatin Heights.	The records of the RSS and the Contractor showed that blasting works have been conducted on the date of complaint (18 April 2005).  According to the Contractor's investigation, a reversion of tunnel air flow was observed due to seasonal change, such that air kept flowing from the direction of Garden Villa towards Shatin Heights. Since there was no water curtains installed Shatin Heights' direction, white fume and dust particle were observed after blasting works.  Upon receipt of the complaint, all blasting works were stopped until water curtain for tunnel tubes in the Shatin Heights' direction. The water curtain installation work was completed on 23 <sup>rd</sup> April 2005. The Contractor also agreed to implemented the following mitigation measures for future tunnel blasting works:  1. the area within 30m from the blasting area will be wetted with water prior to blasting; 2. sufficient time will be allowed for dust to settle before opening the blasting protection doors; and 3. water curtain will be operated.  Based on the site observed, the RSS considered that the implemented measures by the Contractor were effective.	Closed

Log Ref.	Location	<b>Received Date</b>	Details of Complaint	Investigation/Mitigation Action	Status
50509	The Police	9 <sup>th</sup> May 2005	Complaint regarding the noise nuisance was received on 9 <sup>th</sup> May 2005. The complaint was subsequently referred to the Environmental Team and the Contractor on that day. It was related to the excessive noise generated by the night work.	The records of the ER and the Contractor showed that bridge launching operation was being carried out over the East and Ma On Shan (MOS) Rail near Tai Wai Deport during the time of concern.	Closed

Log Ref.	Location	<b>Received Date</b>	Details of Complaint	Investigation/Mitigation Action	Status
				The Contractor was also reminded to continuously implement their practice as regards the advance notification to the nearby residents of the night time works. In addition, the Contractor should adopt good site practice to minimize the construction noise impact, such as:	
50509	The Police	9 <sup>th</sup> May 2005		<ul> <li>To space out noisy equipment and position it as far away as possible from the sensitive receivers;</li> <li>To avoid concurrent uses of noisy equipment near the sensitive area;</li> <li>To ensure the equipment are maintaining in good operation condition; and</li> <li>To turn off any idle equipment on site.</li> </ul>	Closed
50513	Golden Villa	13 <sup>th</sup> May 2005	Complaint regarding the noise nuisance at the representative of residents of Golden Villa was received on 13 <sup>th</sup> May 2005 from EPD. The complaint was subsequently referred to the Environmental Team Leader. It was about the noise generated from the engineering works from the night time to day time.	The site of concern was likely to be the Sha Tin Height Tunnel. According to the Contractor's information, tunnel excavation works including the rock drill and charging of explosive were undertaken after 2300 hours in the tunnels. It was believed that the nuisance was caused by the vibration due to drilling works. The nuisance was more significant as the excavation face at south bound tunnel came closer towards Keng Hau Road.	Closed
				Upon receipt of the complaint, the Contractor had already stopped all drilling works after 23:00 hours inside the sound bound tunnel. In addition, the Contractor also noticed to the residents of Golden Villa for explaining the cause of nuisance and the actions they had taken to rectify the problems.	

Log Ref.	Location	<b>Received Date</b>	Details of Complaint	Investigation/Mitigation Action	Status
51026	Exit of TAR1 next to Tai Po Road	26 <sup>th</sup> October 2005 (by CEDD)	Complaint was received by CEDD on 26 <sup>th</sup> October 2005 and it was subsequently referred to the Environmental Team Leader. It was about water in the wheel washing bay was brought onto the ensuing concrete pavement by lorries passing through it and the water fall onto Tai Po Road.	After the site investigation by the RSS, it was confirmed that the source of the muddy water was this newly constructed wheel washing bay. Water in the wheel washing bay was brought onto the ensuing concrete pavement by lorries passing through it and the water fall onto Tai Po Road.  The complaint was considered valid and corrective and preventive actions were taken by the Contractor:  1. all vehicles exiting from TAR1 were stopped using the wheel washing bay to prevent any further overflowing of muddy water from the bay.  2. a water browser was immediately deployed by the Contractor to clear the muddy water and the debris deposited on the concerned section of Tai Po Road.  3. A concrete bund was constructed along the lower side of the wheel washing bay to reduce the amount of water overflowing.  4. a small ditch was formed across the lower side of the vehicular exit in order to collect the overflowed water and prevent it from falling onto public road.  The Contractor was reminded to closely monitor the situation and review the effectiveness of the mitigation measures.	Closed

Log Ref.	Location	<b>Received Date</b>	Details of Complaint	Investigation/Mitigation Action	Status
51118	Near Carado Garden and KCRC depot	18 <sup>th</sup> November 2005 (by CEDD)  A complaint of same nature was forwarded by EPD on 29 <sup>th</sup> Nov 05.	Complaint regards the nighttime construction noise due to construction works near Carado Garden and KCRC depot on 17 <sup>th</sup> November 2005. It was received on 18 <sup>th</sup> November 2005 by CEDD and EPD. On 21 <sup>st</sup> and 29 <sup>th</sup> November 2005, the complaint was referred to the ET Leader by CEDD and EPD.	As advised by RSS, at the concern (17 <sup>th</sup> November 2005), stressing work was carried out by the Contractor on the bridge N1, Span 1. Noise was generated during the lorry passed the movement joints of the bridge deck where steel plates were installed temporarily to provide access.  According to the RSS, a valid CNP no. GW-RN0436-05 has been checked. All the PME and the type of lorry involved in the works complied with the CNP requirements.  The complaint was considered valid and preventive actions were taken by the Contractor:  1. re-spected the steel plates installed at the movement joints of the bridge deck and ensured that they are securely fixed. Such as , install steel bars to fix the steel plates.  2. rubber pads will be provided at the movement joints to minimize noise generation due to vibration of the steel plates.  3. close supervision to ensure care handling of construction materials will be provided on site.  As advised by the RSS, the bridge launching work has been completed and no similar type of work will be carried out during the nighttime in future.	Closed

Log Ref.	Location	Received Date	<b>Details of Complaint</b>	Investigation/Mitigation Action	Status
60207	Che Kung Miu Road near Tin Sam Village	7 <sup>th</sup> February 2006	The complaint was concerned the construction dust and noise generated from a construction site near Tin San Village during daytime between 0700 hours and 1900 hours. It was received on 7th February 2006 by EPD.	According to the RSS, the site of concern was the Proposed Retaining Wall No.5 (located at Che Kung Miiu Road near Tin Sam Village). During the period of concern, construction of pre-bored H-piles was undertaken and it's mainly activity involved a drilling machine, a crane lorry and air compressors.  The ET had arranged ad-hoc noise measurements on 8th, 9th, 14th and 16th Feb 06 at Tin Sam Village. The results of measurements showed no exceedance of the daytime noise criterion, i.e. 75dB(A) recorded.  The complaint was considered valid and rectification actions were taken by the Contractor, including:  a) All flaps of the air compressors would be closed all the time;  b) Idled machines would be switched to minimize generation of unnecessary noise;  c) Two air compressors were relocated to farther area on 8 Feb 06;  d) Temporary noise barriers were erected on 11 Feb 06;  e) Self monitoring of noise levels during the pilling operation;  f) Additional dust screens were installed along the public road on 8 Feb 06;  g) Public notices were distributed to the residents and the business establishment at Tin Sam Village on 8 Feb 06.  During ET's ad-hoc inspections, the abovementioned mitigation measures were found in place and the public footpath beside the site areas was found clean and free dusty materials.  As advised by the Contractor, a total of 10 piles are required to be constructed for the Proposed Retaining Wall No.5, thus this pilling activity would be completed by April 2006. The situation would be continuously reviewed by the Contractor, RSS and the ET.	Closed

The complaint was referred by ER on 3 <sup>rd</sup> May 2006, According to ER's record, the major constru	on
which was about the noise nuisance arising from the temporary steel plates installed at both north and south bond carriageway of Che Kung Miu Road. The noise at night was heard when heavy vehicles ran over the temporary steel plates.  North and south bound carriageway of Che Kung Miu Road  North and south bound carriageway of Che Kung Miu Road  North and south bound carriageway of Che Kung Miu Road  3 <sup>rd</sup> May 2006  North and south bound carriageway of Che Kung Miu Road  3 <sup>rd</sup> May 2006  Diring ET's ad-hoc inspections, the abovementi mitigation measures were taken. No fu complaint on the same issue had been received agr. During ET's ad-hoc inspections, the abovementi mitigation measures were found in place.  As advised by the RSS, the drainage works wow completed at the concerned area was the undergr drainage work at CKM Road where trenches excavated at the carriageways. The steel plates excavated at the carriageways. The steel plates excavated at the carriageways. The steel plates acted as temporarily deek over trenches for vet passage after works.  When heavy vehicles passed over the decks, the was generated due to clashing of the steel plate was the source of noise nuisance.  The complaint was considered valid and corrective preventive actions were taken by the Contractor:  1. Conducted inspection to the temporary plates; and  2. Steel plates were welded together and fixe position.  In addition, the Contractor had informed the committed in mitigation measures were found in place.  As advised by the RSS, the drainage works wow completed at the concerned area by the end of Az 2006.  Thus, the Contractor was reminded to continui implement their practice to prevent noise nuis generation due to the construction works.	nd ere les lise It nd Closed in Closed her les lise is lise in lint her lin

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
60626	near Tin Sum Village, Che Kung Miu Road	26 <sup>th</sup> June 2006	The Complaint was received by EPD on 19 <sup>th</sup> June 2006 and referred to ET Team on 26 <sup>th</sup> June 2006, which was about general construction noise and flytipping/dumping of construction wastes caused by construction work near Tin Sum Village, at Che Kung Miu Road.	According to the ER's record, the major construction activities included lying of drain pipe, removal and erection of framework. However, only hand held tools were used when formwork were erected to wall of RW5 Bay 12& 14.  As advised by the RSS, the waste skip was provided to stock some timbers at the concerned area. i.e. beside the KCRC boundary wall.  Besides, on load of construction waste was disposed on 19 <sup>th</sup> June 2006.  Site inspection on the Contractor's mitigation measure was carried out by ET on 28 <sup>th</sup> and 29 <sup>th</sup> June 2006.  Base on the information collected, the complaint was considered not justifiable.  However, the Contractor was reminded to continuously provide good site practice to minimize construction noise/waste impact.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
60828	Sha Tin Heights Southern Tunnel near Tai Po Road	28th August 2006	The public complaint was received on 28 August 2006 by EPD which was about construction dust generated from the construction site at Sha Tin Heights Southern Tunnel near Tai Po Road - Sha Tin Heights, Sha Tin.	According to the RSS information, the Southbound Tunnel was not for traffic and water spray onto road surface was implemented at least once a day.  According to the Contractor's information, the Northbound Tunnel was currently used as a vehicle access to the Toll Plaza near Garden Villa. This tunnel was maintained wet all the time during the working hours.  A site inspection was conducted on 28 August 2006 and 7 September 2006 by ET. During the site inspection, the adequate water spraying onto road surface was found in the concerned area of the Southbound Tunnel.  Based on the above information, the complaint was considered to be invalid.  However, the Contractor was reminded to continuously provide good site practice to minimize construction air impact.	Closed