

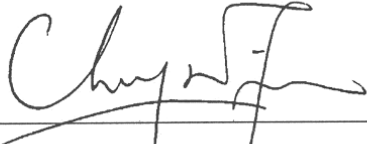
# Highways Department

**Route 8 (previously known as Route 9) between  
Cheung Sha Wan & Sha Tin**

**Contract No. HY/2003/10 - Environmental Team for  
Lai Chi Kok Viaduct and Eagle's Nest Tunnel**

**Monthly EM&A Report  
Part II – Eagle's Nest Tunnel & Associated Works  
(Version 1)**

April 2006

Approved By   
(Environmental Team Leader)

REMARKS:

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

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## ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
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
TDD	Territory Development Department
QA/QC	Quality Assurance / Quality Control
SLM	Sound Level Meter
WMP	Waste Management Plan

## EXECUTIVE SUMMARY

### Introduction

- This is the twenty-ninth monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the “Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin, Lai Chi Kok Viaduct & Eagle's Nest Tunnel”. This report documents the findings of EM&A Works conducted in April 2006 for Contract No. HY/2003/02, Eagle's Nest Tunnel and Associated Works (the Project).
- The major site activities undertaken in the reporting month included slope cutting, drainage works, tunnel lining and construction of portal buildings and Administration Building.

### Environmental Monitoring and Audit Works

- Environmental monitoring and audit works for the Project was performed regularly as stipulated in the EM&A Manual and the results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
- Summary of events and actions taken in the reporting month is tabulated in **Table I**.

**Table I Summary of Events Recorded in the Reporting Month**

<i>Parameter</i>	<i>No. of Events</i>		<i>No. of Events Due to the Project</i>	<i>Action Taken</i>
	<i>Action Level</i>	<i>Limit Level</i>		
1-hr TSP	1	0	0	N/A
24-hr TSP	0	0	0	N/A
Noise	0	0	0	N/A

### Environmental Licenses and Permits

- Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, Registration of Chemical Waste Producer (RCWP), Construction Noise Permits (CNPs) and Water Discharge Licenses (WDLs). Four new CNPs were issued to the Project by EPD in the reporting month.

### Key Information in the Reporting Month

- Summary of key information in this reporting month is tabulated in **Table II**.

**Table II Summary Table for Key Information in the Reporting Month**

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N/A	N/A	---
Status of submissions under EP	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---
<b><u>Future Key Issues:</u></b>					
<p>Major site activities for the coming month include:</p> <ul style="list-style-type: none"> <li>• Slope cutting;</li> <li>• Haul road construction;</li> <li>• Soil nail and rock dowel installations;</li> <li>• Retaining wall construction;</li> <li>• Installation of water proofing membrane in tunnels;</li> <li>• Administration building construction;</li> <li>• Portal building construction; and</li> <li>• Drainage works.</li> </ul> <p>The anticipated environmental impacts will be mainly on surface runoff during rainy days, dust from slope work, haul roads and stockpiles, noise impact from soil nailing and rock dowel installation.</p>					

## 1. INTRODUCTION

### Background

- 1.1 Route 9 (Kowloon Section) (R9K) (hereinafter call the R9K-Project) forms part of the Route 9 between Cheung Sha Wan and Sha Tin (R9-CSWST) 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. R9K is being managed and implemented by the Highways Department (HyD).
- 1.2 The engineering design of R9K is covered under Agreement No. CE 50/98 "Route 9 between Cheung Sha Wan and Sha Tin – Design Construction Assignment". The main consultant engaged under Agreement No. CE 50/98 is Maunsell Hyder Joint Venture (MHJV), who acts as the Engineer for the construction contracts. The works of R9K mainly comprise a 1.4km dual 3-lane Lai Chi Kok Viaduct from Lai Wan Interchange to Butterfly Valley; 0.5 km of dual 3-lane at-grade carriageway linking to the 2.1 km dual 3-lane twin-bore Eagle's Nest Tunnel with associated portal buildings; a toll plaza with an administration building located with the Sha Tin valley woodland; a ventilation building and an adit; associated noise barriers, noise enclosures, drainage, slope and landscape works; and electrical and mechanical works for the whole R9-CSWST. The remainder of the R9-CSWST forms the Sha Tin Section (R9S) of the project and is being managed and implemented separately by the Civil Engineering and Development Department (CEDD).
- 1.3 The R9-CSWST project is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). An environmental impact assessment (EIA) report has been prepared in 1998 for the R9-CSWST project (1998 R9 EIA) to consider the key issues of noise, air quality, water quality, ecological, construction waste, landscape and visual, land use and cultural impacts, and identify possible mitigation measures.
- 1.4 An Updated Final EIA report was subsequently completed in August 1999 for the R9-CSWST project (1999 R9 EIA), to cater for some changes in R9K portion as mentioned in paragraph 1 of the report. The 1999 R9 EIA was endorsed by Environmental Protection Department (EPD) in November 1999. The 1998 R9 EIA and the 1999 R9 EIA (R9 EIA Reports) were included in the EIA register under the EIAO as report no. EIA-135/BC and AEIAR-022/1999 respectively. An Environmental Monitoring and Audit (EM&A) Manuals for each of the R9 EIA Reports (EM&A Manuals) were also included as part of the EIA reports in the register.
- 1.5 Subsequent to the endorsement of the R9 EIA Reports by EPD in November 1999, the project programme was deferred to start in 2002/2003 for completion by 2006/07. The implementation of the project was then separated into the R9S and R9K portion. An Environmental Permit (EP) No. EP-103/2001 was issued on 17 September 2001 for R9K to the HyD as Permit Holder and a varied EP No. EP-103/2001/A was subsequently issued on 20 May 2003 for R9K (R9K EP) to HyD as Permit Holder. A varied EP-103/2001/C was recently issued on 22 July 2005.

- 1.6 The major construction activities of two civil contracts of the R9K project, Contract No. HY/2003/01 entitled “Route 9 – Lai Chi Kok Viaduct” and Contract No. HY/2003/02 entitled “Route 9 – Eagle’s Nest Tunnel and Associated Works”, were commenced on 15<sup>th</sup> December 2003 for completion in April 2007.
- 1.7 “Route 9” was recently re-tiled as “Route 8 (previously known as Route 9)”. Cinotech Consultants Limited (Cinotech) was commissioned by HyD to undertake the Environmental Monitoring and Audit works for “Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin - Environmental Team (ET) for Lai Chi Kok Viaduct and Eagle’s Nest Tunnel (Contract No. HY/2003/10)”. Dr. Priscilla CHOY of Cinotech Consultants Ltd. was appointed as the ET Leader under Condition 2.2 of the EP. Mr. David YEUNG of CH2M HILL Hong Kong Ltd. was appointed as the IEC under Condition 2.1 of the EP. This is the twenty-ninth monthly EM&A report summarizing the EM&A works for the Project in April 2006.

### **Project Organizations**

- 1.8 Different parties with different levels of involvement in the project organization include:
- Project Proponent – Major Works Project Management Office (MWPMO) of Highways Department (HyD)
  - Engineer / Engineer’s Representative (E/ER) – Maunsell-Hyder Joint Venture (MHJV)
  - Environmental Team (ET) – Cinotech Consultants Limited
  - Independent Environmental Checker (IEC) – CH2M HILL Hong Kong Ltd.
  - Contractor – Leighton-Kumagai Joint Venture (LKJV)
- 1.9 The responsibilities of respective parties are detailed in Section 1.8.3 of the EM&A Manual (1999) of the Project.
- 1.10 The key contacts of the Project are shown in **Table 1.1**.

### **Construction Programme**

- 1.11 The site activities undertaken in the reporting month were:
- Soil nailing, box culvert / open channel (railing installation), retaining wall and water-main works at Butterfly Valley;
  - Cut slope and haul road construction at Butterfly Valley;
  - Noise barrier foundation, rock dowel and earth filling works at butterfly Valley;
  - Drainage works at Butterfly Valley, Toll Plaza, Ventilation Building and SHT – North Portal Building;
  - Concrete lining and water proofing membrane installation and at ENT Tunnel;
  - Concreting of columns, walls and slab at South Portal, North Portal, Toll Plaza and Ventilation Adit;
  - Plastering at North Portal Building;
  - Footbridge and Toll Contractor’s Passage construction at Toll Plaza;
  - Laying concrete block at Toll Plaza Administration Building;
  - Chlorine barrier wall construction at Portion X;
  - Aluminum window installation at Administration Building, SHT – South Portal



- Building and SHT – North Portal Building; and
- E&M installation work within SHT works area.

**Table 1.1 Key Project Contacts**

Party	Role	Name	Position	Phone No.	Fax No.
HyD	Permit Holder	Mr. Kroc Leung	SE2/R8K	2762 3662	2714 5198
		Mr. George Law	E4/R8K	2762 3675	
MHJV	Engineer	Mr. Conrad Ng	Project Manager	2605 6262	2691 2649
	Engineer's Representative	Mr. Peter Poon	CRE	3552 2500	2743 9200
		Mr. Eric Wong	RE (S & EP)	3552 2551	
		Ms. Sammie Chan	TO (EN)	3552 2605	
Cinotech	Environmental Team	Dr. Priscilla Choy	The ET Leader	2151 2089	3107 1388
		Miss Attle Hui	Audit Team Leader	2151 2093	
		Mr. Henry Leung	Monitoring Team Leader	2151 2087	
CH2M	Independent Environmental Checker	Mr. David Yeung	Independent Environmental Checker	2507 2203	2507 2293
		Mr. Billy Yu	Assistant Independent Environmental Checker	2872 2949	
LKJV	Contractor	Mr. Ray Brewster	Project Director	9092 6128	2743 1600
		Mr. Danny Cheng	QA/E Manager	3552 2113	
Enquiries Hotline				3552 2226	-
Complaint Hotline				3552 2380	-

### Summary of EM&A Requirements

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

## 2. AIR QUALITY

### Monitoring Requirements

- 2.1 Monitoring of 1-hour and 24-hour TSP was conducted to monitor the air quality. The established Action/Limit Levels for the environmental monitoring works were shown in **Appendix A**.

### Monitoring Locations

- 2.2 Three designated monitoring stations, AM1, AM3 and AM4 was selected for impact dust monitoring for the Project. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 1a** and **1b**.

**Table 2.1 Locations for Air Quality Monitoring**

Station	Description	Location
AM1	Yew Chung International School / PLK Choi Kai Yau School	Rooftop
AM3	Slope no. 07SW-D/FR4 near Garden Villa	On Ground
AM4	Government Quarters	Ground Floor <sup>1</sup>

Note: <sup>1</sup>The HVS was installed on the ground floor, which is close to the refuse collection station of the Government Quarters.

### Monitoring Equipment

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

**Table 2.2 Air Quality Monitoring Equipment**

Equipment	Model and Make	Quantity
Calibrator	GMW25; S/N: 1536	1
HVS Sampler	Graseby GMW Model GS2310 High Volume TSP Sampler and associated equipment and shelter	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 period is shown in **Appendix C**.

**Table 2.3 Impact Dust Monitoring Parameters, Frequency and Duration**

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

**Monitoring Methodology and QA/QC Procedure**Instrumentation

- 2.5 Graseby GMW Model GS2310 TSP High Volume Sampler (HVS) was employed for 1-hour & 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 Sections 2.2 – 2.4 of the Updated EM&A Manual (1999).

Operating/Analytical Procedures

- 2.6 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.
- 2.7 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m<sup>3</sup>/min. and 1.4 m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50. For TSP sampling, fiberglass filters (G810) were used.
- 2.8 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 2.9 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.

- 2.10 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.
- 2.11 The shelter lid was closed and secured with the aluminum strip. The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number). After sampling, the filter was removed and sent to the laboratory for weighing. The elapsed time was also recorded.
- 2.12 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  $\pm 3^\circ\text{C}$ ; the relative humidity (RH) should be  $< 50\%$  and not vary by more than  $\pm 5\%$ . A convenient working RH is 40%.

#### Maintenance/Calibration

- 2.13 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**

- 2.14 All TSP monitoring was conducted as scheduled during the reporting month.
- 2.15 One Action Level exceedance for 1-hour TSP was recorded at Station AM3 (Garden Villa) on 25 April 2006. It was considered that the exceedance was not related to the Project and no further action was required. The exceedance report is attached in the **Appendix H**. No Limit Level exceedance was recorded in the reporting month.
- 2.16 No Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting month.
- 2.17 Wind data monitoring equipment has been installed in Shatin Heights for logging wind speed and wind direction. These wind data is summarized in **Appendix D**.
- 2.18 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F**, respectively.

### 3. NOISE

#### Monitoring Requirements

- 3.1 Monitoring and audit of construction noise levels is required to be conducted, in accordance with the EM&A Manual, to ensure that any unacceptable noise impacts could be readily detected and timely and appropriate action be undertaken to rectify the situation.
- 3.2 The construction noise levels shall be measured in terms of the A-weighted equivalent continuous sound pressure level ( $L_{eq}$ ).  $L_{eq}$  (30min) shall be used as the monitoring parameter for the time period between 0700-1900 hours on normal weekdays. For all other time periods,  $L_{eq}$  (5min) shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. As supplementary information for data auditing, statistical results such as  $L_{10}$  and  $L_{90}$  shall also be obtained for reference.
- 3.3 Three designated noise monitoring stations, namely NM1, NM5 & NM6 were selected for impact monitoring in accordance to the EM&A manual (1999) and the subsequent EPD approval of the relocations.
- 3.4 Noise monitoring is also required to be conducted at station NM7 in accordance with the EM&A Manual (1998). The noise monitoring at the station is required to be conducted under CEDD's construction Contract No. ST 89/02 "Sha Tin Heights Tunnel and Approaches" in accordance with the requirement of Environmental Permit No. EP104/2001/A. The impact noise monitoring results at station NM7 are also presented in this report.
- 3.5 **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

#### Monitoring Locations

- 3.6 Noise monitoring was conducted at four designated monitoring stations as summarized in Table 3.1. Figures 1a & 1b show the locations of these stations.

**Table 3.1 Noise Monitoring Stations**

Monitoring Station	Description	Location
NM1	Yew Chung International School / PKL Choi Kai Yau School	Rooftop
NM5	Villa Carlton	Ground Floor <sup>1</sup>
NM6	Government Quarters	Rooftop of Refuse Collection Station
NM7	Garden Villa	Rooftop

Note: <sup>1</sup> The noise measurement was taken at 2.3m above the ground floor of Villa Carlton, where has a line of sight of the construction site in the opposite.

## Monitoring Equipment

- 3.7 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	2
Wind Speed Anemometer	RS232 Integral Vane Digital Anemometer	1

## Monitoring Parameters, Frequency and Duration

- 3.8 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**

Station	Parameter	Period <sup>1</sup>	Frequency	Measurement
NM1	L <sub>10</sub> (30 min.)dB(A) L <sub>90</sub> (30 min.)dB(A) L <sub>eq</sub> (30 min.)dB(A)	(a) 0700-1900 hrs. on weekdays (b) 1900-2300 hrs. on weekdays (c) 0700-2300 hrs. on holidays (d) 2300-0700 hrs on any days	Once per week	Façade
NM5				Façade
NM6				Free Field
NM7				Façade

Note: <sup>1</sup>(b), (c) and (d) will only be conducted if construction works are undertaken during these periods.

## Monitoring Methodology and QA/QC Procedures

- The Sound Level Meter was generally set on a tripod at a height of 1.2 m above the ground, depending to the actual monitoring condition.
- For free field measurement (if any), the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels were adjusted with a correction of +3 dB(A).
- 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 : A
  - time weighting : Fast
  - time measurement : 30 minutes / 5 minutes
- 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 re-calibration 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 standard 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**

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

### **Results and Observations**

- 3.10 Noise monitoring was performed at the four designated locations during the daytime period (0700-1900 hours) as scheduled in this reporting month. Restricted-hour monitoring was also conducted at NM5, NM6 and NM7.
- 3.11 All the Construction Noise Levels (CNLs), except the monitoring (0700-1900 on weekdays) at NM1 and NM6, reported in this report were adjusted with the corresponding baseline level, in order to facilitate the interpretation of the noise exceedance.
- 3.12 Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 3.13 No Action/Limit Level exceedance (noise complaint) was recorded in the reporting month.

#### 4. ENVIRONMENTAL AUDIT

##### Site Audits

- 4.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix I**.
- 4.2 Site audits were conducted on 3<sup>rd</sup>, 12<sup>th</sup>, 20<sup>th</sup> and 26<sup>th</sup> 2006 by ET. The audit session on 3<sup>rd</sup> March 2006 was conducted with the representatives of HyD, IEC, ER, the Contractor and ET.

##### Review of Environmental Monitoring Procedures

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

###### *Air Quality Monitoring*

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

###### *Noise Monitoring*

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

##### Status of Environmental Licensing and Permitting

- 4.4 All permits/licenses obtained for the Project are summarized in **Table 4.1**. Four new CNPs were issued to the Project by EPD in the reporting month.

##### Implementation Status of Environmental Mitigation Measures

- 4.5 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 provided in **Appendix K**.



**Table 4.1 Summary of Environmental Licensing and Permit Status**

Permit No.	Valid Period		Details	Status
	From	To		
<b>Environmental Permit (EP)</b>				
EP-103/2001/C	22/07/05	N/A	<u>Construction and operation of</u> (a) All civil works (including highways, traffic, geotechnical, drainage, structural, architectural and landscaping works) for the Lai Chi Kok Viaduct, the interchange with Ching Cheung Road, the main road within Butterfly Valley and the Eagle's Nest Tunnel; (b) All E&M works (including ventilation, Traffic Control & Surveillance System (TCSS), toll collection system and lighting) for the whole Route 9 between Cheung Sha Wan and Sha Tin; (c) The permanent slope works above the northern portal of the Eagle's Nest Tunnel; (d) The architectural works (including fitting out and furnishings) of the portal buildings of the Sha Tin Heights Tunnel.	Valid
<b>Registration of Chemical Waste Producer</b>				
WPN 5213-761-L2595-01	26/01/04	N/A	N/A	Valid
<b>Water Discharge Licence</b>				
EP482/261/0327/I	03/05/04	31/05/09	Discharge of industrial trade effluent and effluent arising from construction activities at the construction site at Ventilation Adit on Tai Po Road (behind Shell Filling Station) opposite Pinehill Development Highways.	Valid
EP482/261/0326/I	01/04/04	30/04/09	Discharge of industrial trade effluent and effluent arising from construction activities at the construction site at Mui Kong Tsuen, Butterfly Valley, Lai Chi Kok, Kowloon.	Valid
No. 3156	23/02/04	22/02/09	Discharge of industrial trade effluent and all other wastewater arising from the works areas at North Portal of Route 9 – Eagle's Nest Tunnel and Associated Works (Contract HY/2003/02).	Valid
<b>Construction Noise Permit (CNP)</b>				
GW-RW0073-06	07/2/06	4/5/06	<i>Location:</i> Butterfly Valley <i>Time period:</i> General holidays (including Sundays) between 2300 to 0700 hrs	Valid
GW-RW0043-06	6/2/06	5/8/06	<i>Location:</i> Ventilation Adit <i>Time period:</i> General holiday (including Sundays) between 0700 and 2300 hours, and any other day between 1900 and 2300 hours.	Valid
GW-RW0086-06	6/3/06	10/05/06	<i>Location:</i> ENT South Portal Site at Butterfly Valley to North Portal Site near Garden Villa <i>Time period:</i> Any day not being a general holiday, immediately following a general holiday between 2300 and 2400 and not immediately following a general holiday between 0000 and 0700 & 2300 and 2400	Valid

Permit No.	Valid Period		Details	Status
	From	To		
GW-RW0178-06	8/4/06	7/10/06	<i>Location: Butterfly Valley</i> <i>Time period: General holiday (including Sundays) between 0700 and 2300 and any day not being a general holiday between 1900 and 2300</i>	Valid
GW-RN0532-05	11/11/05	10/05/06	<i>Location: ENT South Portal Site near Butterfly Valley</i> <i>Time period: General holiday including Sundays between 0900 and 2300 and any day not being a general holiday including Sundays between 1900 and 2300</i>	Valid
GW-RN0537-05	11/11/05	10/05/06	<i>Location: Toll Plaza</i> <i>Time period: General holiday (including Sundays) between 0900 and 2300 hours, and any other day between 1900 and 2300 hours.</i>	Valid
GW-RN0593-05	08/12/05	07/06/06	<i>Location: South and North Portal Buildings</i> <i>Time period: General holiday (including Sundays) between 0900 and 2400 hours, and any other day between 1900 and 2400 hours.</i>	Valid
GW-RN0143-06	3/4/06	2/10/06	<i>Location: ENT South Portal Site at Butterfly Valley</i> <i>Time period: any day between 2300 and 0700 on next day</i>	Valid
GW-RN0150-06	4/04/06	3/10/06	<i>Location: ENT Tunnel North Portal Site near Garden Villa</i> <i>Time period: Any day not being a general holiday including Sundays between 1900 and 2300</i>	Valid
GW-RN0151-06	3/4/06	2/10/06	<i>Location: ENT North Portal Site near Garden Villa</i> <i>Time period: Any day between 2300 and 0700 on next day</i>	Valid
GW-RN0086-06	6/3/06	10/5/06	<i>Location: South Portal to North Portal tunnel end</i> <i>Time period: Any days not being a general holiday between 2300 and 0700 hours on next day</i>	Valid

4.6 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations are summarized in **Table 4.2**.

### Summary of Exceedances

#### *1-hr and 24-hr TSP Monitoring*

4.7 One Action Level exceedance for 1-hour TSP was recorded at Station AM3 (Garden Villa) on 25 April 2006 due to the other construction activities according to ET's observation. Hence, it was considered that the exceedance was not related to the Project and no further action was required. No Limit Level exceedance was recorded in this reporting month.

4.8 No Action/Limit Level for 24-hour TSP was recorded in the reporting month.

*Construction noise*

4.9 No Action/Limit Level exceedance (noise complaint) was recorded in the reporting month.

**Table 4.2 Observations and Recommendations of Site Audit**

<b>Parameters</b>	<b>Date</b>	<b>Observations / Recommendations</b>	<b>Remedial Actions</b>
<b><i>Water Quality</i></b>	3 Apr 06	Overflow of silt water was observed at Toll Plaza. The Contractor was reminded to review the capacity of the treatment facilities and all wastewater should be properly treated before discharge.	Rectification / improvement was observed during the site inspection on 12 April 06.
	3 Apr 06	The site boundary along Portion D6 near the Workshop was not properly protected such that surface runoff, generated on rainy days, would be discharged into the drainage system without any treatment.	The rectification was in progress.
	12 Apr 06	Silty effluent discharge from the AquaSed at Portion A (MKT) was observed. The open channel near the pumping point and the discharge point was found to be deposited with sediment. The Contractor was reminded to clear the sediment as soon as possible and improve the efficiency of the AquaSed.	Rectification / improvement was observed during the site inspection on 20 April 06.
	26 Apr 06	Hydro-seeding or other measures should be provided for the open slope at BV-S3 and 11 NW-A/C432 to prevent the sand and soil washed out by rain water.	The situation would be followed up in May 06.
<b><i>Air Quality</i></b>	12 Apr 06	Open stockpile was observed at BVS2. The Contractor was reminded to cover the idle surfaces of the stockpile to minimize dust emission and water quality impact arising from surface runoff.	Rectification / improvement was observed during the site inspection on 20 April 06.
	20 Apr 06	Haul road watering should be provided more frequent for the site area at Toll Plaza – portion D4.	Rectification / improvement was observed during the site inspection on 26 April 06.
<b><i>Chemical and Waste Management</i></b>	3 Apr 06	The Contractor was reminded to dispose of the rubbish at Portion D4 and I1 more frequently and ensure the sorting areas are properly segregated. The food wastes should be disposed of at rubbish skips or ins as soon as possible.	Rectification / improvement was observed during the site inspection on 20 April 06.

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

- 4.10 The Event Action Plans for air quality and noise are presented in **Appendix J**.

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

- 4.11 No environmental related complaint or prosecution was received in the reporting month.
- 4.12 There were 22 environmental complaints and no prosecution received since the commencement of the Project. The updated Complaint Log is shown in **Appendix M**.

## 5. FUTURE KEY ISSUES

### Key Issues for the Coming Month

5.1 Key issues to be considered in coming months include:

- Surface runoff generated at Toll Plaza and Butterfly Valley areas;
- Potential dust emission from slope works and haul road construction at Butterfly Valley, excavation, soil nailing and vehicle movement on haul roads;
- Noise generation from excavation works, rock breaking works at Butterfly Valley;
- Accumulation of standing water after rains.

### Monitoring Schedule for the Next Month

5.2 The tentative environmental monitoring schedule for 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 L**. The major construction activities in coming months include:

#### *ENT Tunnel*

- Concrete lining and waterproofing membrane at VA junction, OHVD slab, road slab, tunnel drainage, painting for OHVD soffit and E&M MSFD installation.

#### *Butterfly Valley*

- Cut slope, haul road, box culvert, open channel, soil nailing, rock dowel, retaining wall, water mains construction, noise barrier foundation and drainage works.

#### *South Portal Building*

- Concreting of columns, walls and slab at 3/F and 4/F levels.

#### *North Portal Building*

- Concreting of columns, walls and slabs at 3/F and 4/F levels and plastering

#### *Toll Plaza's Structures and Administration Building*

- Footbridge, Toll Collector's Passageway, drainage, laying of concreting block, aluminum window installation, concreting of columns, walls and slabs for workshop.

#### *Ventilation Adit Tunnel and Building*

- Concreting of columns, walls and slabs at 2/F to vent shaft floor and drainage works.

#### *Other Works Areas*

- Chlorine barrier wall panel installation construction at Portion X;
- E&M installation works within SHT works area.

## 6. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- 6.1 Environmental monitoring works were performed in the reporting month and all monitoring results were checked and reviewed.
- 6.2 One Action Level exceedance for 1-hour TSP was recorded at Station AM3 (Garden Villa) on 25 April 2006 due to the other construction activities and no further action was required. No Limit Level exceedance was recorded in the reporting month.
- 6.3 No environmental complaint or prosecution was received in the reporting month.

### Recommendations

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

#### *Water Impact*

- To review and implement temporary drainage system especially for the areas at Butterfly Valley and Toll Plaza.
- To closely monitor the capacity of existing de-silting facility on site, especially for the discharge at the site in Butterfly Valley and Toll Plaza.
- To keep the sedimentation facilities well maintained and perform de-silting regularly.

#### *Dust Impact*

- To ensure adequate water spray or other dust suppression measures are applied for slop cutting and the haul roads and stockpile areas in Butterfly Valley.
- To cover idle soil slope surface and stockpile of dusty materials to prevent wind erosion.

#### *Noise Impact*

- To closely observe the more stringent requirement for construction during school examination periods.
- To provide temporary noise barriers for noisy activities (such as breaking works).
- To reduce the number of noisy equipment in concurrent operation.

#### *Waste/Chemical Management*

- To ensure proper storage of chemical and chemical waste on site.
- To check for any accumulation of waste materials or rubbish on site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly.

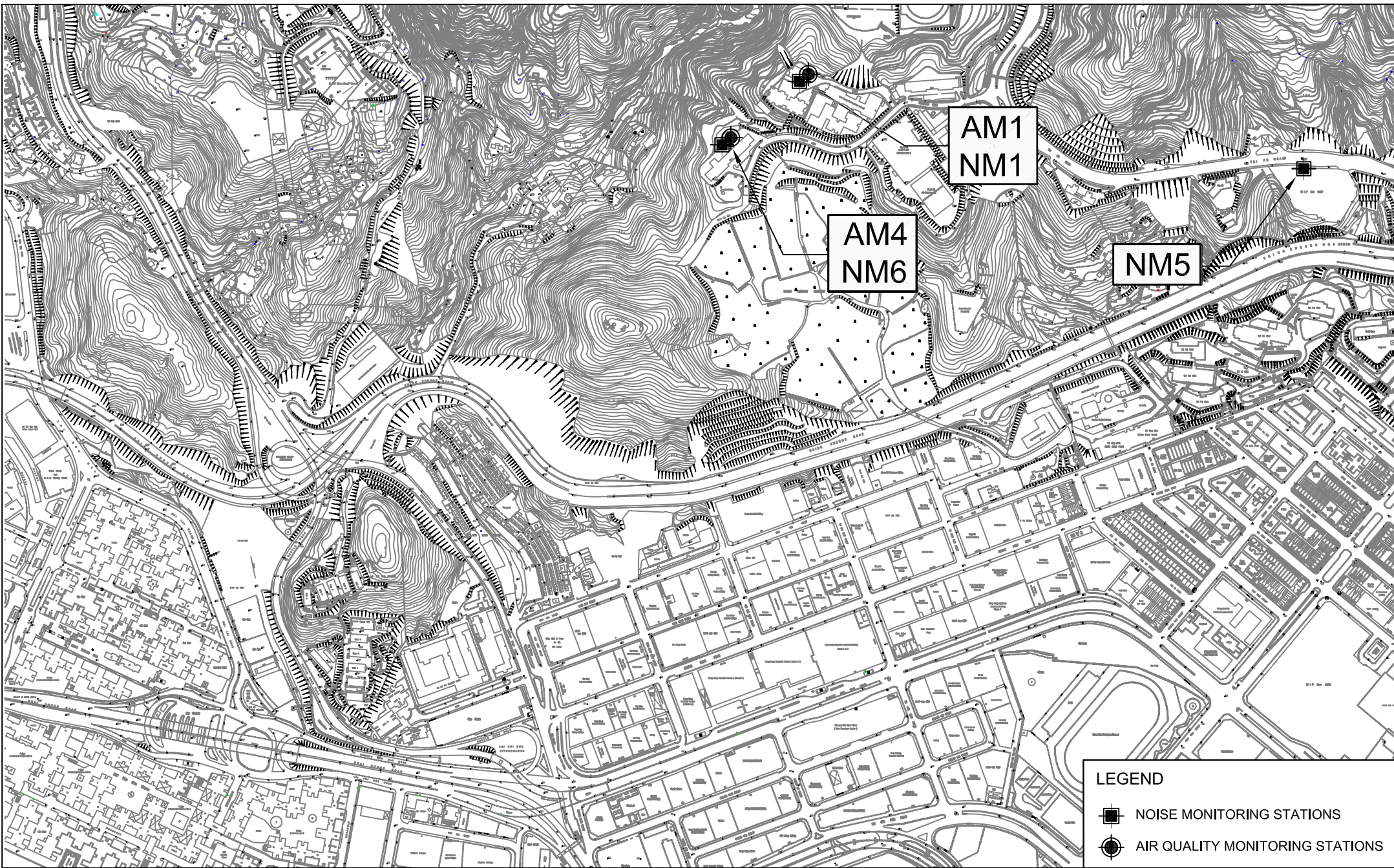
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## FIGURES

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LEGEND	
	NOISE MONITORING STATIONS
	AIR QUALITY MONITORING STATIONS

Title

ROUTE 8 (PREVIOUSLY KNOWN AS ROUTE 9) BETWEEN CHEUNG SHA WAN AND SHA TIN  
 CONTRACT NO. HY/2003/02 - EAGLE'S NEST TUNNEL AND ASSOCIATED WORKS

LOCATIONS OF MONITORING STATIONS

Scale  
1 : 6500 (A4)

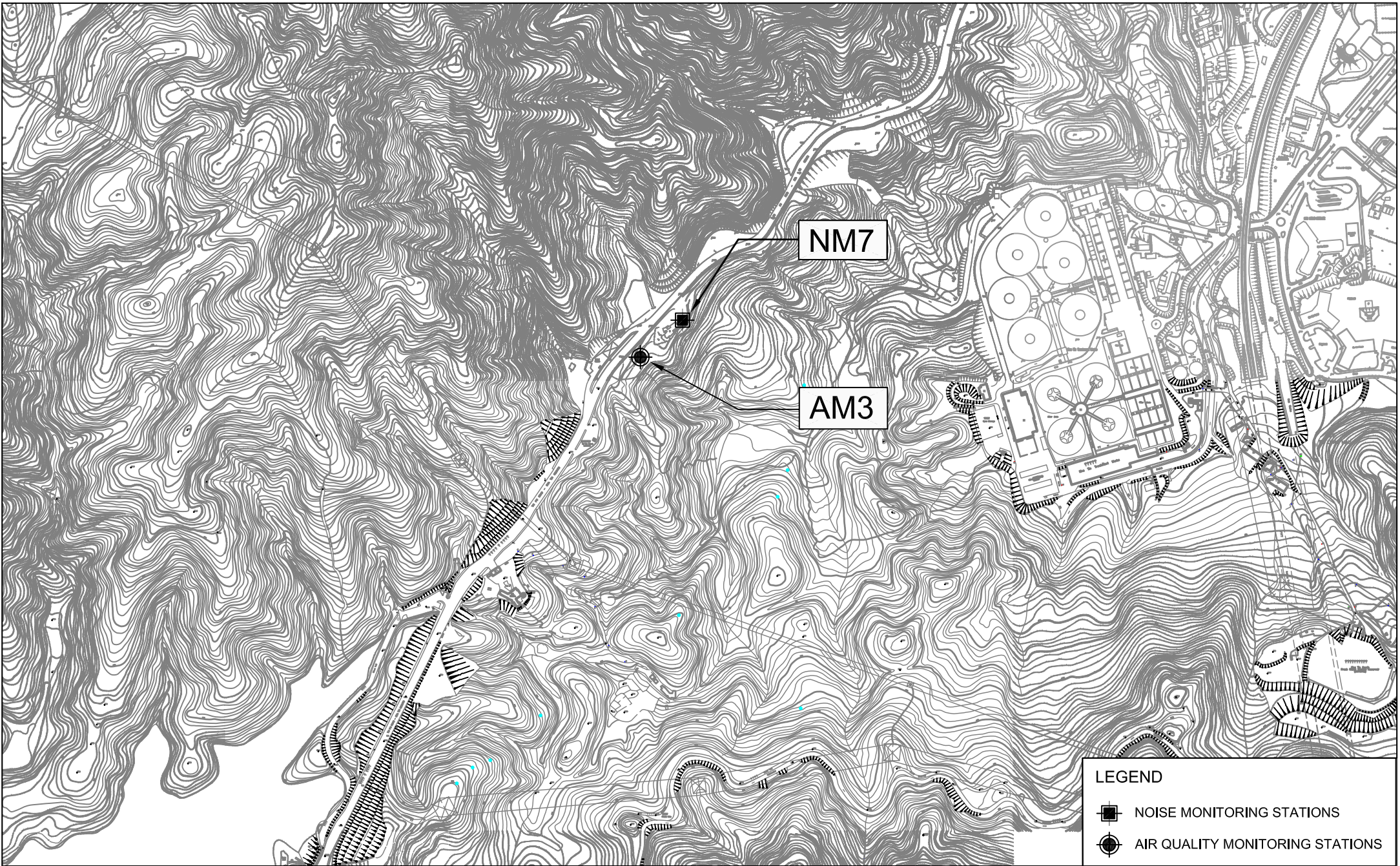
Date  
2006

Project No.  
MA3024

Figure No.  
1a







LEGEND	
	NOISE MONITORING STATIONS
	AIR QUALITY MONITORING STATIONS

Title	ROUTE 8 (PREVIOUSLY KNOWN AS ROUTE 9) BETWEEN CHEUNG SHA WAN AND SHA TIN CONTRACT NO. HY/2003/02 - EAGLE'S NEST TUNNEL AND ASSOCIATED WORKS	
	<b>LOCATIONS OF MONITORING STATIONS</b>	

Scale	1 : 6500 (A4)	Project No.	MA3024
Date	2006	Figure No.	1b



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**APPENDIX A  
ACTION AND LIMIT LEVELS**

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## Appendix A - Action and Limit Levels (ENT)

### 1-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	296	500
AM3	350	
AM4	294	

### 24-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	168	260
AM3	200	
AM4	170	

### Construction Noise

Period	Action Level for all stations	Limit Level, dB(A)			
		NM1	NM5	NM6	NM7
0700-1900 hrs on normal weekdays	When one documented complaint is received	70/65*	75	75	75
0700-2300 hrs on holidays & 1900-2300 hrs on all other days		-	70	65	60
2300-0700 hrs of next day		-	55	50	45

- (\*) Since NM1 is an educational institution, the noise Limit Level (0700-1900 hrs on normal days) is taken as 70 dB(A). The Limit Level will be reduced to 65 dB(A) during school examination periods.

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**APPENDIX B  
COPIES OF CALIBRATION  
CERTIFICATES**

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# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA3024/18/0016

Station Po Leung Kuk Choi Kai Yau School  
 Date: 25-Mar-06  
 Equipment No.: A-01-18

Operator: KH  
 Next Due Date: 24-May-06  
 Serial No. 0723

Ambient Condition			
Temperature, Ta (K)	296.9	Pressure, Pa (mmHg)	762.9

Orifice Transfer Standard Information					
Equipment No.:	A-04-03	Slope, mc	0.0572	Intercept, bc	0.0261
Last Calibration Date:	23-Apr-05	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	22-Apr-06	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	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	[ΔW x (Pa/760) x (298/Ta)] <sup>1/2</sup> Y-axis
1	13.7	3.72	64.50	8.7	2.96
2	10.2	3.21	55.59	6.5	2.56
3	8.8	2.98	51.60	5.4	2.33
4	5.6	2.38	41.07	3.3	1.82
5	3.5	1.88	32.37	1.9	1.38

**By Linear Regression of Y on X**

Slope, mw = 0.0493 Intercept, bw = -0.2064

Correlation coefficient\* = 0.9997

\*If Correlation Coefficient < 0.990, check and recalibrate.

**Set Point Calculation**

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

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

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

Therefore, Set Point; W = (mw x Qstd + bw)<sup>2</sup> x (760 / Pa) x (Ta / 298) = 3.64

Remarks: \_\_\_\_\_

Conducted by: KH Signature: \_\_\_\_\_  
 Checked by: KH Signature: \_\_\_\_\_

Date: 25 Mar 06  
 Date: 25/3/06

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

CINOTECH

File No. MA2027/A14/0016

Station Garden Vilia  
 Date: 9-Feb-06  
 Equipment No.: A-01-14

Operator: WK  
 Next Due Date: 8-Apr-06  
 Serial No. 1354

Ambient Condition			
Temperature, Ta (K)	283.2	Pressure, Pa (mmHg)	770.7

Orifice Transfer Standard Information					
Equipment No.:	A-04-03	Slope, mc	0.0572	Intercept, bc	0.0261
Last Calibration Date:	23-Apr-05	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	22-Apr-06	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	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	[ΔW x (Pa/760) x (298/Ta)] <sup>1/2</sup> Y-axis
1	12.3	3.62	62.88	7.1	2.75
2	10.1	3.28	56.94	5.4	2.40
3	7.4	2.81	48.67	4.2	2.12
4	5.1	2.33	40.33	3.2	1.85
5	3.0	1.79	30.82	1.9	1.42

**By Linear Regression of Y on X**

Slope, mw = 0.0396

Intercept, bw = 0.2108

Correlation coefficient\* = 0.9956

\*If Correlation Coefficient < 0.990, check and recalibrate.

**Set Point Calculation**

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

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

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

Therefore, Set Point; W = (mw x Qstd + bw)<sup>2</sup> x (760 / Pa) x (Ta / 298) = 3.43

Remarks: \_\_\_\_\_

Conducted by: Wk Signature: Kwai  
 Checked by: H Signature: \_\_\_\_\_

Date: 9 Feb 06  
 Date: 9 Feb 06

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

CINOTECH

File No. MA2027/A14/0017

Station: Garden Vilia Operator: WK  
 Date: 8-Apr-06 Next Due Date: 7-Jun-06  
 Equipment No.: A-01-14 Serial No. 1354

Ambient Condition			
Temperature, Ta (K)	295.2	Pressure, Pa (mmHg)	762.6

Orifice Transfer Standard Information					
Equipment No.:	A-04-03	Slope, mc	0.0572	Intercept, bc	0.0261
Last Calibration Date:	23-Apr-05	$mc \times Q_{std} + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	22-Apr-06	$Q_{std} = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	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	[ΔW x (Pa/760) x (298/Ta)] <sup>1/2</sup> Y-axis
1	12.0	3.49	60.50	7.4	2.74
2	9.7	3.13	54.34	5.6	2.38
3	7.3	2.72	47.08	4.1	2.04
4	5.2	2.30	39.67	2.9	1.71
5	3.2	1.80	31.02	2.0	1.42

**By Linear Regression of Y on X**  
 Slope, mw = 0.0445 Intercept, bw : -0.0118  
 Correlation coefficient\* = 0.9951  
 \*If Correlation Coefficient < 0.990, check and recalibrate.

**Set Point Calculation**

From the TSP Field Calibration Curve, take Qstd = 43 CFM  
 From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; W =  $(mw \times Q_{std} + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.57

Remarks: \_\_\_\_\_

Conducted by: Wk. Tang Signature: [Signature] Date: 8 April 06  
 Checked by: [Signature] Signature: [Signature] Date: 8 APRIL 06





# WELLAB LTD.

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Shatin, Hong Kong.  
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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/05/50503
Date of Issue:	2005-05-03
Date Received:	2005-05-03
Date Tested:	2005-05-03
Date Completed:	2005-05-03

**ATTN:** Mr. Henry Leung

Page: 1 of 1

### Certificate of Calibration

**Item for calibration:**

Description : RS232 Integral Vane Digital Anemometer  
Manufacturer : AZ Instrument  
Model No. : 451104  
Serial No. : 9020746  
Project No. : C13  
Equipment No. : A-03-01

**Test conditions:**

Room Temperature : 21 degree Celsius  
Relative Humidity : 70%  
Pressure : 100.8 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	20.0	20.1

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
*Operation Manager*

D.0403

**Andersen Instruments, Inc.**  
Orifice Transfer Standard Certification Worksheet

<b>Date:</b> 04/23/2005	<b>Rootsmeter S/N:</b> 9736553	<b>Ta:</b> 22.00 C
<b>Operator:</b> RA	<b>Calibrator S/N:</b> 1888A	<b>Pa:</b> 761.0 mm Hg
<b>Calibrator Model #:</b> G25A	<b>Placed in service:</b>	

Run	Vol. Init. (m3)	Vol. Final (m3)	Δ Vol. (m3)	Δ Time (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1.00	2.00	1.00	1.404	3.08	2.00
2	3.00	4.00	1.00	0.997	6.17	4.00
3	5.00	6.00	1.00	0.889	7.85	5.00
4	7.00	8.00	1.00	0.848	8.59	5.50
5	9.00	10.00	1.00	0.700	12.42	8.00

**Data Tabulation**

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H (Ta / Pa)}$ (y-axis)
1.007	0.717	1.422	0.996	0.709	0.881
1.003	1.006	2.011	0.992	0.995	1.246
1.000	1.125	2.248	0.990	1.113	1.393
0.999	1.179	2.358	0.989	1.166	1.461
0.994	1.420	2.844	0.984	1.405	1.762
	m =	2.0208		m =	1.2658
	b =	-0.024947		b =	-0.015460
	r =	0.999989		r =	0.999989

**Calculations**

$$Vstd = \Delta Vol \left( \frac{Pa - \Delta P}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)$$

$$Qstd = Vstd / \Delta Time$$

$$Va = \Delta Vol \left( \frac{Pa - \Delta P}{Pa} \right)$$

$$Qa = Va / \Delta Time$$

**For subsequent flow rate calculations:**

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

$$Qa = 1 / m \left( \left( \sqrt{\Delta H (Ta / Pa)} \right) - b \right)$$

**Standard Conditions:**

Tstd: 298.18 °K  
Pstd: 760 mm Hg

**where:**

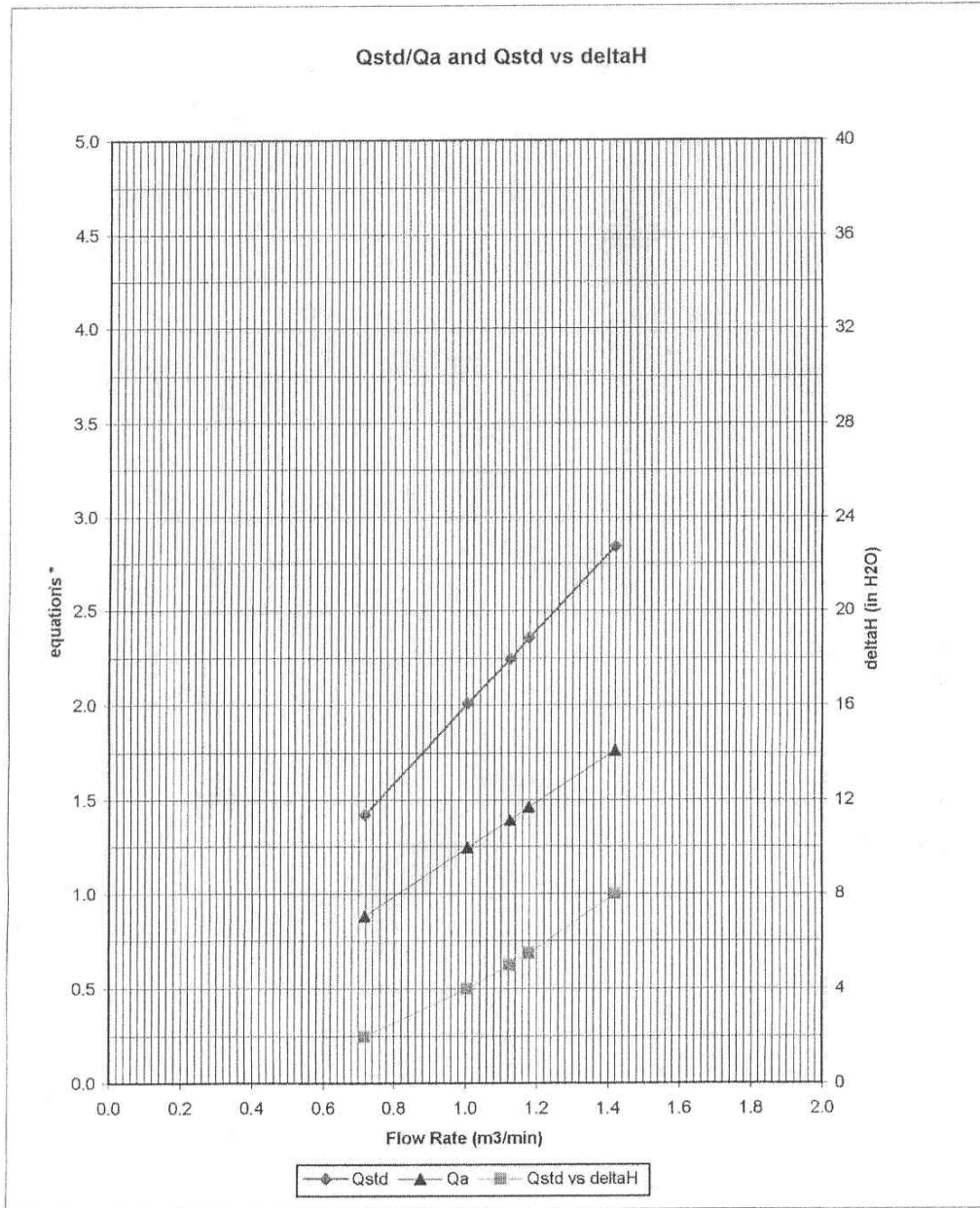
ΔH: calibrator manometer reading (in H2O)  
ΔP: rootsmeter manometer reading (mm Hg)  
Ta: actual absolute temperature (°K)  
Pa: actual barometric pressure (mm Hg)  
b: intercept  
m: slope

**For additional information consult:**

- The Federal Register, Vol. 47, No.234, pp. 54896-54921, Dec. 6, 1982
- Quality Assurance Handbook, Vol II (EPA 60074-77-277a), Section 2.11
- Andersen Instruments, Inc. Instruction Manual

**Notes:**

- Copies of this calibration are not kept on file.
- EPA recommends calibrators should be recalibrated after one year of use.



\* y-axis equations:

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

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

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## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1602-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/N/51216/1
Date of Issue:	2005-12-16
Date Received:	2005-12-15
Date Tested:	2005-12-15
Date Completed:	2005-12-16
Next Due Date:	2006-12-15

**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 Temperature	: 20 degree Celsius
Relative Humidity	: 63%

#### 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

# WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center  
13-15 Yuen Shun Circuit,  
Shatin, Hong Kong.  
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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/51116/1
Date of Issue:	2005-11-16
Date Received:	2005-11-15
Date Tested:	2005-11-15
Date Completed:	2005-11-16
Next Due Date:	2006-11-15

**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.	: 2337666
Microphone No.	: 2289750
Equipment No.	: N-01-02

#### Test conditions:

Room Temperature	: 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

# WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center  
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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/50905-1
Date of Issue:	2005-09-06
Date Received:	2005-09-05
Date Tested:	2005-09-06
Date Completed:	2005-09-06
Next Due Date:	2006-09-05

**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.	: 2359311
Microphone No.	: 2346382
Equipment No.	: N-01-03

#### Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 65%

#### 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*

**PATRICK TSE**  
Laborary Manager

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# 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/N/50905-2
Date of Issue:	2005-09-06
Date Received:	2005-09-05
Date Tested:	2005-09-05
Date Completed:	2005-09-06
Next Due Date:	2006-09-05

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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.	: 2359303
Equipment No.	: N-01-04

**Test conditions:**

Room Temperature	: 21 degree Celsius
Relative Humidity	: 62%
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*

**PATRICK TSE**  
Operation Manager

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## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1602-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/N/51015/1
Date of Issue:	2005-10-15
Date Received:	2005-10-13
Date Tested:	2005-10-14
Date Completed:	2005-10-15
Next Due Date:	2006-10-14

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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.	: 2394976
Microphone No.	: 2407349
Equipment No.	: N-01-05

#### Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 65%

#### 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*

**PATRICK TSE**  
Operation Manager



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Shatin, Hong Kong.  
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## TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
1602-1610 Delta House,  
3 On Yiu Street,  
Shatin, N.T.

Test Report No.:	C/05/1115-1
Date of Issue:	2005-11-15
Date Received:	2005-11-14
Date Tested:	2005-11-15
Date Completed:	2005-11-15
Next Due Date:	2006-11-14

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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 Temperature	: 20 degree Celsius
Relative Humidity	: 65%
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 ± 0.1 dB

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For and On Behalf of **WELLAB Ltd.**

*Patrick*

**PATRICK TSE**  
Operation Manager

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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.	: 4231
Serial No.	: 2343007
Project No.	: C13
Equipment No.	: N-02-02

### Test conditions:

Room Temperature	: 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 ± 0.2 dB

*PREPARED AND CHECKED BY:*

For and On Behalf of **WELLAB Ltd.**



**PATRICK TSE**  
Operation Manager

# WELLAB LTD.

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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/50905-1A
Date of Issue:	2005-09-06
Date Received:	2005-09-05
Date Tested:	2005-09-05
Date Completed:	2005-09-06
Next Due Date:	2006-09-05

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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 Temperature	: 21 degree Celsius
Relative Humidity	: 62%
Pressure	: 1006.5hPa

### Methodology:

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

### Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

*Patrick*

**PATRICK TSE**  
Operation Manager

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**APPENDIX C  
ENVIRONMENTAL MONITORING AND  
AUDIT SCHEDULE**

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**Environmental Monitoring for Eagle's Nest Tunnel  
Tentative Air Quality and Noise Monitoring Schedule for April 2006**

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

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

AM1 Yew Chung International School /Po Leung Kuk Choi Kai Yau School  
 AM3 Garden Villa  
 AM4 Government Quarters

NM1 Yew Chung International School /Po Leung Kuk Choi Kai Yau School  
 NM5 Villa Carlton  
 NM6 Government Quarters  
 NM7 Garden Villa

**Environmental Monitoring for Eagle's Nest Tunnel  
Tentative Air Quality and Noise Monitoring Schedule for May 2006**

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

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

AM1 Yew Chung International School /Po Leung Kuk Choi Kai Yau School  
 AM3 Garden Villa  
 AM4 Government Quarters

NM1 Yew Chung International School /Po Leung Kuk Choi Kai Yau School  
 NM5 Villa Carlton  
 NM6 Government Quarters  
 NM7 Garden Villa

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**APPENDIX D**  
**WIND DATA**

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## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
1-Apr-2006	0:00	0.4	ENE
1-Apr-2006	1:00	0.4	E
1-Apr-2006	2:00	0	ENE
1-Apr-2006	3:00	0	E
1-Apr-2006	4:00	0	NNW
1-Apr-2006	5:00	0	NNE
1-Apr-2006	6:00	0	SSW
1-Apr-2006	7:00	0	SSW
1-Apr-2006	8:00	0	WNW
1-Apr-2006	9:00	0	---
1-Apr-2006	10:00	0.4	ENE
1-Apr-2006	11:00	0.9	NE
1-Apr-2006	12:00	0.4	WNW
1-Apr-2006	13:00	0.4	SW
1-Apr-2006	14:00	0.4	SW
1-Apr-2006	15:00	0.4	SW
1-Apr-2006	16:00	0.9	WSW
1-Apr-2006	17:00	0.4	SW
1-Apr-2006	18:00	0.4	SW
1-Apr-2006	19:00	0	SW
1-Apr-2006	20:00	0	SW
1-Apr-2006	21:00	0	---
1-Apr-2006	22:00	0	---
1-Apr-2006	23:00	0	---
2-Apr-2006	0:00	0	---
2-Apr-2006	1:00	0	SW
2-Apr-2006	2:00	0	SW
2-Apr-2006	3:00	0	SW
2-Apr-2006	4:00	0	SW
2-Apr-2006	5:00	0	---
2-Apr-2006	6:00	0	---
2-Apr-2006	7:00	0	SSW
2-Apr-2006	8:00	0	SSW
2-Apr-2006	9:00	0	SSW
2-Apr-2006	10:00	0	SW
2-Apr-2006	11:00	0	SW
2-Apr-2006	12:00	0	SW
2-Apr-2006	13:00	0	SW
2-Apr-2006	14:00	0	SW
2-Apr-2006	15:00	0.4	WSW
2-Apr-2006	16:00	0.4	NW
2-Apr-2006	17:00	0	NW
2-Apr-2006	18:00	0	---
2-Apr-2006	19:00	0	---
2-Apr-2006	20:00	0	---
2-Apr-2006	21:00	0	---
2-Apr-2006	22:00	0	---
2-Apr-2006	23:00	0	---
3-Apr-2006	0:00	0	---
3-Apr-2006	1:00	0	---
3-Apr-2006	2:00	0	---
3-Apr-2006	3:00	0	NW
3-Apr-2006	4:00	0	NW
3-Apr-2006	5:00	0	---



## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
3-Apr-2006	6:00	0	---
3-Apr-2006	7:00	0	---
3-Apr-2006	8:00	0	---
3-Apr-2006	9:00	0	NW
3-Apr-2006	10:00	0	NW
3-Apr-2006	11:00	0.4	NW
3-Apr-2006	12:00	0.9	SW
3-Apr-2006	13:00	0.9	SW
3-Apr-2006	14:00	1.3	SW
3-Apr-2006	15:00	0.9	SW
3-Apr-2006	16:00	0.4	SW
3-Apr-2006	17:00	0.4	SW
3-Apr-2006	18:00	0	SSW
3-Apr-2006	19:00	0	SSE
3-Apr-2006	20:00	0.4	SE
3-Apr-2006	21:00	0	SE
3-Apr-2006	22:00	0	ESE
3-Apr-2006	23:00	0	SE
4-Apr-2006	0:00	0	SE
4-Apr-2006	1:00	0.4	SSE
4-Apr-2006	2:00	0	ESE
4-Apr-2006	3:00	0	E
4-Apr-2006	4:00	0	SSE
4-Apr-2006	5:00	0	---
4-Apr-2006	6:00	0	SSE
4-Apr-2006	7:00	0	---
4-Apr-2006	8:00	0	SSE
4-Apr-2006	9:00	0	SW
4-Apr-2006	10:00	0	E
4-Apr-2006	11:00	0	WNW
4-Apr-2006	12:00	0	SSE
4-Apr-2006	13:00	0.4	SW
4-Apr-2006	14:00	0.4	SW
4-Apr-2006	15:00	0.4	SW
4-Apr-2006	16:00	0.4	SSW
4-Apr-2006	17:00	0.4	SSW
4-Apr-2006	18:00	0	E
4-Apr-2006	19:00	0	E
4-Apr-2006	20:00	0	---
4-Apr-2006	21:00	0	E
4-Apr-2006	22:00	0	---
4-Apr-2006	23:00	0	E
5-Apr-2006	0:00	0	ESE
5-Apr-2006	1:00	0	ESE
5-Apr-2006	2:00	0	ESE
5-Apr-2006	3:00	0	ESE
5-Apr-2006	4:00	0	ESE
5-Apr-2006	5:00	0	---
5-Apr-2006	6:00	0	---
5-Apr-2006	7:00	0	ESE
5-Apr-2006	8:00	0	---
5-Apr-2006	9:00	0	NNE
5-Apr-2006	10:00	0.4	WSW
5-Apr-2006	11:00	0.9	WSW

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
5-Apr-2006	12:00	1.3	SW
5-Apr-2006	13:00	0.9	SW
5-Apr-2006	14:00	0.4	SW
5-Apr-2006	15:00	0.4	SSW
5-Apr-2006	16:00	0	ESE
5-Apr-2006	17:00	0	SW
5-Apr-2006	18:00	0.4	SSW
5-Apr-2006	19:00	0	WSW
5-Apr-2006	20:00	0	SW
5-Apr-2006	21:00	0	N
5-Apr-2006	22:00	0	SW
5-Apr-2006	23:00	0	SW
6-Apr-2006	0:00	0	SSW
6-Apr-2006	1:00	0	ESE
6-Apr-2006	2:00	0	SW
6-Apr-2006	3:00	0	SW
6-Apr-2006	4:00	0	SW
6-Apr-2006	5:00	0	---
6-Apr-2006	6:00	0	---
6-Apr-2006	7:00	0	---
6-Apr-2006	8:00	0	---
6-Apr-2006	9:00	0	SW
6-Apr-2006	10:00	0.4	SW
6-Apr-2006	11:00	0.9	SW
6-Apr-2006	12:00	1.3	W
6-Apr-2006	13:00	0.4	SW
6-Apr-2006	14:00	0.9	SW
6-Apr-2006	15:00	0.9	SW
6-Apr-2006	16:00	0.4	E
6-Apr-2006	17:00	0.9	ENE
6-Apr-2006	18:00	0.4	ENE
6-Apr-2006	19:00	0	SE
6-Apr-2006	20:00	0	ESE
6-Apr-2006	21:00	0	NE
6-Apr-2006	22:00	0	E
6-Apr-2006	23:00	0	E
7-Apr-2006	0:00	0	E
7-Apr-2006	1:00	0	E
7-Apr-2006	2:00	0	E
7-Apr-2006	3:00	0	E
7-Apr-2006	4:00	0	E
7-Apr-2006	5:00	0	ENE
7-Apr-2006	6:00	0.4	N
7-Apr-2006	7:00	1.3	N
7-Apr-2006	8:00	0.4	N
7-Apr-2006	9:00	0	WNW
7-Apr-2006	10:00	0	N
7-Apr-2006	11:00	0.4	N
7-Apr-2006	12:00	0.4	NE
7-Apr-2006	13:00	0.4	N
7-Apr-2006	14:00	0.9	ENE
7-Apr-2006	15:00	0.4	NE
7-Apr-2006	16:00	1.3	N
7-Apr-2006	17:00	1.8	N

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
7-Apr-2006	18:00	0.9	ENE
7-Apr-2006	19:00	0.4	SSW
7-Apr-2006	20:00	0	SSW
7-Apr-2006	21:00	0	SSW
7-Apr-2006	22:00	0.4	WNW
7-Apr-2006	23:00	0.4	NW
8-Apr-2006	0:00	0.4	NE
8-Apr-2006	1:00	0	---
8-Apr-2006	2:00	0	---
8-Apr-2006	3:00	0	---
8-Apr-2006	4:00	0	---
8-Apr-2006	5:00	0	NNE
8-Apr-2006	6:00	0	NNE
8-Apr-2006	7:00	0	NNE
8-Apr-2006	8:00	0	NNE
8-Apr-2006	9:00	0	ENE
8-Apr-2006	10:00	1.3	NE
8-Apr-2006	11:00	0.4	ENE
8-Apr-2006	12:00	0.9	NE
8-Apr-2006	13:00	0.9	ENE
8-Apr-2006	14:00	0.9	ENE
8-Apr-2006	15:00	0.4	E
8-Apr-2006	16:00	0	ENE
8-Apr-2006	17:00	0	E
8-Apr-2006	18:00	0	ENE
8-Apr-2006	19:00	0	ENE
8-Apr-2006	20:00	0	ENE
8-Apr-2006	21:00	0	ESE
8-Apr-2006	22:00	0	S
8-Apr-2006	23:00	0	---
9-Apr-2006	0:00	0	---
9-Apr-2006	1:00	0	---
9-Apr-2006	2:00	0	W
9-Apr-2006	3:00	0	NW
9-Apr-2006	4:00	0	E
9-Apr-2006	5:00	0.4	SE
9-Apr-2006	6:00	0	SSE
9-Apr-2006	7:00	0	SSE
9-Apr-2006	8:00	0.4	ENE
9-Apr-2006	9:00	0.4	ENE
9-Apr-2006	10:00	0.4	ENE
9-Apr-2006	11:00	0.4	NE
9-Apr-2006	12:00	0.4	ESE
9-Apr-2006	13:00	0.4	ENE
9-Apr-2006	14:00	0.4	SW
9-Apr-2006	15:00	0.4	SSW
9-Apr-2006	16:00	0.4	WNW
9-Apr-2006	17:00	0.4	WSW
9-Apr-2006	18:00	0.4	SSW
9-Apr-2006	19:00	0	W
9-Apr-2006	20:00	0	E
9-Apr-2006	21:00	0.4	WNW
9-Apr-2006	22:00	0.4	N
9-Apr-2006	23:00	0	WSW

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
10-Apr-2006	0:00	0	SW
10-Apr-2006	1:00	0	SW
10-Apr-2006	2:00	0	WSW
10-Apr-2006	3:00	0	WSW
10-Apr-2006	4:00	0	---
10-Apr-2006	5:00	0	---
10-Apr-2006	6:00	0	WSW
10-Apr-2006	7:00	0	WSW
10-Apr-2006	8:00	0.4	SW
10-Apr-2006	9:00	0.4	S
10-Apr-2006	10:00	1.8	SW
10-Apr-2006	11:00	3.1	SW
10-Apr-2006	12:00	2.7	SW
10-Apr-2006	13:00	2.7	SW
10-Apr-2006	14:00	3.1	SW
10-Apr-2006	15:00	3.1	SW
10-Apr-2006	16:00	2.7	SW
10-Apr-2006	17:00	1.8	SW
10-Apr-2006	18:00	2.2	SW
10-Apr-2006	19:00	0.9	SSW
10-Apr-2006	20:00	0.4	SW
10-Apr-2006	21:00	0	ESE
10-Apr-2006	22:00	0	ESE
10-Apr-2006	23:00	0	ESE
11-Apr-2006	0:00	0	NE
11-Apr-2006	1:00	0	NNE
11-Apr-2006	2:00	0	NNE
11-Apr-2006	3:00	0	NNE
11-Apr-2006	4:00	0	E
11-Apr-2006	5:00	0	E
11-Apr-2006	6:00	0	NW
11-Apr-2006	7:00	0	E
11-Apr-2006	8:00	0	WSW
11-Apr-2006	9:00	0	W
11-Apr-2006	10:00	0.4	SW
11-Apr-2006	11:00	0.9	SW
11-Apr-2006	12:00	0.4	SE
11-Apr-2006	13:00	0.9	W
11-Apr-2006	14:00	0.4	SSW
11-Apr-2006	15:00	0.4	WNW
11-Apr-2006	16:00	0.4	WNW
11-Apr-2006	17:00	0.4	NW
11-Apr-2006	18:00	0.4	WNW
11-Apr-2006	19:00	0.4	NW
11-Apr-2006	20:00	0	NNW
11-Apr-2006	21:00	0.4	N
11-Apr-2006	22:00	0.4	N
11-Apr-2006	23:00	0.4	NE
12-Apr-2006	0:00	0	NNE
12-Apr-2006	1:00	0	NNW
12-Apr-2006	2:00	0	NNE
12-Apr-2006	3:00	0	ESE
12-Apr-2006	4:00	0	E
12-Apr-2006	5:00	0	ENE

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
12-Apr-2006	6:00	0	ENE
12-Apr-2006	7:00	0	S
12-Apr-2006	8:00	0.4	N
12-Apr-2006	9:00	0.9	N
12-Apr-2006	10:00	0.9	N
12-Apr-2006	11:00	0.9	WNW
12-Apr-2006	12:00	0.9	NNE
12-Apr-2006	13:00	1.3	SW
12-Apr-2006	14:00	1.3	SSW
12-Apr-2006	15:00	1.3	SSW
12-Apr-2006	16:00	0.9	SW
12-Apr-2006	17:00	0.9	SSW
12-Apr-2006	18:00	0.4	SSW
12-Apr-2006	19:00	0	ENE
12-Apr-2006	20:00	0	ENE
12-Apr-2006	21:00	0	E
12-Apr-2006	22:00	0	ESE
12-Apr-2006	23:00	0	E
13-Apr-2006	0:00	0	WNW
13-Apr-2006	1:00	0	WSW
13-Apr-2006	2:00	0	SW
13-Apr-2006	3:00	0	SSE
13-Apr-2006	4:00	0	SSE
13-Apr-2006	5:00	0	SSE
13-Apr-2006	6:00	1.8	WSW
13-Apr-2006	7:00	0.4	SW
13-Apr-2006	8:00	0.4	W
13-Apr-2006	9:00	0.4	W
13-Apr-2006	10:00	0.9	N
13-Apr-2006	11:00	0.9	N
13-Apr-2006	12:00	1.8	N
13-Apr-2006	13:00	1.8	N
13-Apr-2006	14:00	1.3	N
13-Apr-2006	15:00	1.3	N
13-Apr-2006	16:00	0.9	N
13-Apr-2006	17:00	0.9	NE
13-Apr-2006	18:00	0.4	NE
13-Apr-2006	19:00	0.9	NE
13-Apr-2006	20:00	0.9	N
13-Apr-2006	21:00	0.9	N
13-Apr-2006	22:00	1.3	N
13-Apr-2006	23:00	0.9	N
14-Apr-2006	0:00	0.4	N
14-Apr-2006	1:00	1.3	N
14-Apr-2006	2:00	0.9	N
14-Apr-2006	3:00	0.4	N
14-Apr-2006	4:00	0.4	NNE
14-Apr-2006	5:00	0.9	N
14-Apr-2006	6:00	0.9	N
14-Apr-2006	7:00	0.9	N
14-Apr-2006	8:00	0.9	N
14-Apr-2006	9:00	0.4	N
14-Apr-2006	10:00	0.9	N
14-Apr-2006	11:00	0.4	N

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
14-Apr-2006	12:00	0.9	N
14-Apr-2006	13:00	1.3	N
14-Apr-2006	14:00	1.3	N
14-Apr-2006	15:00	0.9	N
14-Apr-2006	16:00	0.9	N
14-Apr-2006	17:00	0.4	NE
14-Apr-2006	18:00	0.4	NE
14-Apr-2006	19:00	0.4	N
14-Apr-2006	20:00	0.4	WNW
14-Apr-2006	21:00	0.4	N
14-Apr-2006	22:00	0.4	N
14-Apr-2006	23:00	0.9	N
15-Apr-2006	0:00	0.9	N
15-Apr-2006	1:00	0.9	N
15-Apr-2006	2:00	0.9	NNE
15-Apr-2006	3:00	0.9	N
15-Apr-2006	4:00	0.9	N
15-Apr-2006	5:00	0.9	N
15-Apr-2006	6:00	1.3	N
15-Apr-2006	7:00	0.9	N
15-Apr-2006	8:00	1.3	N
15-Apr-2006	9:00	1.3	N
15-Apr-2006	10:00	0.9	N
15-Apr-2006	11:00	0.9	N
15-Apr-2006	12:00	0.9	N
15-Apr-2006	13:00	0.9	NNW
15-Apr-2006	14:00	0.9	N
15-Apr-2006	15:00	1.3	N
15-Apr-2006	16:00	1.3	N
15-Apr-2006	17:00	0.9	N
15-Apr-2006	18:00	1.3	N
15-Apr-2006	19:00	0.9	N
15-Apr-2006	20:00	0.9	N
15-Apr-2006	21:00	0.9	N
15-Apr-2006	22:00	0.9	N
15-Apr-2006	23:00	1.3	N
16-Apr-2006	0:00	1.8	N
16-Apr-2006	1:00	2.7	N
16-Apr-2006	2:00	2.2	N
16-Apr-2006	3:00	2.2	N
16-Apr-2006	4:00	1.8	N
16-Apr-2006	5:00	1.8	N
16-Apr-2006	6:00	1.3	N
16-Apr-2006	7:00	1.3	N
16-Apr-2006	8:00	0.9	N
16-Apr-2006	9:00	1.3	N
16-Apr-2006	10:00	0.9	N
16-Apr-2006	11:00	1.3	N
16-Apr-2006	12:00	1.3	N
16-Apr-2006	13:00	0.4	N
16-Apr-2006	14:00	1.3	N
16-Apr-2006	15:00	1.3	N
16-Apr-2006	16:00	0.9	N
16-Apr-2006	17:00	1.3	NE

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
16-Apr-2006	18:00	0.4	NE
16-Apr-2006	19:00	0.4	N
16-Apr-2006	20:00	0.4	ENE
16-Apr-2006	21:00	0	ENE
16-Apr-2006	22:00	0	NE
16-Apr-2006	23:00	0.4	NE
17-Apr-2006	0:00	0.4	NE
17-Apr-2006	1:00	0.4	NE
17-Apr-2006	2:00	0	NE
17-Apr-2006	3:00	0	---
17-Apr-2006	4:00	0	---
17-Apr-2006	5:00	0	---
17-Apr-2006	6:00	0	---
17-Apr-2006	7:00	0	NE
17-Apr-2006	8:00	0	---
17-Apr-2006	9:00	0	SSW
17-Apr-2006	10:00	0.4	NW
17-Apr-2006	11:00	0.9	N
17-Apr-2006	12:00	0.9	N
17-Apr-2006	13:00	0.9	N
17-Apr-2006	14:00	0.9	N
17-Apr-2006	15:00	0.4	SW
17-Apr-2006	16:00	0.4	SSW
17-Apr-2006	17:00	0	SSW
17-Apr-2006	18:00	0.4	ENE
17-Apr-2006	19:00	0.4	ESE
17-Apr-2006	20:00	0.4	ESE
17-Apr-2006	21:00	0	E
17-Apr-2006	22:00	0.4	ENE
17-Apr-2006	23:00	0	NE
18-Apr-2006	0:00	0	NE
18-Apr-2006	1:00	0	NE
18-Apr-2006	2:00	0	WNW
18-Apr-2006	3:00	0	---
18-Apr-2006	4:00	0	---
18-Apr-2006	5:00	0	N
18-Apr-2006	6:00	0.9	ENE
18-Apr-2006	7:00	0	NE
18-Apr-2006	8:00	0	NNE
18-Apr-2006	9:00	0	N
18-Apr-2006	10:00	0	NNE
18-Apr-2006	11:00	0	NNW
18-Apr-2006	12:00	0.9	NE
18-Apr-2006	13:00	0.9	ENE
18-Apr-2006	14:00	0.9	SW
18-Apr-2006	15:00	0.9	N
18-Apr-2006	16:00	0.9	WNW
18-Apr-2006	17:00	0.4	WSW
18-Apr-2006	18:00	0	SSW
18-Apr-2006	19:00	0	SW
18-Apr-2006	20:00	0	---
18-Apr-2006	21:00	0	SW
18-Apr-2006	22:00	0	---
18-Apr-2006	23:00	0	---

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
19-Apr-2006	0:00	0	---
19-Apr-2006	1:00	0	---
19-Apr-2006	2:00	0	---
19-Apr-2006	3:00	0	---
19-Apr-2006	4:00	0	---
19-Apr-2006	5:00	0	---
19-Apr-2006	6:00	0	---
19-Apr-2006	7:00	0	---
19-Apr-2006	8:00	0	---
19-Apr-2006	9:00	0	---
19-Apr-2006	10:00	0.4	SW
19-Apr-2006	11:00	1.3	N
19-Apr-2006	12:00	1.8	W
19-Apr-2006	13:00	1.8	NNW
19-Apr-2006	14:00	1.3	NNW
19-Apr-2006	15:00	1.3	N
19-Apr-2006	16:00	0.9	NNW
19-Apr-2006	17:00	0.4	WNW
19-Apr-2006	18:00	0.4	W
19-Apr-2006	19:00	0.4	W
19-Apr-2006	20:00	0	---
19-Apr-2006	21:00	0	---
19-Apr-2006	22:00	0	---
19-Apr-2006	23:00	0	---
20-Apr-2006	0:00	0	---
20-Apr-2006	1:00	0	---
20-Apr-2006	2:00	0	---
20-Apr-2006	3:00	0	---
20-Apr-2006	4:00	0	W
20-Apr-2006	5:00	0	---
20-Apr-2006	6:00	0	---
20-Apr-2006	7:00	0	---
20-Apr-2006	8:00	0	---
20-Apr-2006	9:00	0	W
20-Apr-2006	10:00	0.4	W
20-Apr-2006	11:00	0.4	NNW
20-Apr-2006	12:00	0.4	NNW
20-Apr-2006	13:00	0.4	N
20-Apr-2006	14:00	0.4	NE
20-Apr-2006	15:00	0.9	NE
20-Apr-2006	16:00	1.8	ENE
20-Apr-2006	17:00	1.8	ENE
20-Apr-2006	18:00	1.8	NE
20-Apr-2006	19:00	1.8	NE
20-Apr-2006	20:00	1.3	NE
20-Apr-2006	21:00	1.3	NE
20-Apr-2006	22:00	1.8	NE
20-Apr-2006	23:00	1.3	ENE
21-Apr-2006	0:00	2.2	ENE
21-Apr-2006	1:00	1.8	NE
21-Apr-2006	2:00	1.8	NE
21-Apr-2006	3:00	1.3	NE
21-Apr-2006	4:00	0.4	NE
21-Apr-2006	5:00	0	ENE



## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
21-Apr-2006	6:00	0	ENE
21-Apr-2006	7:00	0	NW
21-Apr-2006	8:00	0.4	NE
21-Apr-2006	9:00	0.4	ENE
21-Apr-2006	10:00	0.4	SW
21-Apr-2006	11:00	0.9	ENE
21-Apr-2006	12:00	0.9	N
21-Apr-2006	13:00	0.9	E
21-Apr-2006	14:00	0.9	SSW
21-Apr-2006	15:00	0.4	SSW
21-Apr-2006	16:00	0.4	SW
21-Apr-2006	17:00	0.4	NNE
21-Apr-2006	18:00	0	SW
21-Apr-2006	19:00	0	SW
21-Apr-2006	20:00	0.4	S
21-Apr-2006	21:00	0	S
21-Apr-2006	22:00	0	SSW
21-Apr-2006	23:00	0	SW
22-Apr-2006	0:00	0	SSE
22-Apr-2006	1:00	0	---
22-Apr-2006	2:00	0	SSE
22-Apr-2006	3:00	0	---
22-Apr-2006	4:00	0	---
22-Apr-2006	5:00	0	SSE
22-Apr-2006	6:00	0	SSE
22-Apr-2006	7:00	0	SE
22-Apr-2006	8:00	0	NNE
22-Apr-2006	9:00	0	N
22-Apr-2006	10:00	0.4	SW
22-Apr-2006	11:00	0.9	SW
22-Apr-2006	12:00	0.9	SW
22-Apr-2006	13:00	0.4	SSW
22-Apr-2006	14:00	0.9	SW
22-Apr-2006	15:00	0.4	SW
22-Apr-2006	16:00	0.4	WNW
22-Apr-2006	17:00	0.4	SW
22-Apr-2006	18:00	0.4	SW
22-Apr-2006	19:00	0.4	ESE
22-Apr-2006	20:00	0	W
22-Apr-2006	21:00	0	WNW
22-Apr-2006	22:00	0	SE
22-Apr-2006	23:00	0	SE
23-Apr-2006	0:00	0	SE
23-Apr-2006	1:00	0	SW
23-Apr-2006	2:00	0	WSW
23-Apr-2006	3:00	0	---
23-Apr-2006	4:00	0	---
23-Apr-2006	5:00	0	---
23-Apr-2006	6:00	0	---
23-Apr-2006	7:00	0	---
23-Apr-2006	8:00	0	WSW
23-Apr-2006	9:00	0.4	ESE
23-Apr-2006	10:00	0.4	ESE
23-Apr-2006	11:00	0.4	SW

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
23-Apr-2006	12:00	0.9	SW
23-Apr-2006	13:00	0.9	SW
23-Apr-2006	14:00	0.4	SW
23-Apr-2006	15:00	0.4	SW
23-Apr-2006	16:00	0.4	WNW
23-Apr-2006	17:00	0	WSW
23-Apr-2006	18:00	0	W
23-Apr-2006	19:00	0	SSW
23-Apr-2006	20:00	0	SW
23-Apr-2006	21:00	0	SSW
23-Apr-2006	22:00	0	S
23-Apr-2006	23:00	0	SSW
24-Apr-2006	0:00	0	SSW
24-Apr-2006	1:00	0.4	NW
24-Apr-2006	2:00	0	NW
24-Apr-2006	3:00	0	WNW
24-Apr-2006	4:00	0	---
24-Apr-2006	5:00	0	---
24-Apr-2006	6:00	0	---
24-Apr-2006	7:00	0	WNW
24-Apr-2006	8:00	0	WNW
24-Apr-2006	9:00	0	WNW
24-Apr-2006	10:00	0	WNW
24-Apr-2006	11:00	0	WNW
24-Apr-2006	12:00	0.4	W
24-Apr-2006	13:00	0	E
24-Apr-2006	14:00	0.4	E
24-Apr-2006	15:00	1.3	ENE
24-Apr-2006	16:00	0.4	ENE
24-Apr-2006	17:00	0.9	ENE
24-Apr-2006	18:00	0.4	ENE
24-Apr-2006	19:00	0.4	ENE
24-Apr-2006	20:00	0	ESE
24-Apr-2006	21:00	0	ESE
24-Apr-2006	22:00	0.4	ENE
24-Apr-2006	23:00	0.4	E
25-Apr-2006	0:00	0.4	ENE
25-Apr-2006	1:00	0.4	ENE
25-Apr-2006	2:00	0.4	ENE
25-Apr-2006	3:00	0	ENE
25-Apr-2006	4:00	0	ENE
25-Apr-2006	5:00	0	NNW
25-Apr-2006	6:00	0	N
25-Apr-2006	7:00	0	ESE
25-Apr-2006	8:00	0.9	ENE
25-Apr-2006	9:00	0.4	E
25-Apr-2006	10:00	0.9	NE
25-Apr-2006	11:00	1.3	ENE
25-Apr-2006	12:00	1.3	ENE
25-Apr-2006	13:00	1.3	ENE
25-Apr-2006	14:00	2.2	ENE
25-Apr-2006	15:00	1.3	ENE
25-Apr-2006	16:00	0.9	ENE
25-Apr-2006	17:00	0.9	ENE

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
25-Apr-2006	18:00	0.9	ENE
25-Apr-2006	19:00	0.9	E
25-Apr-2006	20:00	0.4	ENE
25-Apr-2006	21:00	0	ENE
25-Apr-2006	22:00	0	ENE
25-Apr-2006	23:00	0	ESE
26-Apr-2006	0:00	0	E
26-Apr-2006	1:00	0	SSW
26-Apr-2006	2:00	0	---
26-Apr-2006	3:00	0	S
26-Apr-2006	4:00	0	S
26-Apr-2006	5:00	0	S
26-Apr-2006	6:00	0	S
26-Apr-2006	7:00	0	S
26-Apr-2006	8:00	0	S
26-Apr-2006	9:00	0	SSE
26-Apr-2006	10:00	0.4	ESE
26-Apr-2006	11:00	0	ENE
26-Apr-2006	12:00	0.4	E
26-Apr-2006	13:00	0.4	SW
26-Apr-2006	14:00	0.9	WSW
26-Apr-2006	15:00	1.8	SW
26-Apr-2006	16:00	1.8	SW
26-Apr-2006	17:00	0.9	SW
26-Apr-2006	18:00	0.4	SW
26-Apr-2006	19:00	0	SE
26-Apr-2006	20:00	0	E
26-Apr-2006	21:00	0	---
26-Apr-2006	22:00	0	E
26-Apr-2006	23:00	0	---
27-Apr-2006	0:00	0	---
27-Apr-2006	1:00	0	E
27-Apr-2006	2:00	0	E
27-Apr-2006	3:00	0	SSW
27-Apr-2006	4:00	0	SSE
27-Apr-2006	5:00	0	SSE
27-Apr-2006	6:00	0	SSE
27-Apr-2006	7:00	0	---
27-Apr-2006	8:00	0	SSE
27-Apr-2006	9:00	0	SSE
27-Apr-2006	10:00	0	SW
27-Apr-2006	11:00	0.4	SW
27-Apr-2006	12:00	0.4	SW
27-Apr-2006	13:00	0.4	SSW
27-Apr-2006	14:00	0.4	E
27-Apr-2006	15:00	0.4	SSE
27-Apr-2006	16:00	3.1	NE
27-Apr-2006	17:00	2.2	NE
27-Apr-2006	18:00	2.2	NNE
27-Apr-2006	19:00	1.3	NE
27-Apr-2006	20:00	0	NE
27-Apr-2006	21:00	0	E
27-Apr-2006	22:00	0	---
27-Apr-2006	23:00	0	---

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
28-Apr-2006	0:00	0	---
28-Apr-2006	1:00	0	---
28-Apr-2006	2:00	0	E
28-Apr-2006	3:00	0	WSW
28-Apr-2006	4:00	0	W
28-Apr-2006	5:00	0	---
28-Apr-2006	6:00	0	---
28-Apr-2006	7:00	0	W
28-Apr-2006	8:00	0	W
28-Apr-2006	9:00	0	SE
28-Apr-2006	10:00	0.4	WNW
28-Apr-2006	11:00	0	SW
28-Apr-2006	12:00	0	WNW
28-Apr-2006	13:00	0	ENE
28-Apr-2006	14:00	0	ENE
28-Apr-2006	15:00	0.4	ENE
28-Apr-2006	16:00	0.4	NNE
28-Apr-2006	17:00	0.9	W
28-Apr-2006	18:00	0	NNE
28-Apr-2006	19:00	0	ENE
28-Apr-2006	20:00	0.4	E
28-Apr-2006	21:00	0.4	E
28-Apr-2006	22:00	0	NE
28-Apr-2006	23:00	0	E
29-Apr-2006	0:00	0	---
29-Apr-2006	1:00	0	---
29-Apr-2006	2:00	0	---
29-Apr-2006	3:00	0	---
29-Apr-2006	4:00	0	---
29-Apr-2006	5:00	0	E
29-Apr-2006	6:00	0	---
29-Apr-2006	7:00	0	---
29-Apr-2006	8:00	0	SE
29-Apr-2006	9:00	0	WNW
29-Apr-2006	10:00	0.9	NNW
29-Apr-2006	11:00	2.2	NW
29-Apr-2006	12:00	2.2	N
29-Apr-2006	13:00	1.8	NW
29-Apr-2006	14:00	1.3	N
29-Apr-2006	15:00	2.2	N
29-Apr-2006	16:00	2.7	N
29-Apr-2006	17:00	3.1	N
29-Apr-2006	18:00	1.3	NNE
29-Apr-2006	19:00	1.3	WNW
29-Apr-2006	20:00	0.9	W
29-Apr-2006	21:00	0.4	W
29-Apr-2006	22:00	0.4	S
29-Apr-2006	23:00	0	S
30-Apr-2006	0:00	0	S
30-Apr-2006	1:00	0	N
30-Apr-2006	2:00	1.3	NNE
30-Apr-2006	3:00	1.3	NNE
30-Apr-2006	4:00	0.9	NNE
30-Apr-2006	5:00	0.9	ENE

## Appendix D - Wind Data

Date	Time	Wind Speed m/s	Direction
30-Apr-2006	6:00	0.4	E
30-Apr-2006	7:00	0.4	NE
30-Apr-2006	8:00	0.4	NE
30-Apr-2006	9:00	0.9	NE
30-Apr-2006	10:00	0.9	NE
30-Apr-2006	11:00	1.3	NE
30-Apr-2006	12:00	2.7	NNE
30-Apr-2006	13:00	3.1	N
30-Apr-2006	14:00	3.1	NE
30-Apr-2006	15:00	3.6	NE
30-Apr-2006	16:00	3.6	NE
30-Apr-2006	17:00	3.6	NE
30-Apr-2006	18:00	3.1	NE
30-Apr-2006	19:00	2.2	NE
30-Apr-2006	20:00	2.2	NE
30-Apr-2006	21:00	1.8	ENE
30-Apr-2006	22:00	2.7	NE
30-Apr-2006	23:00	2.7	NE

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**APPENDIX E  
1-HOUR TSP MONITORING RESULTS  
AND GRAPHICAL PRESENTATION**

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## Appendix E - 1-hour TSP Monitoring Results

### Location AM1 - Po Leung Kuk Choi Kai Yau School

Date	Weather Condition	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )
		Initial	Final	Initial	Final	Initial	Final							
3-Apr-06	Sunny	2.8555	2.8608	1.21	1.21	4061.9	4062.9	297.6	761.3	0.0053	1.21	72.6	1.0	73.0
4-Apr-06	Cloudy	2.8593	2.8662	1.21	1.21	4062.9	4063.9	298.3	761.1	0.0069	1.21	72.5	1.0	95.2
6-Apr-06	Sunny	2.8631	2.8743	1.20	1.20	4063.9	4064.9	299.7	760.9	0.0112	1.20	72.3	1.0	154.9
10-Apr-06	Sunny	2.8643	2.8687	1.20	1.20	4088.9	4089.9	301.4	757.6	0.0044	1.20	72.0	1.0	61.1
11-Apr-06	Sunny	2.8625	2.8715	1.20	1.20	4089.9	4090.9	301.2	758.7	0.0090	1.20	72.1	1.0	124.9
13-Apr-06	Cloudy	2.8556	2.8605	1.21	1.21	4114.9	4115.9	295.1	760.5	0.0049	1.21	72.8	1.0	67.3
19-Apr-06	Sunny	2.8606	2.8762	1.21	1.21	4115.9	4116.9	296.7	763.9	0.0156	1.21	72.8	1.0	214.4
20-Apr-06	Sunny	2.8668	2.8818	1.21	1.21	4140.9	4141.9	298.6	762.8	0.0150	1.21	72.5	1.0	206.9
21-Apr-06	Sunny	2.9076	2.9205	1.21	1.21	4141.9	4142.9	296.7	761.5	0.0129	1.21	72.7	1.0	177.5
25-Apr-06	Cloudy	2.8783	2.8905	1.21	1.21	4142.9	4143.9	298.0	760.4	0.0122	1.21	72.5	1.0	168.3
26-Apr-06	Sunny	2.8800	2.8839	1.20	1.20	4167.9	4168.9	301.9	758.4	0.0039	1.20	72.0	1.0	54.2
27-Apr-06	Cloudy	2.8756	2.8831	1.20	1.20	4168.9	4169.9	301.1	759.1	0.0075	1.20	72.1	1.0	104.0
													Min	54.2
													Max	214.4
													Average	125.2

### Location AM 3 - Garden Villa

Date	Weather Condition	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )
		Initial	Final	Initial	Final	Initial	Final							
3-Apr-06	Sunny	2.8590	2.8666	1.17	1.17	4408.1	4409.1	297.3	761.6	0.0076	1.17	70.2	1.0	108.2
4-Apr-06	Cloudy	2.8301	2.8411	1.17	1.17	4409.1	4410.1	298.3	761.1	0.0110	1.17	70.0	1.0	157.1
6-Apr-06	Sunny	2.8425	2.8524	1.17	1.17	4410.1	4411.1	299.7	760.9	0.0099	1.17	70.4	1.0	140.7
10-Apr-06	Cloudy	2.8570	2.8604	1.20	1.20	4435.1	4436.1	303.4	756.7	0.0034	1.20	72.1	1.0	47.2
11-Apr-06	Sunny	2.8458	2.8550	1.21	1.21	4436.1	4437.1	301.2	758.7	0.0092	1.21	72.4	1.0	127.1
13-Apr-06	Cloudy	2.8628	2.8705	1.22	1.22	4461.1	4462.1	294.8	760.7	0.0077	1.22	73.3	1.0	105.1
19-Apr-06	Sunny	2.8704	2.8829	1.22	1.22	4462.1	4463.1	296.7	763.9	0.0125	1.22	73.2	1.0	170.8
20-Apr-06	Cloudy	2.8678	2.8825	1.22	1.22	4487.1	4488.1	298.4	763.0	0.0147	1.22	73.0	1.0	201.5
21-Apr-06	Sunny	2.8813	2.9043	1.22	1.22	4488.1	4489.1	296.7	761.5	0.0230	1.22	73.1	1.0	314.7
25-Apr-06	Cloudy	2.8582	2.8879	1.21	1.21	4489.1	4490.1	298.0	760.4	0.0297	1.21	72.9	1.0	<b>407.6</b>
26-Apr-06	Cloudy	2.8661	2.8694	1.21	1.21	4514.1	4515.1	302.0	758.4	0.0033	1.21	72.3	1.0	45.6
27-Apr-06	Sunny	2.8511	2.8627	1.21	1.21	4515.1	4516.1	301.1	759.1	0.0116	1.21	72.4	1.0	160.1
													Min	45.6
													Max	<b>407.6</b>
													Average	165.5

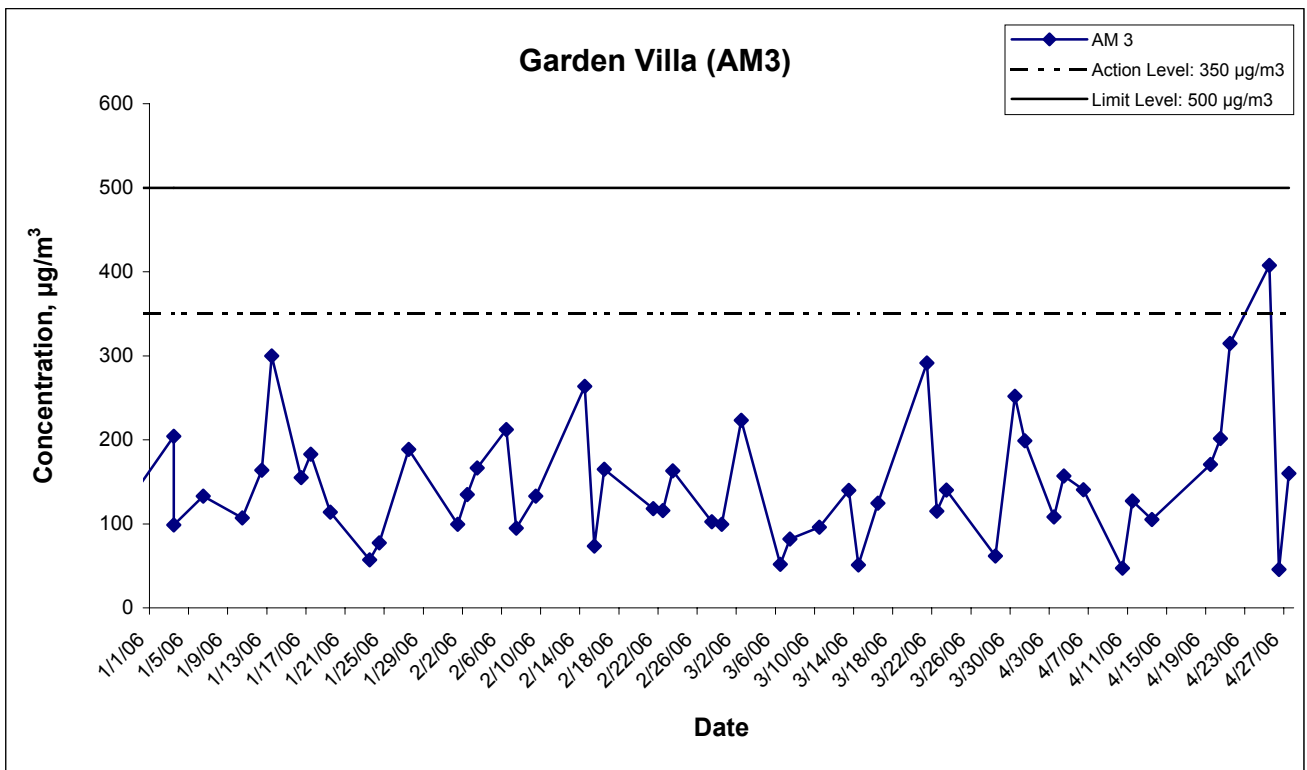
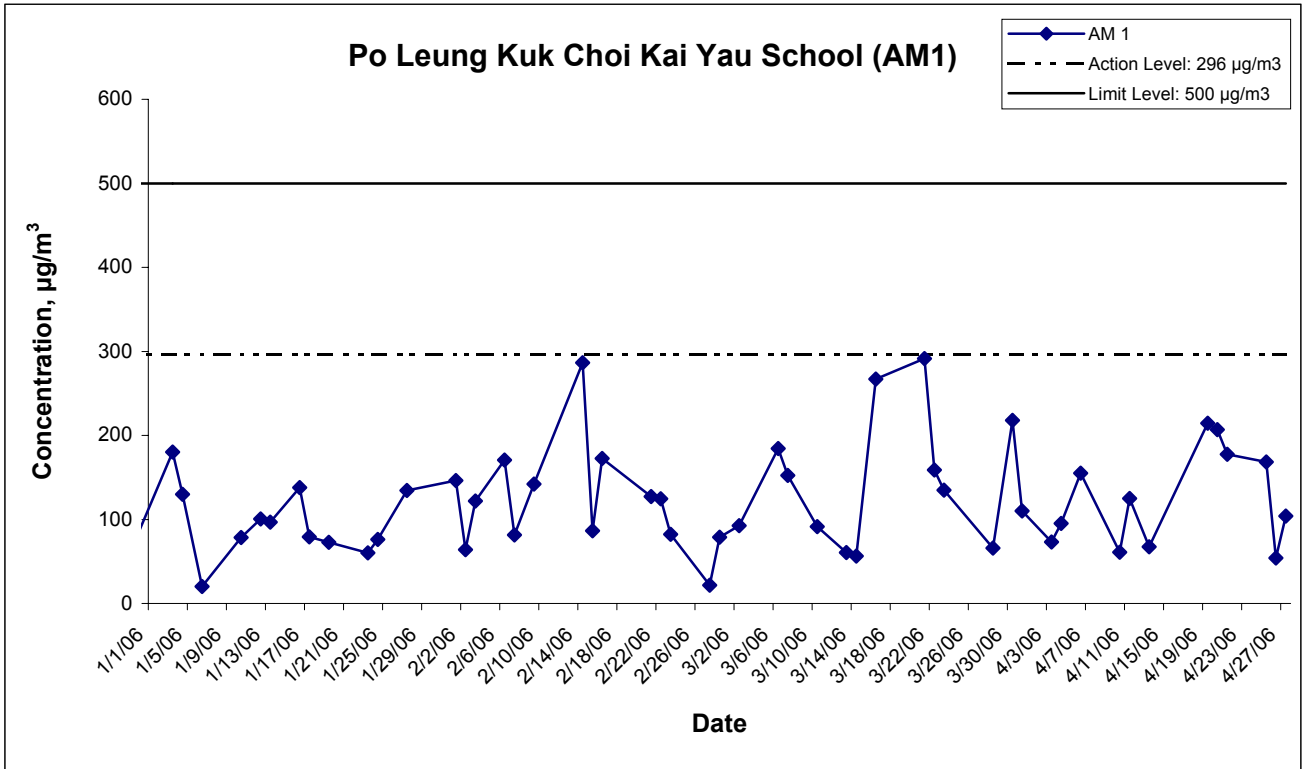
## Appendix E - 1-hour TSP Monitoring Results

### Location AM 4 - Government Quarters

Date	Weather Condition	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )	
		Initial	Final	Initial	Final	Initial	Final								
3-Apr-06	Sunny	2.8464	2.8534	1.21	1.21	4020.8	4021.8	297.6	761.3	0.0070	1.21	72.7	1.0	96.3	
4-Apr-06	Cloudy	2.8734	2.8791	1.21	1.21	4021.8	4022.8	298.3	761.1	0.0057	1.21	72.6	1.0	78.5	
6-Apr-06	Sunny	2.8594	2.8654	1.21	1.21	4022.8	4023.8	300.0	760.7	0.0060	1.21	72.4	1.0	82.9	
10-Apr-06	Sunny	2.8782	2.8825	1.20	1.20	4047.8	4048.8	301.4	757.6	0.0043	1.20	72.1	1.0	59.7	
11-Apr-06	Sunny	2.8665	2.8721	1.20	1.20	4048.8	4049.8	301.2	758.7	0.0056	1.20	72.1	1.0	77.6	
13-Apr-06	Cloudy	2.8428	2.8490	1.22	1.22	4073.8	4074.8	295.1	760.5	0.0062	1.22	73.0	1.0	85.0	
19-Apr-06	Sunny	2.8638	2.8807	1.22	1.22	4074.8	4075.8	296.7	763.9	0.0169	1.22	72.9	1.0	231.8	
20-Apr-06	Sunny	2.8845	2.8993	1.18	1.18	4099.8	4100.8	298.6	762.8	0.0148	1.18	70.7	1.0	209.2	
21-Apr-06	Sunny	2.8776	2.8934	1.21	1.21	4100.8	4101.8	296.7	761.5	0.0158	1.21	72.8	1.0	217.0	
25-Apr-06	Cloudy	2.8856	2.8961	1.18	1.18	4101.5	4102.5	298.0	760.4	0.0105	1.18	70.7	1.0	148.5	
26-Apr-06	Sunny	2.8549	2.8592	1.20	1.20	4126.5	4127.5	301.9	758.4	0.0043	1.20	72.0	1.0	59.7	
27-Apr-06	Cloudy	2.8878	2.8940	1.20	1.20	4127.5	4128.5	301.1	759.1	0.0062	1.20	72.2	1.0	85.9	
														Min	59.7
														Max	231.8
														Average	119.3

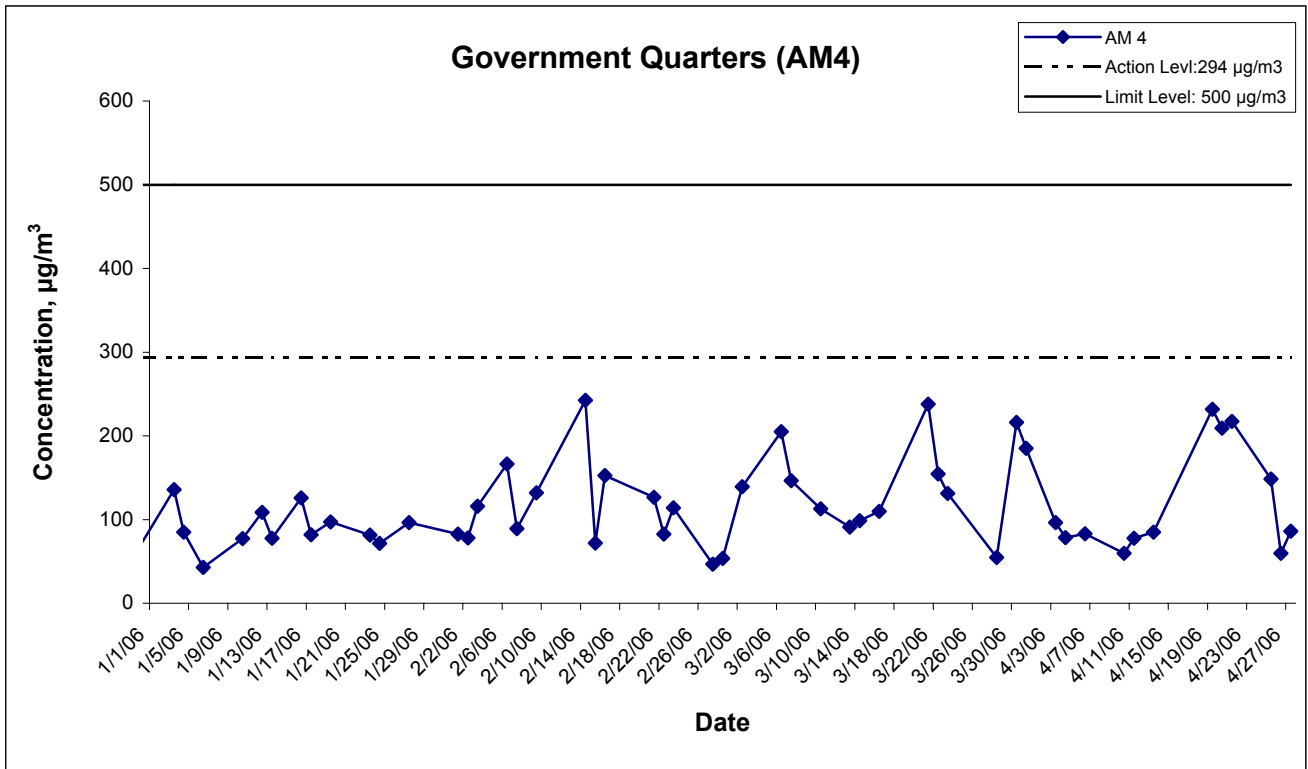


### 1-hr TSP Levels



Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works Graphical Presentation of 1-hour TSP Impact Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Apr 06	Appendix E	

# 1-hr TSP Levels



Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works Graphical Presentation of 1-hour TSP Impact Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Apr 06	Appendix E	

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**APPENDIX F  
24-HOUR TSP MONITORING RESULTS  
AND GRAPHICAL PRESENTATION**

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## Appendix F - 24-hour TSP Monitoring Results

### Location AM1 - Po Leung Kuk Choi Kai Yau School

Date	Weather Condition	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )
		Initial	Final	Initial	Final	Initial	Final							
1-Apr-06	Sunny	2.8701	3.0143	1.21	1.21	4037.9	4061.9	296.3	762.1	0.1442	1.21	1745.6	24.0	82.6
7-Apr-06	Sunny	2.8560	2.9445	1.21	1.21	4064.9	4088.9	297.2	761.6	0.0885	1.21	1742.5	24.0	50.8
12-Apr-06	Cloudy	2.8559	2.9396	1.20	1.20	4090.9	4114.9	301.7	757.3	0.0837	1.20	1727.3	24.0	48.5
19-Apr-06	Sunny	2.8627	3.0343	1.21	1.21	4116.9	4140.9	297.0	763.8	0.1716	1.21	1745.6	24.0	98.3
25-Apr-06	Sunny	2.8708	3.0665	1.21	1.21	4143.9	4167.9	298.9	760.1	0.1957	1.21	1735.9	24.0	112.7
													Min	48.5
													Max	112.7
													Average	78.6

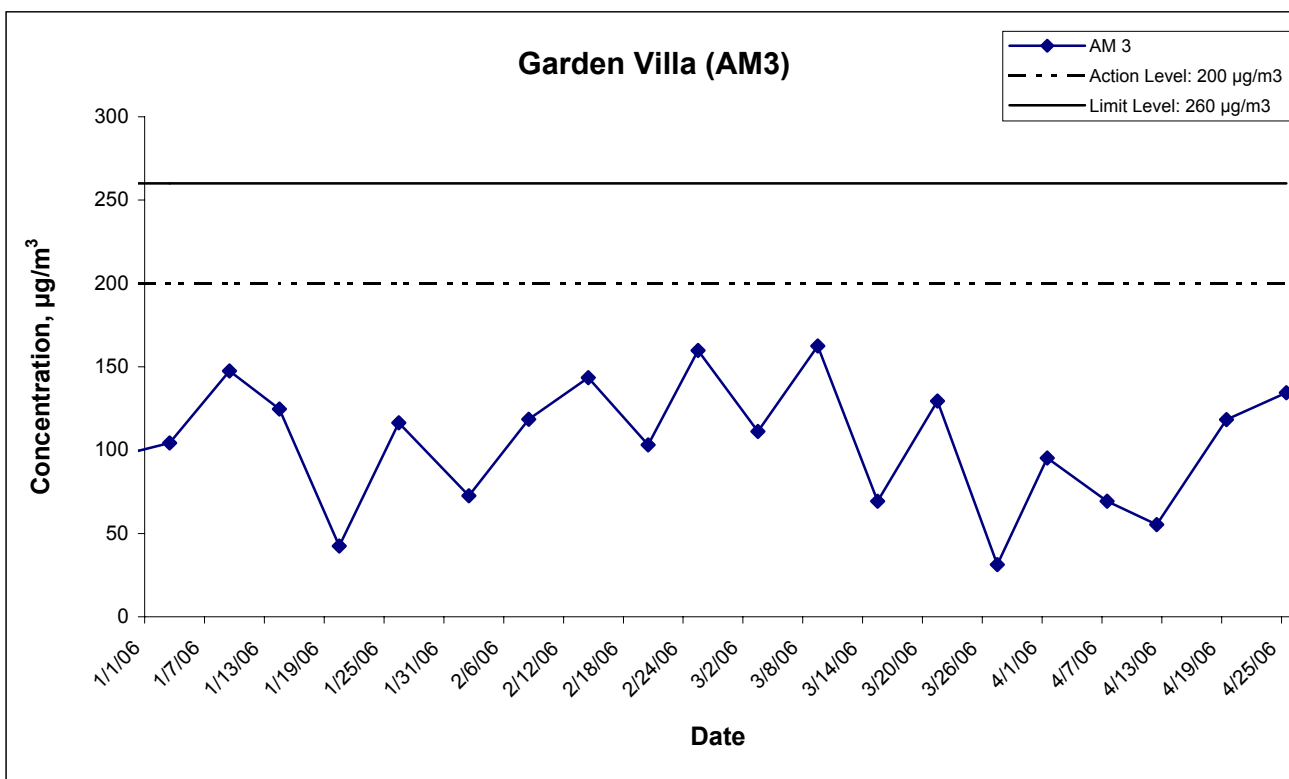
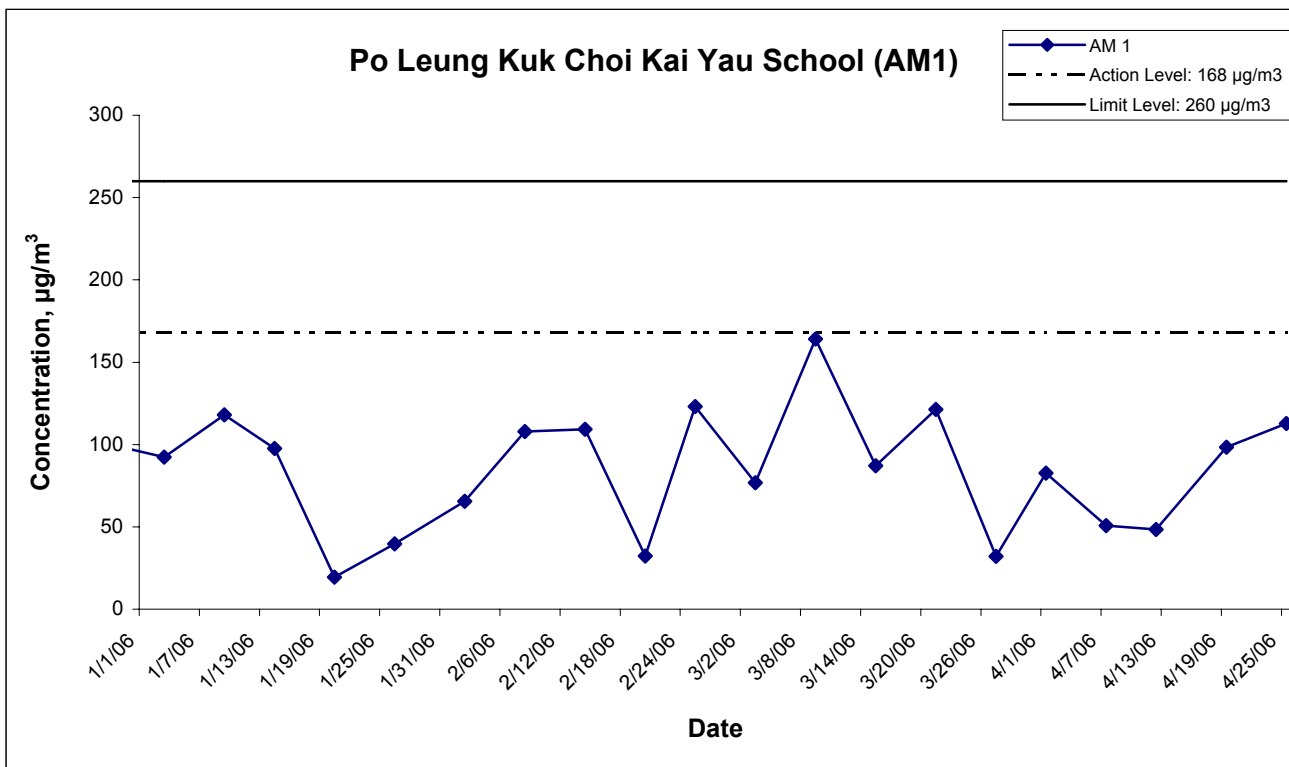
### Location AM 3 - Garden Villa

Date	Weather Condition	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )
		Initial	Final	Initial	Final	Initial	Final							
1-Apr-06	Sunny	2.8658	3.0265	1.17	1.17	4384.1	4408.1	296.3	762.1	0.1607	1.17	1688.6	24.0	95.2
7-Apr-06	Sunny	2.8735	2.9904	1.17	1.17	4411.1	4435.1	296.7	762.4	0.1169	1.17	1687.7	24.0	69.3
12-Apr-06	Cloudy	2.8773	2.9734	1.20	1.20	4437.1	4461.1	301.7	757.3	0.0961	1.20	1734.6	24.0	55.4
19-Apr-06	Sunny	2.8955	3.1032	1.22	1.22	4463.1	4487.1	296.7	763.9	0.2077	1.22	1756.6	24.0	118.2
25-Apr-06	Sunny	2.8862	3.1211	1.21	1.21	4409.1	4514.1	298.3	760.2	0.2349	1.21	1747.9	105.0	134.4
													Min	55.4
													Max	134.4
													Average	94.5

### Location AM 4 - Government Quarters

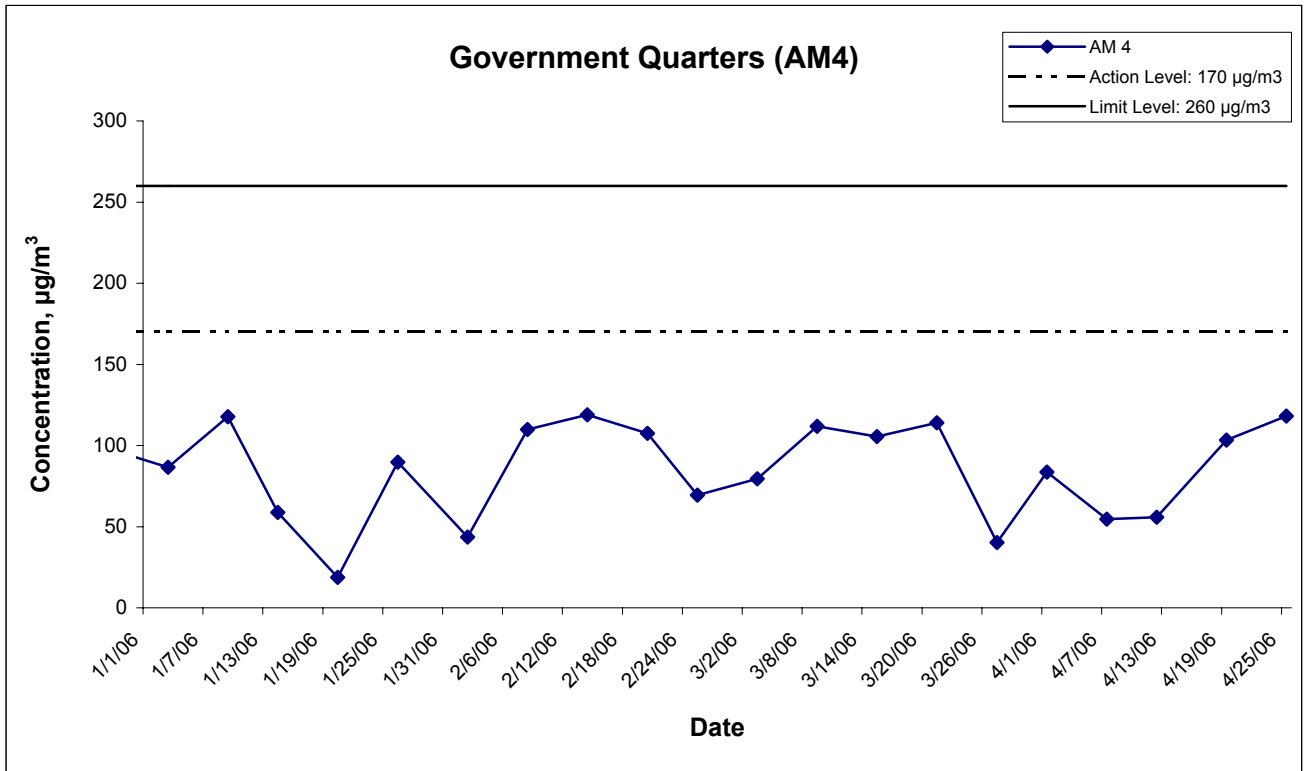
Date	Weather Condition	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Air Temp. (K)	Atmospheric Pressure(Pa)	Particulate weight(g)	Av. flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Sampling Time(hrs.)	Conc. (µg/m <sup>3</sup> )
		Initial	Final	Initial	Final	Initial	Final							
1-Apr-06	Sunny	2.8704	3.0168	1.21	1.21	3996.8	4020.8	296.3	762.1	0.1464	1.21	1749.0	24.0	83.7
7-Apr-06	Sunny	2.8564	2.9518	1.21	1.21	4023.8	4047.8	296.7	762.4	0.0954	1.21	1748.2	24.0	54.6
12-Apr-06	Cloudy	2.8830	2.9794	1.20	1.20	4049.8	4073.8	301.7	757.3	0.0964	1.20	1728.1	24.0	55.8
19-Apr-06	Sunny	2.8686	3.0446	1.18	1.18	4075.8	4099.8	297.0	763.7	0.1760	1.18	1703.6	24.0	103.3
25-Apr-06	Sunny	2.8643	3.0697	1.21	1.21	4102.5	4126.5	298.9	760.1	0.2054	1.21	1739.4	24.0	118.1
													Min	54.6
													Max	118.1
													Average	83.1

### 24-hr TSP Levels



Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works Graphical Presentation of 24-hour TSP Impact Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Apr 06	Appendix F	

## 24-hr TSP Levels



Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works Graphical Presentation of 24-hour TSP Impact Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Apr 06	Appendix F	

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**APPENDIX G  
NOISE MONITORING RESULTS AND  
GRAPHICAL PRESENTATION**

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## Appendix G - Noise Monitoring Results

Location NM1 - Po Leung Kuk Choi Kai Yau School						
Date	Time	Weather	Unit: dB (A) (30-min)			Remarks
			Measured Noise Level			
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	
6-Apr-06	14:25	Sunny	66.3	68.5	63.0	
13-Apr-06	14:55	Cloudy	62.4	64.0	59.0	
21-Apr-06	10:10	Sunny	64.1	69.0	64.5	
27-Apr-06	11:00	Cloudy	65.2	66.5	61.0	

Location NM5 - Villa Carlton								
Date	Time	Weather	Unit: dB (A) (30-min)			Baseline Level	Construction Noise Level	Remarks
			Measured Noise Level					
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>			
6-Apr-06	15:50	Sunny	79.1	81.5	69.5	77.1	74.8	The major noise source was identified as traffic noise from Tai Po Road.
13-Apr-06	14:05	Cloudy	76.8	78.5	70.5		76.8, Measured ≤ Baseline	
21-Apr-06	16:05	Sunny	77.9	81.5	68.0		70.2	
27-Apr-06	10:15	Cloudy	77.8	79.5	72.5		69.5	

Location NM6 - Government Quarters						
Date	Time	Weather	Unit: dB (A) (30-min)			Remarks
			Measured Noise Level			
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	
6-Apr-06	15:05	Sunny	64.2	66.0	60.5	
13-Apr-06	15:43	Cloudy	64.8	66.5	61.0	
21-Apr-06	11:05	Sunny	69.8	72.0	65.0	
27-Apr-06	11:35	Cloudy	63.2	65.5	58.5	

Location NM7 - Garden Vilia								
Date	Time	Weather	Unit: dB (A) (30-min)			Baseline Level	Construction Noise Level	Remarks
			Measured Noise Level					
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>			
6-Apr-06	7:05	Sunny	71.8	72.5	69.0	59.0	71.6	
13-Apr-06	13:00	Cloudy	65.4	68.0	60.5		64.3	
21-Apr-06	10:00	Sunny	64.7	66.5	61.5		63.3	
27-Apr-06	8:45	Sunny	72.7	76.5	70.0		72.5	

# Construction Noise Level (Leq) = Measured Noise Level (Leq) - Baseline Noise Level (Leq)

\*Bolted value indicated limit level exceedance



## Appendix G - Noise Monitoring Results

### Restricted Hours - 19:00 to 23:00 on normal weekdays

Location NM5 - Villa Carlton										
Date	Time	Weather	dB (A) (5-min)				Average L <sub>eq</sub>	Baseline Level	Construction Noise Level	Remarks
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>		L <sub>eq</sub>		
6-Apr-06	19:05	Cloudy	74.7	78.0	70.0	74.2	75.8	74.2, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.	
	19:10		73.8	77.0	69.5					
	19:15		74.2	77.5	69.5					
13-Apr-06	19:50	Cloudy	73.2	76.5	69.0	73.3				
	19:55		73.4	76.5	69.0					
	20:00		73.4	76.5	69.0					
21-Apr-06	19:15	Cloudy	72.8	76.0	69.0	72.9				
	19:20		72.6	76.0	69.5					
	19:25		73.3	76.0	69.5					
27-Apr-06	19:00	Cloudy	74.1	77.0	70.0	74.4				
	19:05		74.5	77.5	70.0					
	19:10		74.6	77.5	70.5					

Location NM6 - Government Quarters										
Date	Time	Weather	dB (A) (5-min)				Average L <sub>eq</sub>	Baseline Level	Construction Noise Level	Remarks
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>		L <sub>eq</sub>		
6-Apr-06	20:00	Cloudy	54.7	59.0	51.0	55	56.1	55.0, Measured ≤ Baseline	-	
	20:05		54.8	59.0	51.0					
	20:10		55.5	59.5	51.5					
13-Apr-06	19:00	Cloudy	55.8	58.0	50.5	55.4				
	19:05		55.4	58.0	50.5					
	19:10		54.9	58.0	50.0					
21-Apr-06	20:00	Cloudy	55.8	59.0	51.0	54.9				
	20:05		54.3	58.0	50.5					
	20:10		54.4	58.0	50.5					
27-Apr-06	19:30	Cloudy	55.7	58.5	51.0	55.9				
	19:35		55.8	59.0	51.0					
	19:40		56.1	59.0	51.0					

Location NM7 - Garden Villa										
Date	Time	Weather	dB (A) (5-min)				Average L <sub>eq</sub>	Baseline Level	Construction Noise Level	Remarks
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>		L <sub>eq</sub>		
6-Apr-06	19:15	Cloudy	58.7	60.5	56.5	59.1	58.3	51.4	The major noise source was identified as traffic noise from Tai Po Road.	
	19:20		59.3	61.5	57.0					
	19:25		59.4	61.0	57.0					
13-Apr-06	19:20	Cloudy	57.4	60.0	54.0	57.3				
	19:25		57.3	60.5	54.0					
	19:30		57.3	60.5	54.5					
21-Apr-06	19:00	Cloudy	59.5	60.5	55.5	59.6				
	19:05		59.7	60.5	56.0					
	19:10		59.6	60.5	56.0					
27-Apr-06	19:35	Cloudy	58.8	61.0	54.5	58.7				
	19:40		58.6	61.0	54.0					
	19:45		58.6	60.5	54.0					

# Construction Noise Level (Leq) = Measured Noise Level (Leq) - Baseline Noise Level (Leq)

\*Bolted value indicated limit level exceedance

## Appendix G - Noise Monitoring Results

### Restricted Hours - 23:00 to 07:00 on normal weekdays

Location NM5 - Villa Carlton															
Date	Time	Weather	dB (A) (5-min)				Average L <sub>eq</sub>	Baseline Level	Construction Noise Level	Remarks					
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>		L <sub>eq</sub>	L <sub>eq</sub>						
6-Apr-06	23:00	Cloudy	73.5	77.0	70.0	73.9	74.3	73.9, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.						
	23:05		73.4	77.0	70.0										
	23:10		74.7	78.0	71.0										
13-Apr-06	23:00	Cloudy	72.7	77.0	70.0	72.9				74.3	72.9, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.			
	23:05		72.8	77.0	70.0										
	23:10		73.3	77.5	70.5										
21-Apr-06	23:00	Cloudy	73.1	77.5	70.0	73.3							74.3	73.3, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.
	23:05		73.3	77.5	70.0										
	23:10		73.4	77.5	70.0										
27-Apr-06	23:00	Cloudy	73.3	77.0	69.0	73.9	74.3	73.9, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.						
	23:05		74.2	77.5	70.0										
	23:10		74.1	77.5	70.0										

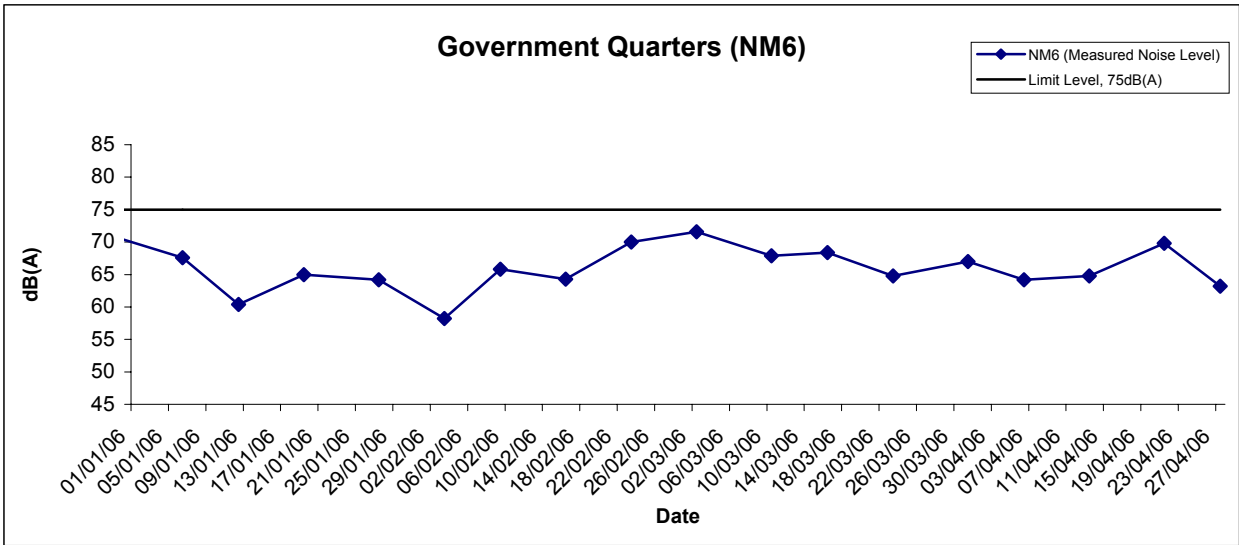
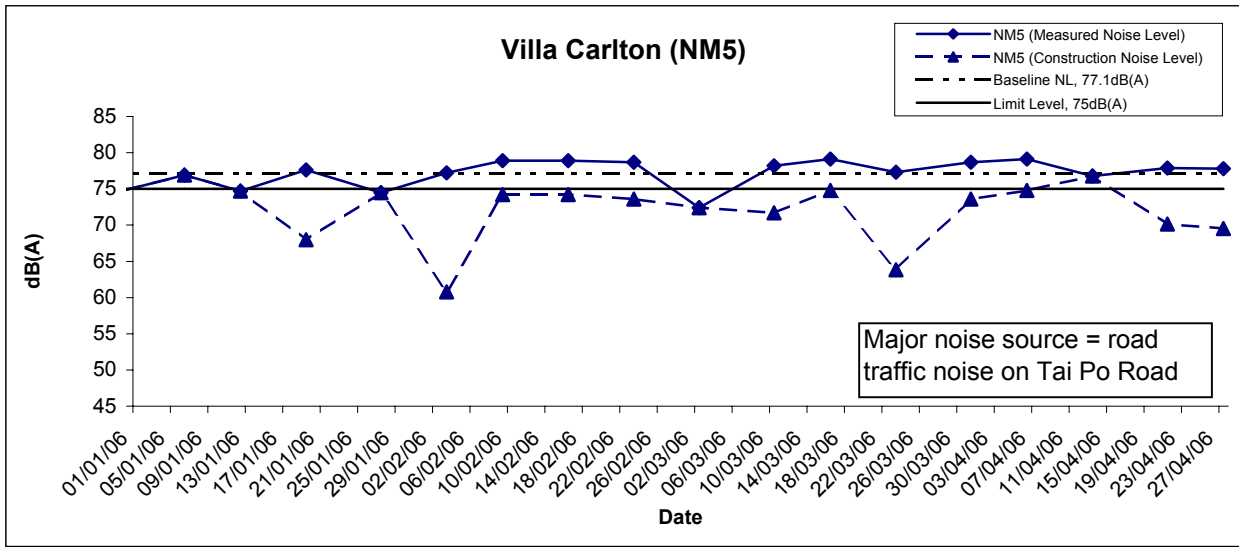
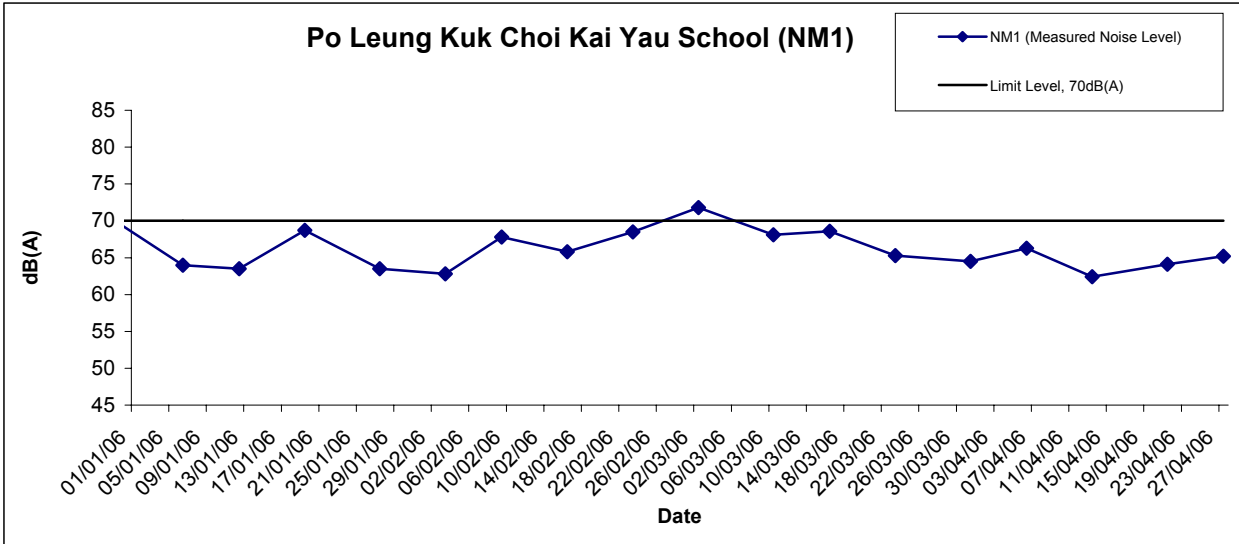
Location NM6 - Government Quarters															
Date	Time	Weather	dB (A) (5-min)				Average L <sub>eq</sub>	Baseline Level	Construction Noise Level	Remarks					
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>		L <sub>eq</sub>	L <sub>eq</sub>						
6-Apr-06	23:25	Cloudy	50.2	54.0	49.0	50.4	52.8	50.4, Measured ≤ Baseline	-						
	23:30		50.4	54.0	49.0										
	23:35		50.5	54.0	49.0										
13-Apr-06	23:27	Cloudy	51.7	55.0	49.0	52.1				52.8	52.1, Measured ≤ Baseline	-			
	23:32		51.8	55.0	49.0										
	23:37		51.6	56.0	50.0										
21-Apr-06	23:25	Cloudy	51.8	54.0	49.0	51.9							52.8	51.9, Measured ≤ Baseline	-
	23:30		52.0	54.0	49.0										
	23:35		51.8	54.0	49.0										
27-Apr-06	23:22	Cloudy	51.5	55.0	48.5	51.8	52.8	51.8, Measured ≤ Baseline	-						
	23:27		51.6	55.0	49.0										
	23:32		52.2	56.0	49.5										

Location NM7 - Garden Villa															
Date	Time	Weather	dB (A) (5-min)				Average L <sub>eq</sub>	Baseline Level	Construction Noise Level	Remarks					
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>		L <sub>eq</sub>	L <sub>eq</sub>						
6-Apr-06	23:50	Cloudy	54.4	59.0	50.0	54.5	56.5	54.5, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.						
	0:00		54.3	59.0	50.0										
	0:05		54.9	59.5	50.5										
13-Apr-06	23:55	Cloudy	56.0	60.0	52.0	55.9				56.5	55.9, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.			
	0:00		55.7	59.5	52.0										
	0:05		55.9	59.5	52.0										
21-Apr-06	23:48	Cloudy	54.1	59.0	51.0	54.3							56.5	54.3, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.
	23:53		54.4	59.5	51.0										
	23:58		54.5	59.5	51.0										
27-Apr-06	23:45	Cloudy	54.8	58.5	50.5	54.1	56.5	54.1, Measured ≤ Baseline	The major noise source was identified as traffic noise from Tai Po Road.						
	23:50		53.6	58.0	50.0										
	23:55		53.7	58.0	50.0										

# Construction Noise Level (Leq) = Measured Noise Level (Leq) - Baseline Noise Level (Leq)

\*Bolted value indicated limit level exceedance

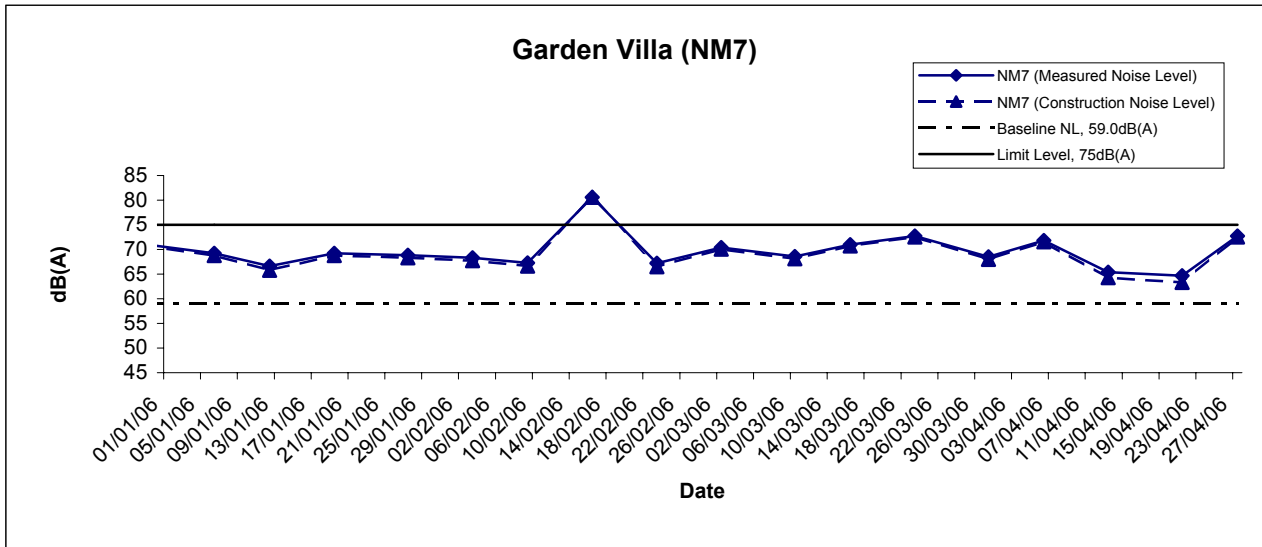
### Noise Levels



\* Construction Noise Level = Measured Noise Level - Baseline Level  
 (If the measured noise level is lower than the baseline level, the construction noise level will be taken as the measured one)

Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works  Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA3024	CINOTECH
	Date Apr 06	Appendix G	

## Noise Levels

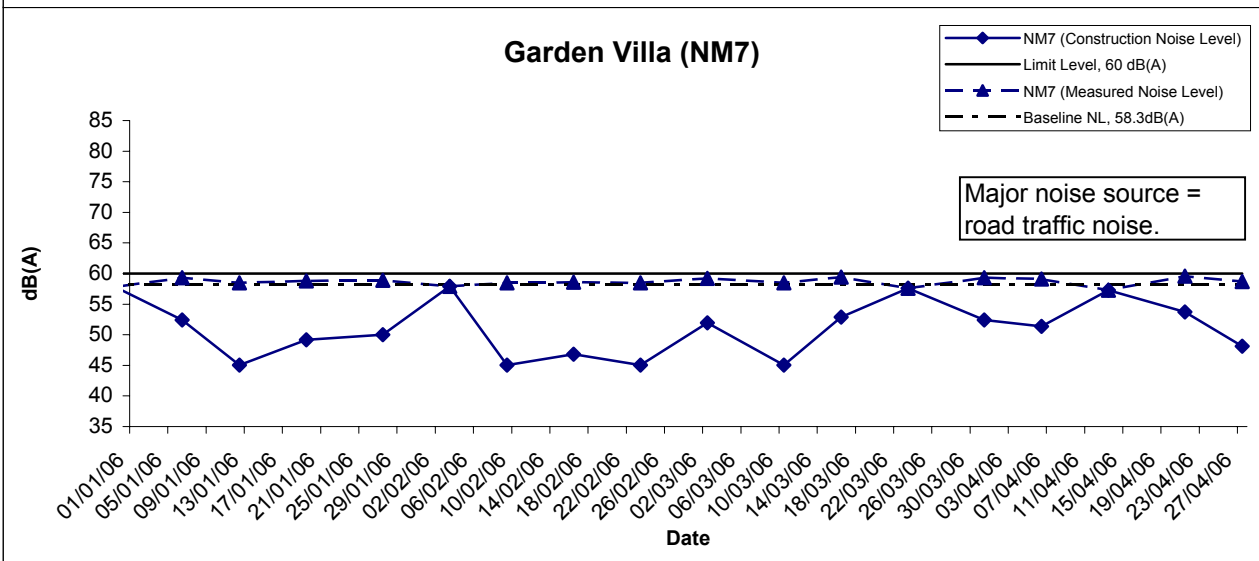
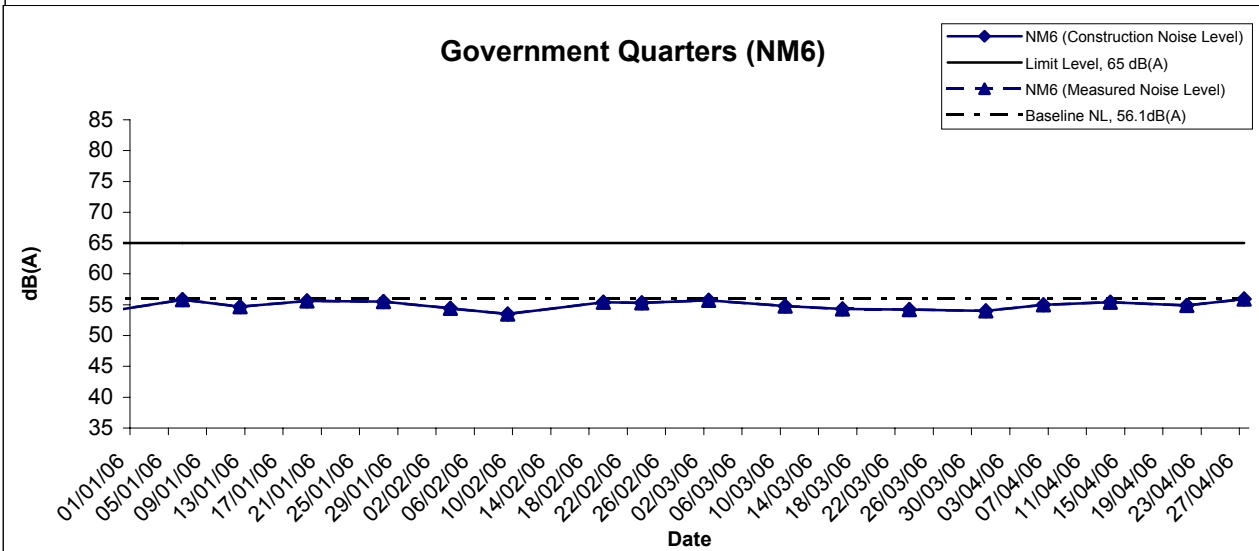
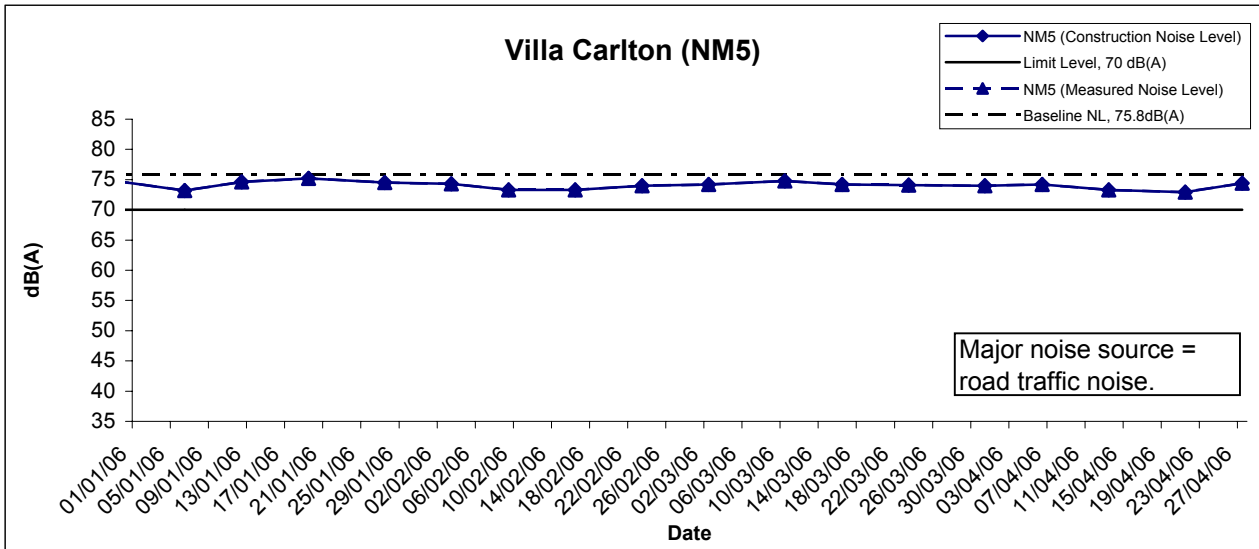


\* Construction Noise Level = Measured Noise Level - Baseline Level

(If the measured noise level is lower than the baseline level, the construction noise level will be taken as the measured one)

Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works  Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Apr 06	Appendix G	

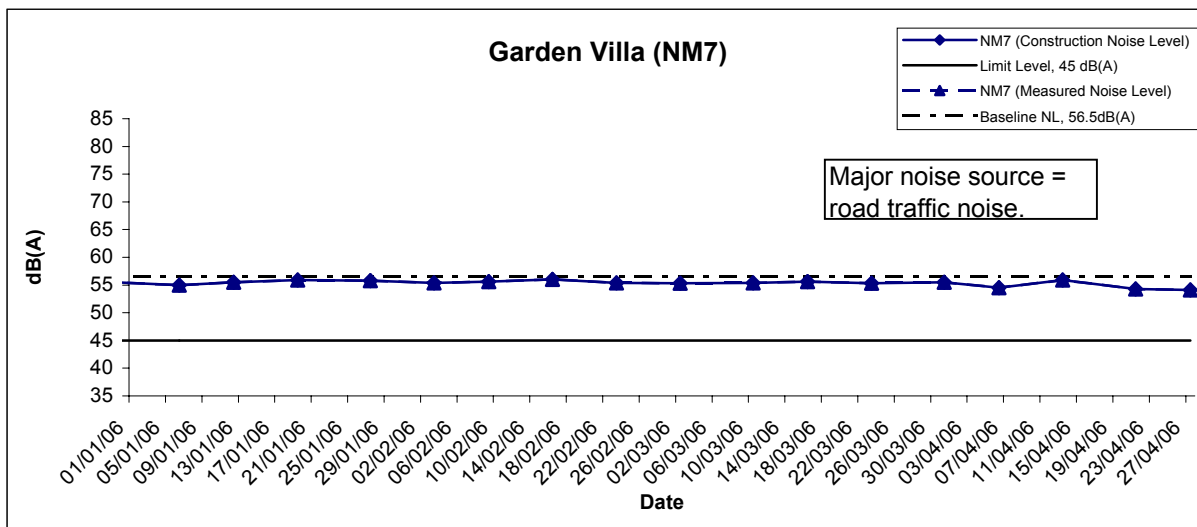
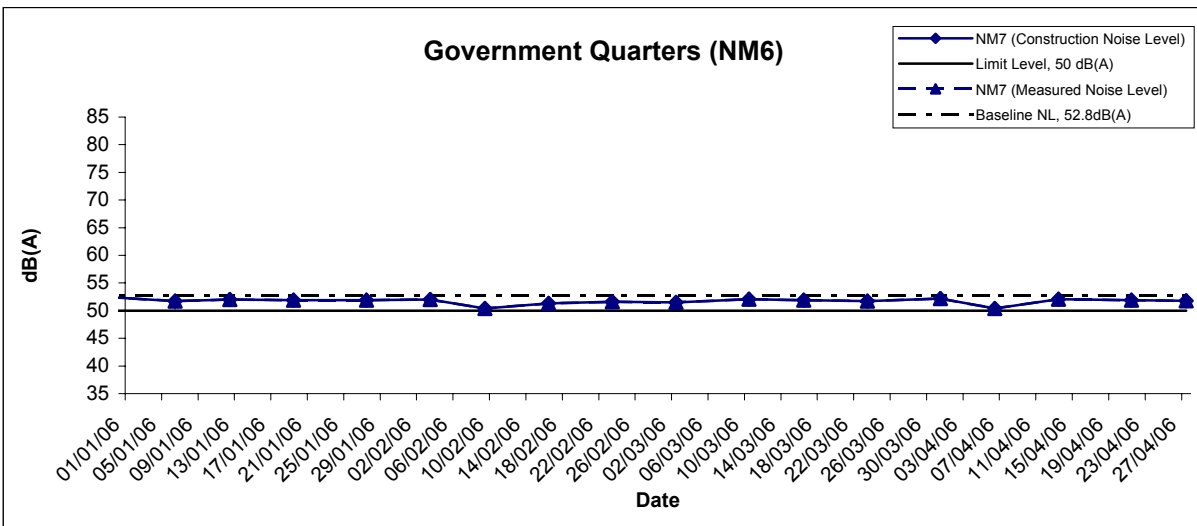
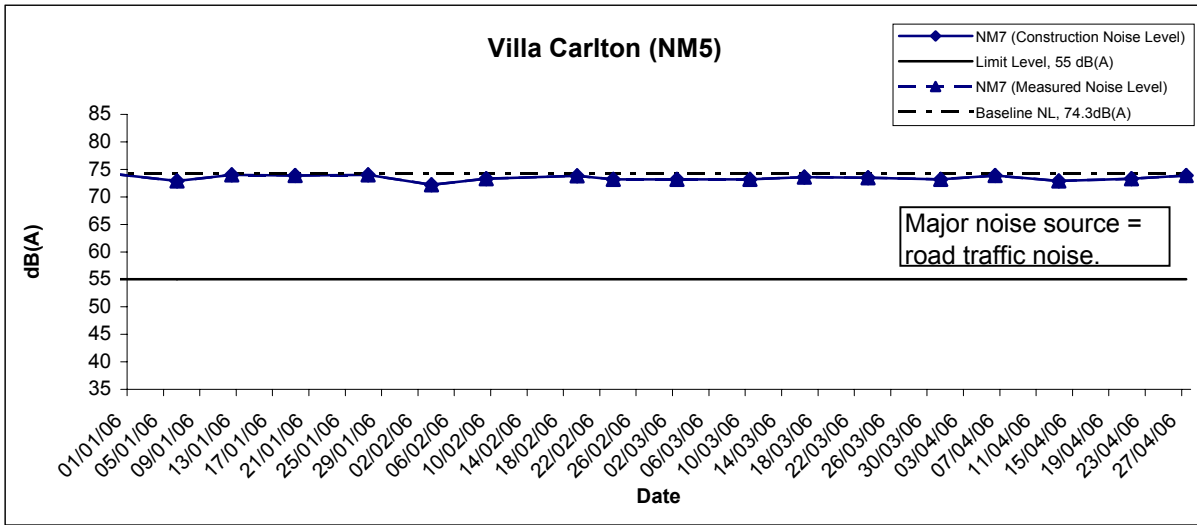
## Restricted Hours (19:00 to 23:00) - Noise Levels



\* Construction Noise Level = Measured Noise Level - Baseline Level  
 (If the measured noise level is lower than the baseline level, the construction noise level will be taken as the measured one)

Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works  Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Apr 06	Appendix G	

## Restricted Hours (23:00 to 07:00) - Noise Levels



\* Construction Noise Level = Measured Noise Level - Baseline Level

(If the measured noise level is lower than the baseline level, the construction noise level will be taken as the measured one)

Title Route 8 (previously known as Route 9) between Cheung Sha Wan & Sha Tin Contract HY/2003/02 - Eagle's Nest Tunnel and Associated Works  Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA3024	
	Date Apr 06	Appendix G	

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**APPENDIX H  
SUMMARY OF EXCEEDANCE**

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## Summary of Exceedance Recorded in the Reporting Month

### a) Exceedance Reports for 1-hr TSP

- One Action Level exceedance was recorded on 25 April 2006.
- No Limit Level exceedance was recorded in the reporting month.

**Report No.** 60425\_AM3

Exceedance(s) on 25 April 2006

Station No.	Parameter	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )	Level exceeded
AM3 (Garden Villa)	1-hr TSP	407.6	350	500	Action

### Remarks

(a) Statement of exceedance(s)

1-hr TSP level at Station AM3 (Garden Villa) exceeded the Action level.

(b) Cause of exceedance(s)

It was considered that the exceedance was not related to the R8-ENT construction works based on the following observations:

- Dust mitigation measures had been implemented by the Contractor, such as covering stockpiles and watering of haul roads. No observable dust source was identified in the R8-ENT construction site near the monitoring station.
- Dust generating activity, soil nailing, was undertaken by other contractor at another site which was closer to the captioned monitoring station.
- Therefore, the recorded exceedance of air quality may be due to other site activities not related to the R8-ENT construction work..

(c) Action required under the action plan

N/A

(d) Action taken under the action plan

N/A

(e) ET's conclusions and recommendations for mitigation

The exceedance was not due to the Project works and no further action is required.

### b) Exceedance Reports for 24-hr TSP (NIL)

### c) Exceedance Reports for Construction Noise

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



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**APPENDIX I  
SITE AUDIT SUMMARY**

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**Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin  
 Environmental Team for Lai Chi Kok Viaduct and Eagle's Nest Tunnel  
 Contract No. HY/2003/02 – Eagle's Nest Tunnel and Associated Works**

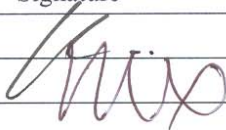
**Weekly Site Inspection Record Summary**

**Inspection Information**

Checklist Reference Number	60403-ENT
Date	3 April 2006 (Thu)
Time	9:00 – 12:00

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

Ref. No.	Remarks/Observations	Related Item No.
60403E-1	<p><b>A. Water Quality</b></p> <ul style="list-style-type: none"> <li>• Overflow of silty water was observed at Toll Plaza. The Contractor was reminded to review the capacity of the treatment facilities and ensure all wastewater is properly treatment before discharge.</li> </ul>	B7iii
60403E-2	<ul style="list-style-type: none"> <li>• The site boundary along Portion D6 near the Workshop was not properly protected such that surface runoff, in case generated in rainy days, will be discharged into the drainage system without any treatment.</li> </ul> <p><b>B. Air Quality</b></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>C. Noise</b></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul>	B3
60403E-3	<p><b>D. Waste / Chemical Management</b></p> <ul style="list-style-type: none"> <li>• The Contractor was reminded to dispose of the rubbish at Portion D4 and I1 more frequently and ensure the sorting areas are properly segregated. The food wastes should be disposed of at rubbish skips or bins as soon as possible.</li> </ul> <p><b>E. Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>• No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>F. Others</b></p> <ul style="list-style-type: none"> <li>• The deficiencies identified during last audit (ref. 60330-ENT) on 30 March 2006 were rectified by the Contractor.</li> </ul>	E1i

	Name	Signature	Date
Recorded by	KK Chan		4 April 2006
Checked by	Alex Ngai		4 April 2006

*Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin  
 Environmental Team for Lai Chi Kok Viaduct and Eagle's Nest Tunnel  
 Contract No. HY/2003/02 – Eagle's Nest Tunnel and Associated Works*


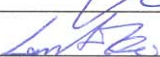
**Weekly Site Inspection Record Summary**

**Inspection Information**

Checklist Reference Number	60412-ENT
Date	12 April 2006 (Wed)
Time	9:00 – 11:30

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

Ref. No.	Remarks/Observations	Related Item No.
60412E-1	<p><b>A. Water Quality</b></p> <ul style="list-style-type: none"> <li>The effluent discharge from the AquaSed at Portion A (MKT) was observed silty. The open channel near the pumping point and the discharge point was found deposited with sediment. The Contractor was reminded to clear the sediment as soon as possible and improve the efficiency of the AquaSed.</li> </ul>	B7iii & B9
60412E-2	<ul style="list-style-type: none"> <li>Open stockpile was observed at BVS2. The Contractor was reminded to cover the idled surfaces of the stockpile to minimize dust emission and water quality impact arising from surface runoff.</li> </ul>	B12 & C8
60412E-3	<ul style="list-style-type: none"> <li>The rectification for item 60403E-2 regarding surface runoff control at Portion D6 was in progress.</li> </ul> <p><b>B. Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>C. Noise</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>D. Waste / Chemical Management</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>E. Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>F. Others</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul>	B3

	Name	Signature	Date
Recorded by	KK Chan		12 April 2006
Checked by	Kenneth Lam		12 April 2006

*Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin  
Environmental Team for Lai Chi Kok Viaduct and Eagle's Nest Tunnel  
Contract No. HY/2003/02 – Eagle's Nest Tunnel and Associated Works*

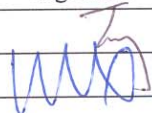
Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	60420-ENT
Date	20 April 2006 (Thu)
Time	1330 – 1615

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

Ref. No.	Remarks/Observations	Related Item No.
60420E-01	<p><b>A. Water Quality</b></p> <ul style="list-style-type: none"> <li>Following up the last audit, the sediment at the effluent exit point of portion A was cleaned up. The contractor was reminded to clean up the sediment more frequent to avoid accumulation.</li> </ul>	B9
60420E-02	<p><b>B. Air Quality</b></p> <ul style="list-style-type: none"> <li>Haul road watering should be provided more frequent for the site area at toll plaza –portion D4</li> </ul> <p><b>C. Noise</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>D. Waste / Chemical Management</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>E. Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>F. Others</b></p> <ul style="list-style-type: none"> <li>The deficiencies identified during last audit (ref. 60412-ENT) on 12 April 2006 were rectified by the Contractor.</li> </ul>	C2

	Name	Signature	Date
Recorded by	Tommy Ho		20 February 2006
Checked by	Alex Ngai		20 February 2006

*Route 8 (previously known as Route 9) between Cheung Sha Wan and Sha Tin  
 Environmental Team for Lai Chi Kok Viaduct and Eagle's Nest Tunnel  
 Contract No. HY/2003/02 – Eagle's Nest Tunnel and Associated Works*



**Weekly Site Inspection Record Summary**

**Inspection Information**

Checklist Reference Number	60426-ENT
Date	26 April 2006 (Wed)
Time	0915 – 1145

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

Ref. No.	Remarks/Observations	Related Item No.
60426E-01	<p><b>A. Water Quality</b></p> <ul style="list-style-type: none"> <li>Hydro-seeding or other measures should be provided for the open slope at BV-S3 and 11NW-A/C432 to prevent the sand and soil washed out by rain water</li> </ul> <p><b>B. Air Quality</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>C. Noise</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>D. Waste / Chemical Management</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul> <p><b>E. Permit / Licenses</b></p> <ul style="list-style-type: none"> <li>No environmental deficiency was identified during the site inspection.</li> </ul>	B11
60426E-02	<p><b>F. Others</b></p> <ul style="list-style-type: none"> <li>Following up the last audit, the problem for the surface runoff at toll plaza was not solved yet. The contractor was reminded to solve it as soon as possible before rainstorm coming.</li> </ul>	

	Name	Signature	Date
Recorded by	Tommy Ho		26 February 2006
Checked by	Alex Ngai		26 February 2006

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**APPENDIX J**  
**EVENT ACTION PLANS**

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## Appendix J - Event Action Plans

### Event/Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	Contractor
<b>ACTION LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source</li> <li>2. Inform ER &amp; IEC</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Check Contractor's working methods</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> <li>2. Check monitoring data and Contractor's working methods</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice</li> <li>2. Amend working methods if appropriate</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source</li> <li>2. Inform ER &amp; IEC</li> <li>3. Repeat measurement to confirm findings</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Discuss with ER &amp; for remedial actions required</li> <li>6. If exceedance continues, arrange meeting with ER &amp; IEC</li> <li>7. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Checking monitoring data submitted by ET</li> <li>2. Check Contractor's working methods</li> <li>3. Discuss with ET and Contractor on possible remedial measure</li> <li>4. Advise the ER &amp; ET on the effectiveness of the proposed remedial measures</li> <li>5. Supervise the implementation of the remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. Check Contractor's working methods</li> <li>4. Discuss with ET, IEC and Contractor on proposed remedial actions</li> <li>5. Ensure remedial actions properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial actions to ER within 3 working days of notification</li> <li>2. Implement the agreed proposals</li> <li>3. Amend proposal if appropriate</li> </ol>
<b>LIMIT LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source</li> <li>2. Inform ER &amp; IEC and EPD</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Assess effectiveness of Contractor's</li> </ol>	<ol style="list-style-type: none"> <li>1. Checking monitoring data submitted by ET</li> <li>2. Check Contractor's working methods</li> <li>3. Discuss with ET and Contractor on possible remedial measure</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. Check Contractor's working methods</li> <li>4. Discuss with ET, IEC and Contractor on</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to ER within 3 working days of notification</li> </ol>

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



Event/Action Plan for Construction Noise

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

Exceedance	ACTION			
	ET	IEC	ER	Contractor
Limit Level	<ol style="list-style-type: none"> <li>1. Repeat measurement to confirm findings</li> <li>2. Investigate the cause of the exceedance and identify the main source(s) of impact</li> <li>3. Inform ER&amp;IEC and EPD in writing</li> <li>4. Discuss remedial actions required with ER&amp;IEC</li> <li>5. Increase monitoring frequency to demonstrate efficacy of remedial measures</li> <li>6. Assess efficacy of remedial actions and keep ER &amp; IEC informed of the results</li> <li>7. If exceedance continues, meet with ER&amp;IEC to identify appropriate mitigation measures</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Review Contractor's remedial actions to assure their effectiveness and advise the ER &amp;ET accordingly</li> <li>3. Supervise the implementation of the remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance and notify Contractor</li> <li>2. Check monitoring data trends and Contractor's working methods</li> <li>3. Discuss with ET, IEC and Contractor on proposed remedial actions to be implemented</li> <li>4. Assess the efficacy of remedial actions and keep the Contractor informed</li> <li>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 aborted</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to ER immediately not more than 3 working days of notification</li> <li>3. Amend proposals if required by the ER</li> <li>4. Implement remedial actions immediately upon instruction</li> <li>5. Liaise with the ER to optimize the effectiveness of the agreed mitigation</li> <li>6. Resubmit proposals if problem still not under control</li> <li>7. Stop the relevant portion of works as determined by the ER until the exceedance is aborted</li> </ol>

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**APPENDIX K  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

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## Appendix K - Summary of Environmental Mitigation Implementation Schedule

Types of Impacts	Mitigation Measures	Status
<b>Construction Dust</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• A stockpile of dusty materials should not extend beyond the pedestrian barriers, fencing or traffic cones.</li> <li>• Vehicle washing facilities should be provided at every exit point.</li> <li>• 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.</li> <li>• 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.</li> <li>• Every main haul road should be sprayed with water or a dust suppression chemical so as to maintain the entire road surface wet.</li> <li>• 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.</li> <li>• Any stockpile of dusty materials should be either covered entirely by 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.</li> <li>• 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.</li> <li>• Every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving a construction site.</li> <li>• 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.</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
<b>Construction Noise</b>	<ul style="list-style-type: none"> <li>• Only well-maintained plant should be operated on –site and plant should be serviced regularly during the construction works.</li> <li>• Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.</li> <li>• Plant known to emit noise strongly in one direction, should where possible, be orientated to direct noise away from the NSRS.</li> <li>• Mobile plant should be sited as far away from NSRs as possible.</li> <li>• Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> <li>• Use quiet plant and Working Method</li> <li>• Reduce the number of plant operating in critical areas close NSRs.</li> </ul>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

Types of Impacts	Mitigation Measures	Status
	<ul style="list-style-type: none"> <li>Construct temporary and movable noise barriers</li> </ul>	^
Water Quality	<i>Construction Runoff and Drainage</i>	
	<ul style="list-style-type: none"> <li>Use of sediment traps and the adequate maintenance of drainage systems to prevent flooding and overflow.</li> <li>Boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. 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> <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> <li>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.</li> <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> <li>Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul>	^ ^ ^ ^ ^ ^ ^ ^
	<i>Tunnelling Work</i>	
	<ul style="list-style-type: none"> <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> <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>	^ ^

Types of Impacts	Mitigation Measures	Status
	<ul style="list-style-type: none"> <li>Spent 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
	<i>General Construction Activities</i>	
	<ul style="list-style-type: none"> <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> <li>All fuel tanks and storage areas will be provided with locks and be located on sealed areas (within bunds of a capacity equal to 110% of the storage capacity of the largest tank or 20% by volume of the fuel stored in that areas, whichever in the greatest).</li> </ul>	^ ^
	<i>Sewage Effluent</i>	
Waste	<ul style="list-style-type: none"> <li>Construction work force sewage discharges from 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.</li> <li>It is considered that sewage discharges could also be treated by on-site septic tanks and soakaway. Minimum clearance away from 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.</li> </ul>	^ N/A
	<i>General</i>	
	<ul style="list-style-type: none"> <li>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.</li> </ul>	^
<i>Storage, Collection and Transportation of Waste</i>		
	<ul style="list-style-type: none"> <li>Wastes shall be handled and stored in a manner to ensure that they are held securely without loss or leakage.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Authorised or licensed waste hauliers shall be used and they shall only collect wastes prescribed by their permits.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Waste shall be removed on a daily basis.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Waste storage area shall be maintained and cleaned on a daily basis.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Windblown litter and dust during transportation shall be minimised by either covering trucks or transporting wastes in enclosed containers.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Obtain necessary waste disposal permits from the appropriate authorities if they are required.</li> </ul>	^
	<ul style="list-style-type: none"> <li>Wastes shall be disposed of at licensed waste disposal facilities.</li> </ul>	^
	<ul style="list-style-type: none"> <li>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.</li> <li>Maintain records of the quantities of wastes generated, recycled and disposed.</li> </ul>	^ ^

Types of Impacts	Mitigation Measures	Status
	<i>Surplus Excavated Materials</i>	
	<ul style="list-style-type: none"> <li>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 10m away from the nullah wall.</li> </ul>	^
	<i>Construction and Demolition (C&amp;D) Waste</i>	
	<ul style="list-style-type: none"> <li>Careful design, planning and good site management shall be adopted to minimise over-ordering and generation of waste materials such as concrete grouts.</li> <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> <li>Construction and demolition (C&amp;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.</li> </ul>	^  N/A  ^
	<i>Chemical Waste</i>	
	<ul style="list-style-type: none"> <li>Chemical waste that is produce during construction shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.</li> <li>Containers used for the storage of chemical wastes should: <ol style="list-style-type: none"> <li>Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> <li>Have a capacity of less than 450 litres unless the specifications have been approved by the EPD;</li> <li>Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste Regulations.</li> </ol> </li> <li>The storage area for chemical wastes should: <ol style="list-style-type: none"> <li>Be clearly labelled and used solely for the storage of chemical waste;</li> <li>Be enclosed on at least 3 sides;</li> <li>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>Have adequate ventilation;</li> <li>Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary);</li> <li>Be arranged so that incompatible materials are adequately separated.</li> </ol> </li> <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>	^   ^       ^   ^

Types of Impacts	Mitigation Measures	Status
	<p><i>General Refuse</i></p> <ul style="list-style-type: none"> <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> <li>Reusable rather than disposable dishware shall be used if feasible.</li> </ul>	<p>^</p> <p>^</p>
<p><b>Ecology</b></p>	<ul style="list-style-type: none"> <li>A sediment barrier shall be erected to minimize stream sedimentation at downstream of the project boundary of the Toll Plaza.</li> <li>Conduct a tree survey before commencement of the construction work.</li> <li>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.</li> <li>Loss of the adjacent woodland due to temporary land take shall be returned to the original status immediately.</li> <li>Wild and uncontrolled fire shall be strictly prohibited</li> <li>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.</li> </ul>	<p>N/A</p> <p>^</p> <p>N/A</p> <p>N/A</p> <p>^</p> <p>N/A</p>
<p><b>Landscape and Visual Impact</b></p>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Measurement of vibration would also be carried out on a need basis during the piling work</li> </ul>	<p>^</p> <p>^</p> <p>^</p>

Remarks:

- |     |                                   |   |  |
|-----|-----------------------------------|---|--|
| ^   | Compliance of mitigation measure; | X | Non-compliance of mitigation measure;          |
| N/A | Not Applicable;                   | • | Non-compliance but rectified by the contractor |



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**APPENDIX L**  
**CONSTRUCTION PROGRAMME**

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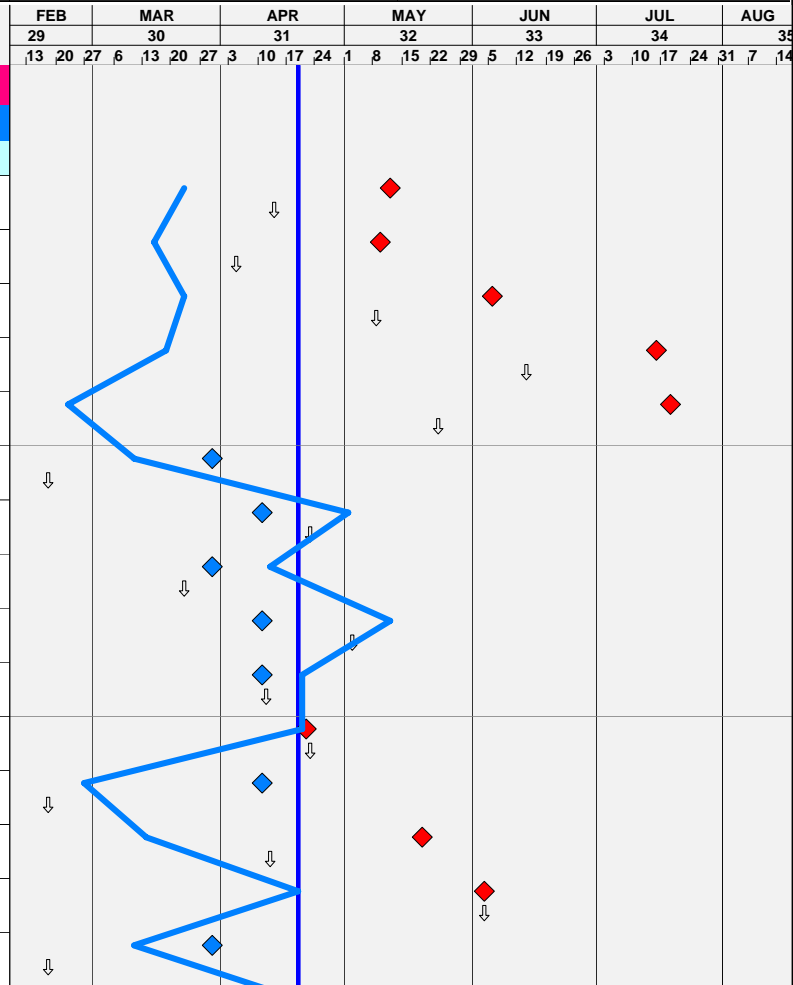
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Data Date 20APR06  
Run Date 26APR06 11:58

### 3 MONTH ROLLING PROGRAMME

Monthly Update  
 Detailed Works Progr.(DWP) r  
 Progress Bar  
 Critical Activity

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart										
										FEB 29	MAR 30	APR 31	MAY 32	JUN 33	JUL 34	AUG 35				
<b>GENERAL</b>																				
<b>Contract defined dates, stages and sections</b>																				
<b>Stages of the Works</b>																				
KD04A	KD04 Proposed - Noise Barrier Founds (17Apr06)	0		11MAY06	0	0	0	-24	-28											
KD05B	KD-5B TCSS Access NB SPB (04Apr06)	0		09MAY06	0	0	0	-35	-35											
KD05D	KD-5D TCSS Access SB SPB (24Apr06)	0		05JUN06	0	0	0	-42	-28											
KD05C1	KD-5C TCSS Access Toll Plaza East(30Jun06)	0		15JUL06	0	0	0	-15	-32											
KD05A2	KD-05A Proposed - TCSS Access BV West (15May06)	0		18JUL06	0	0	0	-64	-56											
KD06NA3	TCSS Acc to NB Tun Soffit Ch2450-2000 (29MAR06)	0		29MAR06A	100	0	0		-40											
KD06NA1	TCSS Acc to NB Tun Soffit SthPtl-Ch1700 (10Apr06)	0		10APR06A	100	0	0		12											
KD06NC3	TCSS Acc NB Tun XPS CblT Ch2450-2000 (29Mar06)	0		29MAR06A	100	0	0		-7											
KD06NC1	TCSS Acc to NB Tun XPS CblT Ch1700-SPtl (10Apr06)	0		10APR06A	100	0	0		22											
KD06NC2	TCSS Acc to NB Tun XPS CblT Ch2000-1700 (10Apr06)	0		10APR06A	100	0	0		1											
KD06NE	TCSS Access outside CblT NthAsthPtl (1May06)	0		21APR06	0	0	0	10	1											
KD06SA3	TCSS Acc SB Tun Soffit Ch2450-2000 (10Apr06)	0		10APR06A	100	0	0		-52											
KD06SA2	TCSS Acc SB Tun Soffit Ch2000-1700 (31May06)	0		19MAY06	0	0	0	12	-37											
KD06SA1	TCSS Acc SB Tun Soffit SthPtl-1700 (11May06)	0		03JUN06	0	0	0	-23	0											
KD06SB3	TCSS Acc to SB Tun Soffit Ch2450-2000 (29Mar06)	0		29MAR06A	100	0	0		-40											



**LEIGHTON - KUMUGAI JV**  
**R8 - EAGLES'S NEST TUNNEL**  
**CONTRACTORS TARGET PROGRAMME**

Proj. Name: W18E  
 Layout: 3 MONTHS ROLLING PROGRAMME  
 Filter: 3 MONTH ROLLING PROGRAMME  
 Current Proj: W18E  
 Target 1 Proj: BE01

**LKJV/ENT/DWP/B**

Date	Revision	Checked	Approved
20APR06	Prog Update Apr 06	GW	RB

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>Stages of the Works</b>																	
KD06SB1	TCSS Acc to SB Tun Soffit SthPtl-1700 (11May06)	0		04MAY06	0	0	0	7	0								
KD06SC3	TCSS Acc SB Tun XPS CbIT Ch2450-2000 (19Apr06)	0		19APR06A	100	0	0		14								
KD06SC2	TCSS Acc SB Tun XPS CbIT Ch2000--1700 (11May06)	0		12MAY06	0	0	0	-1	27								
KD06SC1	TCSS Acc SB Tun XPS CbIT Ch1700-SthPtl (31May06)	0		21JUN06	0	0	0	-41	-26								
KD06SE	TCSS Access outside CbIT NthSthPtl (2Jun06)	0		04MAY06	0	0	0	29	0								
KD06V	KD-6V TCSS Acc to Adit - incl VB & CP7 (12Jun06)	0		15JUN06	0	0	0	-3	-38								
KD06C	KD-6C TCSS Access to NPB OHVD SB (27.Mar.06)	0		27MAR06A	100	0	0		-7								
KD07A	KD-7 TCSS Access Toll Plaza east (30.Jun.06)	0		15JUL06	0	0	0	-15	-32								
<b>Sections of the Works</b>																	
KD13	KD-13 Compl. Section 5 of the works (15Sep05)	0		27MAR06A	100	0	0		-3								
KD22A	KD22 Proposed - Noise enclosure founds (7Jan06)	0		12MAY06	0	0	0	-125	-13								
<b>Submittals &amp; Approvals</b>																	
<b>Drawing Submittal &amp; Approval</b>																	
8034	Prep. & Sub. Independ't Serv. Dwgs for SHT&T3&LCK	48	04AUG04A	04MAY06	98	98	12	461	-48								
8024	Engineer Comment / Approve ENT ISD Submissions	18	06AUG04A	28APR06	85	85	8	119	-48								
8030	Res-sub. & Approv of ENT ISD	24	06SEP04A	04MAY06	70	70	12	119	-48								
8035	Engineer Comment / Approve SHT&T3LCK ISD Sub.	24	13SEP04A	03JUN06	85	85	12	437	-48								
8032	Engineer Comment / Approve SHT&T3&LCK CSD Sub.	18	25OCT04A	09MAY06	90	90	15	437	-48								
8036	Re-sub. & Approv of SHT & T3 & LCK ISD	36	31MAR05A	03JUN06	70	70	36	437	-48								
8033	Re-sub. & Approv. of SHT & T3 & LCK CSD	24	28JUN05A	19MAY06	60	60	24	437	-48								
8022	Engineer Comment / Approve ENT CSD Submissions	12	20APR06	04MAY06	0	0	12	437	-48								
8029	Re-sub. & Approv. of ENT CSD	24	06MAY06	03JUN06	0	0	24	437	-48								
<b>SEM Interface with SHT &amp; T3</b>																	
<b>SHT RC Full Enclosure</b>																	
2473	Apprv.for Det.Engineering of Encl.Vent.Fans	12	07JUL04A	28APR06	99	99	8	460	-48								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart												
										FEB 29	MAR 30	APR 31	MAY 32	JUN 33	JUL 34	AUG 35						
<b>T3 Underpass</b>																						
2481	Apprv.for Det.Engineering of T3 Underpass	12	07JUL04A	28APR06	99	99	8	460	-48													
2482	Order T3 Underpass Eqpt.	0		28APR06	0	0	0	460	-48													
<b>SHT Remainder Area</b>																						
2494	Order Remaining Area Eqpt.	0	20APR06	19APR06	0	0	0	468	-48													
<b>T3 Remainder Area</b>																						
2488	Order T3 Remaining Area Eqpt.	0	20APR06	19APR06	0	0	0	468	-48													
<b>Interface Milestones</b>																						
<b>SHT RC Full Enclosure</b>																						
2320	SHT South Portal Building-Final SEM Works Detail	0	20APR06	16APR04A	0	0	0	0	0													
2321	SHT North Portal Building-Final SEM Works Detail	0	20APR06	14JUN04A	0	0	0	0	0													
2322	SHT Shatin Heights Tunnel-Final SEM Works Detail	0	20APR06	15APR04A	0	0	0	0	0													
2323	SHT RC Full Enclosure - Final SEM Works Details	0	20APR06	16APR04A	0	0	0	0	0													
2324	SHT Remaining SEM & HyD.Entrusted Works required	0	20APR06	14JUN04A	0	0	0	0	0													
<b>T3 Underpass</b>																						
2325	T3 Remaining SEM & HyD.Entrusted Works required	0	20APR06	30APR04A	0	0	0	0	0													
2326	T3 Underpass - Final SEM Works Detail	0	20APR06	16APR04A	0	0	0	0	0													
<b>LAI CHI KOK VIADUCT</b>																						
<b>CONTRACT DEFINED DATES, STAGES &amp; SECTIONS</b>																						
<b>PORTION ACCESS &amp; VACATION</b>																						
ACS_M1	Access to Portions - M1	0		28APR06*	0	0	0	79	0													
ACS_M2	Access to Portions - M2	0		28APR06*	0	0	0	575	0													
ACS_M3	Access to Portions - M3	0		28APR06*	0	0	0	-11	0													
<b>SUBMITTALS &amp; APPROVALS</b>																						
<b>E&amp;M EQPT./MTRL.APPROVALS BY ENGINEER</b>																						
8314	LCKVd-App.Enclosure Lgt sys (incl Excision NEs)	18	05AUG04A	12MAY06	80	80	18	327	-48													
8318	LCKVd-App. Elect Power sys (incl Excision NEs)	18	07DEC04A	12MAY06	80	80	18	335	-48													

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart															
										FEB	MAR	APR	MAY	JUN	JUL	AUG									
										29 13	30 20	31 27	01 13	02 20	03 27	04 03	05 10	06 17	07 24	08 01	09 08	10 15	11 22	12 29	13 05
<b>Procurement - Material</b>																									
8320	LCKVd-Proc & Manuf. Elect Power sys (incl Excisi	180	20MAY05A	07AUG06	65	65	90	335	-48	[Gantt Bar]															
8315	LCKVd-Proc & Manuf. Encl. Lgt sys (incl Excision	180	20JAN06A	16AUG06	20	20	80	327	-48	[Gantt Bar]															
<b>Construction Works</b>																									
<b>LCK Viaduct Noise Enclosure 1 (Sec 15, Excision)</b>																									
8322	LckVd NE1-Elect Works 1st Fix	36	29APR06*	13JUN06	0	0	36	63	0	[Gantt Bar]															
8332	LckVd NE1-Elect Works 2nd Fix	30	14JUN06	19JUL06	0	0	30	63	0	[Gantt Bar]															
8342	LckVd NE1- Elect Cabling ENT SPB to N.E.	18	20JUL06	09AUG06	0	0	18	63	0	[Gantt Bar]															
8352	LckVd NE2&3 & BV.-Elect Works Fin Fix	18	20JUL06	09AUG06	0	0	18	63	0	[Gantt Bar]															
<b>BUTTERFLY VALLEY</b>																									
<b>Contract Key Dates &amp; Milestones</b>																									
<b>Area Access &amp; Vacation Dates</b>																									
ACS_A	Access to Portions - A	0	20OCT03A		100	100	0		-61	[Gantt Bar]															
<b>Construction Works</b>																									
<b>BUTTERFLY VALLEY 3RD PARTY WORKS</b>																									
<b>TCSS at Butterfly valley Approach</b>																									
S2392	TCSS Access to Duct & D.Pit East BV (11JUN06)	0		17MAY06	0	0	0	20	10	[Gantt Bar]															
S2462	TCSS Access to Gantry MLS-CAP13 (NB) (15MAY06)	0		06JUN06	0	0	0	-18	-19	[Gantt Bar]															
S2602	TCSS Access to Gantry MLS-CAP11 (NB) (15MAY06)	0		06JUN06	0	0	0	-18	-19	[Gantt Bar]															
S2622	TCSS Access to Gantry MLS-CAP12 (SB) (11JUN06)	0		06JUN06	0	0	0	4	-19	[Gantt Bar]															
S2632	TCSS Access to VMS MLS-CAP14,15 (11JUN06)	0		07JUN06	0	0	0	3	-19	[Gantt Bar]															
S2592	TCSS Access to Duct & D.Pit West BV (15MAY06)	0		18JUL06	0	0	0	-53	-46	[Gantt Bar]															
<b>Noise Barrier Works by ACCIONA</b>																									
S2562	Access for 7m N.B. Works by Acciona at BV South	77	12MAY06	11AUG06	0	0	77	50	-19	[Gantt Bar]															
S2612	Access for Semi-Enclosure Works by Acciona	90	01JUN06	14SEP06	0	0	90	-85	0	[Gantt Bar]															
S2662	Access for 5m N.B. Works by Acciona at BV South	90	11JUL06	25OCT06	0	0	90	-25	-28	[Gantt Bar]															

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>MAJOR DRAINAGE DIVERSIONS</b>																	
<b>Filling</b>																	
S2680	Fill on top of Box Culvert 45 & culvert A	9	08MAY06	17MAY06	0	0	9	451	-35								
<b>Box Culvert</b>																	
S2382	Box Culvert 45 & culvert A - structure	53	11NOV05A	28APR06	70	60	8	-118	-35								
S2350	Box Culvert 36>43 & 32 - Structure	66	31DEC05A	31MAR06A	100	14	0		21								
S2710	Box Cul. Final Structure (Strip, Clean & Fill)	12	10APR06A	28APR06	0	0	8	71	13								
<b>MAJOR UTILITY DIVERSIONS</b>																	
<b>WSD twin 600mm watermain</b>																	
S2251	MB2-4(A1-3) - on natural slope	66	31DEC05A	07APR06A	100	0	0		25								
S2191	Ch.100-150 (MB2-12) - on natural slope	19	25FEB06A	21APR06	90	0	2	-76	16								
S2171	Ch. 150-312 (MB12-19) - at Toe of Slope BV-S2	56	31DEC05A	24APR06	85	0	4	-78	4								
S2211	Ch355-412 (across Box Culvert)	28	16FEB06A	21APR06	90	0	2	-76	13								
S2231	Testing	7	25APR06	03MAY06	0	0	7	-78	14								
S2241	Sterilization	6	04MAY06	11MAY06	0	0	6	-78	14								
S2261	Water Sampling (by WSD)	8	12MAY06	20MAY06	0	0	8	-78	14								
S2281	Connection (by WSD)	2	22MAY06	23MAY06	0	0	2	-78	14								
S2301	Outstanding thrust blocks (NB/MB01 & NB/MB28)	6	24MAY06	30MAY06	0	0	6	-78	14								
<b>900mm watermain</b>																	
S2291	900mm - Water Sampling (By WSD)	8	13MAR06A	22MAR06A	100	0	0		0								
S2311	900mm - Connection by WSD	6	20APR06	26APR06	0	0	6	1	-20								
S2331	900mm - Complete Thrust Blocks at Tie-in	6	27APR06	04MAY06	0	0	6	1	-20								
<b>EARTHWORKS &amp; SLOPEWORKS</b>																	
<b>SI &amp; INSTRUMENTATION</b>																	
1009	Confirmation Drill Holes (Post-Construction)	90	20APR06	07AUG06	0	0	90	92	-48								
<b>BV-R1 Remaining Works</b>																	
S3240	BV-R1 - Construction of Lagging Wall	91	20APR06	08AUG06	0	0	91	-136	-43								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>BV-R1 Remaining Works</b>																	
S2110	Retaining Wall BV-R1 Structure (Base)	72	07JAN06A	28APR06	90	33	8	-118	-8								
S2120	Retaining Wall BV-R1 Structure (Wall)	87	13FEB06A	08JUN06	70	0	40	-118	-1								
S2360	BV-R1 - Backfill	48	09JUN06	04AUG06	0	0	48	39	-1								
<b>SLOPE SP-S2 &amp; SP-S3</b>																	
S2480	WSD Access Rd No Longer Available for Use	0		30APR06*	0	0	0	0	0								
S2370	Remaining Works to Slopes SP-S3 & SP-S2	24	13MAY06	10JUN06	0	0	24	140	-11								
<b>SLOPE BV-S2</b>																	
<b>EXCAVATION (SOFT &amp; ROCK)</b>																	
102692	BV-S2/9 (South)Slope excvtn (rock & some soft)	83	05SEP05A	11MAY06	80	80	17	-145	-48								
102695	BV-S2/10 (South)Slope excvtn (rock & some soft)	22	20APR06	17MAY06	0	0	22	-145	-48								
<b>SLOPE STABILISATION (SOIL NAILS,ROCK BOLTS ETC)</b>																	
102691	BV-S2/8 Inst.Rock bolts & Test (60nr.w/3.rig)	22	15FEB06A	28APR06	70	0	8	441	-26								
102696	BV-S2/10 Row B3 Soil Nails & Test 39nr.w/2.rig	11	14MAR06A	24MAR06A	100	0	0		-7								
102694	BV-S2/9 Inst.Rock bolts & Test (4nr.w/1.rig)	5	28MAR06A	22APR06	10	0	3	-145	-46								
<b>SURFACE DRAINAGE</b>																	
103696	BV-S2 Berm 9 Surface drainage	14	01MAR06A	06MAY06	30	0	10	434	-21								
103697	BV-S2 Berm 10 Surface drainage	14	08MAY06	23MAY06	0	0	14	434	-21								
<b>SLOPE BV-S4</b>																	
<b>SLOPE FINISHES</b>																	
102380	BV-S4/3a-4a & 5 hydro-seeding & tensarmat	12	12SEP05A	01JUN06	70	0	10	-36	-44								
101139	11nw/434 BV-S4/1-2-3bcd-4b Hydro-seed/Tensarmat	18	27APR06	19MAY06	0	0	18	-36	-46								
<b>SURFACE DRAINAGE</b>																	
103705	BV-S4/3 Surface Drainage	8	17MAR05A	26APR06	70	25	6	-36	-46								
103706	BV-S4/4 Surface Drainage	12	07SEP05A	10MAY06	5	0	10	-22	-34								
<b>SLOPE SP-S1</b>																	
<b>SURFACE DRAINAGE</b>																	
103711	Sp-S1/4 Surface Drainage	7	06JUL04A	27APR06	40	40	7	5	-48								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>RC STRUCTURES</b>																	
<b>RETAINING WALL BV-R2</b>																	
CONCRETE WORKS																	
101117	BV-R2 (8) Capping Beam and wall	30	03MAR06A	24APR06	85	0	4	-107	-11								
FINISHES																	
101123	BV-R2 Wall finishes	60	11MAY06	21JUL06	0	0	60	12	-11								
BACKFILLING																	
101122	BV-R2(A&B) Granular Drain & Compacted Backfill	36	07APR05A	28APR06	80	5	8	161	-15								
101126	BV-R2(C) Granular Drain & Compacted Backfill	6	25APR06	02MAY06	0	0	6	159	-11								
<b>ROADWORKS - North End of BV</b>																	
<b>Stormwater Drainage</b>																	
S2440	Storm Drainage to Nrth Bnd (Nr. Typ C&E N.B.)	37	31DEC05A	03JUL06	40	0	20	-118	16								
S3200	Storm Drainage to Sth Bnd (Nr. Typ D N.B.)	37	31DEC05A	05JUL06	45	0	15	-120	0								
S2430	West Loop Rd. Drainage	20	19JAN06A	18AUG06	30	0	12	39	7								
S3020	Storm Drainage to enable TCSS Works at Median	12	24FEB06A	21APR06	70	0	2	-105	-16								
S3040	Storm Drainage to enable CLP Works	12	24FEB06A	21APR06	70	0	2	-105	-16								
S2420	Outstanding East Loop Rd. Drainage	28	25APR06	12MAY06	50	50	14	76	-11								
S2450	Storm Drainage to Sth Bnd (Nr. Typ B N.B.)	45	11JUL06	31AUG06	0	0	45	-169	-23								
S2630	250 dia pipe connection between East/West stream	10	11JUL06	31AUG06	0	0	10	-156	-23								
<b>Noise Barrier Footings &amp; Sign Gantries</b>																	
S2230	Semi Enclosure Footing (Typ B) R-Bay 15-17	16	13DEC05A	12MAY06	35	0	14	-107	-9								
S2240	Semi Enclosure Ftng (Typ B) R-Bay 14-7	25	13DEC05A	15MAY06	18	0	20	-123	-11								
S3260	Semi Enclosure Footing (Typ E) L-Bay 14-17	18	14MAR06A	24MAY06	75	0	4	-75	20								
S3030	Semi Enclosure Ftng (Typ B) R-Bay 1-6	25	20MAR06A	03JUN06	35	0	16	112	-2								
S3270	Semi Enclosure Ftng (Type C) L-Bay 1-6	36	23MAR06A	15MAY06	43	0	20	-123	-32								
S3290	Removal of Tunnel Desilting Tanks	0		25MAR06A	100	0	0		1								
S2270	Semi Enclosure Footing (Type D) L-Bay 11-13	22	20APR06	17MAY06	0	0	22	-125	-48								



Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart										
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31				
<b>Noise Barrier Footings &amp; Sign Gantries</b>																				
S3110	Relocation of WSD Access Rd.	0		02MAY06*	0	0	0	-133	0											
S2310	Semi Enclosure Footing (Typ D) L-Bay 7-10	20	03MAY06	26MAY06	0	0	20	-133	0											
S3530	Base for HML 1	9	16MAY06	25MAY06	0	0	9	137	-32											
S3550	Base for HML 3 & Dwarf Walls	18	05JUN06	24JUN06	0	0	18	112	-2											
S3300	SP Bldg Tower Crane Removed	0		06JUL06*	0	0	0	410	-11											
<b>Ducting &amp; Drawpits</b>																				
S2570	Bv North - CLP Ducts and Drawpits (4no.)	21	27MAY06	05JUL06	0	0	21	-3	1											
S2600	BV North - CLP Ducts & Drawpits at SPB (3no.)	10	27MAY06	08JUN06	0	0	10	-48	12											
S2560	BV North - TCSS Ducting & Drawpits (West)	18	01APR06A	19MAY06	5	0	16	-4	-4											
S2580	BV North - TCSS Ducting & Drawpits (East)	18	25APR06	17MAY06	0	0	18	20	10											
<b>Road Pavement &amp; Associated Work</b>																				
S2920	Road Works to East Loop Rd Typ III (EVA)	13	05JUN06	19JUN06	0	0	13	133	-11											
<b>Miscellaneous Works</b>																				
S3100	Erect HML 2	4	09JUN06	13JUN06	0	0	4	138	20											
S2870	Erect HML 1	4	10JUN06	14JUN06	0	0	4	137	-32											
S3450	Erect HML 3	4	11JUL06	14JUL06	0	0	4	112	-2											
S2660	Construct Foul Holding Tank & Connections	24	20APR06	19MAY06	0	0	24	-75	-42											
S2910	Foul Drain Pipe Across SB Tube (3m Below FRL)	6	20MAY06	26MAY06	0	0	6	-75	12											
S2670	Install Twin DN200 Pipes to SPB via E. Loop Rd	18	13MAY06	03JUN06	0	0	18	76	-11											
<b>ROADWORKS - South End of BV</b>																				
<b>Stormwater Drainage</b>																				
S2640	Storm Drainage to Sth Bnd (Near. 7m N.B.)	30	03APR06A	18MAY06	60	0	16	-105	-19											
S2490	Storm Drainage to Nrth Bnd (Foot of BVS2)	41	18MAY06	06JUL06	0	0	41	-145	-46											
<b>Noise Barrier Footings &amp; Sign Gantries</b>																				
S2400	7 Barrier (Typ A) Bay 3-16	54	11JAN06A	11MAY06	38	15	17	-105	-19											
S3560	7m Barrier (Typ A) Bay 8 - Including Gantry Foot	9	12MAY06	22MAY06	0	0	9	-88	-19											

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB							MAR							APR							MAY							JUN							JUL							AUG							
										29	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14																						
<b>Noise Barrier Footings &amp; Sign Gantries</b>																																																											
S3180	7m Barrier Ftg (Typ A1, A2) Bay 1-2	14	23MAY06	08JUN06	0	0	14	-88	-18																																																		
S3170	5.5m Barrier Footings Bay 3-14	42	11MAR06A	13MAY06	54	0	19	-124	-25																																																		
S3280	Pre-drilling for Mini-piling	6	15MAR06A	21MAR06A	100	0	0		-13																																																		
S2471	Mini-piling	30	20APR06	26MAY06	0	0	30	-169	-28																																																		
S2491	5.5m Barrier Footings Bay 1-2	14	15MAY06	30MAY06	0	0	14	29	-25																																																		
S3330	Load Test for mini-piles	12	27MAY06	10JUN06	0	0	12	-169	-28																																																		
S2481	5.5m Barrier Footings Bay 15-17	24	12JUN06	10JUL06	0	0	24	-169	-28																																																		
S2620	BV South - Sign / Lane Signal Gantry Bases (5no)	12	19MAY06	02JUN06	0	0	12	-18	-19																																																		
S2461	Sign gantry Installation MLS-CAP12	3	03JUN06*	06JUN06	0	0	3	4	-19																																																		
S3370	Signal Gantry Installation MLS-CAP14 & 15	4	03JUN06	07JUN06	0	0	4	3	-19																																																		
S3380	Sign Gantry Installation MLS-CAP11,13	3	03JUN06	06JUN06	0	0	3	-18	-19																																																		
S2250	Footing for CCTV mast	6	11JUL06	17JUL06	0	0	6	-134	-28																																																		
<b>Ducting &amp; Drawpits</b>																																																											
S2530	BV South - TCSS Ducts & Drawpits (East)	10	19APR06A	27MAY06	10	0	8	-93	-17																																																		
S2740	BV South - LV Ducts & Drawpits	20	07JUL06	29JUL06	0	0	20	-145	-46																																																		
S3350	BV South - TCSS Ducts & Drawpits (West)	10	07JUL06	18JUL06	0	0	10	-53	-46																																																		
<b>Miscellaneous Works</b>																																																											
S2610	BV South - Footing HML9 (Adjacent 5.5m NB)	8	15MAY06	23MAY06	0	0	8	-89	-25																																																		
S2850	Erect HML9	4	08JUN06	12JUN06	0	0	4	406	-25																																																		
S2790	Installation of DN 200 Fire Hydrant Pipe & FH's	12	07JUL06	20JUL06	0	0	12	-137	-46																																																		
S3320	Base for kiosk K4	6	07JUL06	13JUL06	0	0	6	-55	-46																																																		
S3340	Construction of Weighbridge Pit	10	07JUL06	18JUL06	0	0	10	85	-46																																																		
<b>LKJV Works at Abutment M</b>																																																											
S3250	Backfilling behind Abutment	12	14JUL06	27JUL06	0	0	12	29	-1																																																		

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB	MAR	APR	MAY	JUN	JUL	AUG	
										29	30	31	32	33	34	35	
<b>ACCIONA Works at Abutment</b>																	
S3070	ACCIONA - Construct X-Head at Abutment M	50	21FEB06A	25MAR06A	100	15	0		25								
S3080	ACCIONA - Cure, Strip & Reinstale Area - Abut. M	24	20APR06	19MAY06	0	0	24	38	8								
S3090	ACCIONA - Construct end wall and wing walls	36	01JUN06	13JUL06	0	0	36	29	-1								
<b>DSD MAINTENANCE ROAD</b>																	
<b>DSD Maintenance Rd DSD1-1 (Acciona Interface)</b>																	
S2320	ACCIONA - Strip Falsework & Formwork for X-Head	24	03MAR06A	13APR06A	100	0	0		-12								
S2340	ACCIONA - Remove Crane Platform	18	20APR06	12MAY06	0	0	18	134	-14								
S3570	WSD Slope Reinstatement	18	13MAY06	03JUN06	0	0	18	437	-14								
S2500	ACCIONA - Construct Pierhead & X-Head - Pier P21	90	15MAR06A	20JUN06	40	0	50	16	12								
S2550	ACCIONA - Cure, Strip & Reinstale Area - Pier 21	62	21JUN06	01SEP06	0	0	62	16	12								
S3410	CLP Ducts Under Access Rd DSD1-1 Lay-by	10	18APR06A	20APR06A	100	0	0		-15								
S2330	Com DN200 Div along DSD1-1 - inc. Leak Collect	18	24APR06*	16MAY06	0	0	18	149	-22								
S2460	LKJV Regain Access at Pier 20	0		12MAY06	0	0	0	134	-14								
S2390	Remaining DN200 Watermain at Pier 20 Access	6	13MAY06	19MAY06	0	0	6	134	-14								
<b>DSD Maintenance Rd DSD1 (Parallel to Channel)</b>																	
S3210	2 No. Cross Rd Pipes & Roadside Gullies	12	01MAR06A	24APR06	80	0	4	-32	-16								
S2830	Twin DN200 Water Pipe	45	20APR06	14JUN06	0	0	45	-32	-14								
S2700	Access rd DSD1 -barrier footings	12	15JUN06	28JUN06	0	0	12	-32	-14								
S3390	Complete Formation at DSD1	6	15JUN06	21JUN06	0	0	6	-32	-14								
S3120	DN 200 Watermain Diversion EB18 - EB70	40	22JUN06	08AUG06	0	0	40	46	-14								
S2720	Access rd DSD1 - Barriers	12	29JUN06	13JUL06	0	0	12	113	-14								
<b>Works By CLP</b>																	
S2820	Lay CLP Cables (25m induct) Ch0.00 - Ch110	13	20APR06	06MAY06	0	0	13	12	-14								
S2840	Lay CLP Cables Ch110 - Ch230	15	29JUN06	17JUL06	0	0	15	-32	-14								
S2860	Lay CLP Cables Ch230 - Ch395 (Drawpit)	19	18JUL06	08AUG06	0	0	19	-32	-14								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 31	MAY 32	JUN 33	JUL 34	AUG 35	
<b>Terrain Mitigation</b>																	
<b>NTMM - BV-S2</b>																	
102392	NTMM - Constr.Peforated Drain Channel	24	11JUL05A	25MAR06A	100	80	0		-19								
102350	NTMM - Afforestation of Area	60	22MAR06A	14JUN06	5	0	45	137	-21								
<b>Landscaping &amp; Establishment</b>																	
101475	BV - Hard Landscaping	90	02JUN06	15SEP06	0	0	90	-36	-44								
101476	BV - Soft Landscaping & Planting	100	20JUL06	12APR07	0	0	100	-37	-46								
<b>EXCISION WORK-SHEK LEI PUI WATER TREATMENT PLANT</b>																	
102751	Soilid Barrier Type II - Cladding	30	15MAR06A	25MAR06A	100	0	0		-1								
TARG1	Target Date WTW - complete	0		25MAR06A	100	0	0		-1								
<b>Landscaping &amp; Establishment</b>																	
101183	Sth.Appr.Hard Landscaping	1	20APR06	20APR06	0	0	1	412	-48								
101184	Sth.Appr.Soft Landscaping	1	04JUL06	04JUL06	0	0	1	412	-48								
<b>ENT SOUTH PORTAL VENTILATION BUILDING</b>																	
<b>SUBMITTALS &amp; APPROVALS</b>																	
<b>E&amp;M EQPT.&amp; MATERIAL APPROVALS</b>																	
6003	EntSpBldg-App. PD cleans. & flush water sys	18	04NOV04A	04APR06A	100	85	0		-30								
1939	SP.Bldg. - Approve louvre details	24	07APR05A	04MAY06	50	50	12	401	-48								
6004	EntSpBldg-App. PD irrig. sys	18	05MAY05A	12MAY06	30	30	18	425	-48								
1919	SP.Bldg. - Approve door & window details	24	07MAY05A	04MAY06	50	50	12	431	-48								
1947	SP.Bldg. - Approve slate cladding design	24	15JUN05A	04MAY06	50	50	12	401	-48								
1943	SP.Bldg. - Approve aluminium cladding	24	13DEC05A	04MAY06	50	50	12	401	-48								
<b>PROCUREMENT - MATERIAL</b>																	
6008	EntSpBldg-Proc & Manuf. LV power dist. equip't	180	21MAR05A	03JUN06	80	95	36	437	-75								
6007	EntSpBldg-Proc. & Manuf. of HV dist. equip't	180	29MAR05A	13APR06A	100	95	0		-37								
6079	EntSpBldg-Proc & Manuf. FS AFA & FM200 sys	120	29MAR05A	18MAY06	90	40	23	402	19								
6193	EntSpBldg-Proc. & Manuf. of CMCS & ELV sys	180	29MAR05A	20JUN06	85	45	50	375	1								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB		MAR		APR		MAY		JUN		JUL		AUG					
										29	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5
<b>PROCUREMENT - MATERIAL</b>																											
6743	EntSpBldg-Proc & Manuf. MCC, power & control sys	180	29MAR05A	29APR06	95	95	9	415	-48																		
6761	EntSpBldg-Proc & Manuf. TVF,Ductwks & Cont'l sys	180	09JUN05A	24MAR06A	100	95	0		-21																		
8492	EntSpBldg-Proc & Manf bldg related luminaires	180	23NOV05A	30MAR06A	100	83	0		0																		
6751	EntSpBldg-Proc & Manuf. MVAC / TVF pneumatic sys	120	16DEC05A	24MAR06A	100	95	0		-21																		
6011	EntSpBldg-Proc & Manuf. PD irrig. sys	120	17DEC05A	15MAY06	80	76	20	425	-39																		
6009	EntSpBldg-Proc & Manuf. MVAC mech.vent. sys	120	06JAN06A	15JUN06	60	71	46	427	-59																		
6035	EntSpBldg-Proc & Manuf. MVAC Package AC Units	120	06JAN06A	15JUN06	60	71	46	427	-59																		
<b>ABWF WORKS</b>																											
1951	SP.Bldg. - Procure aluminium cladding	180	19APR05A	04MAY06	80	80	12	401	-48																		
2030	SP.Bldg. - Initial deliver balust & metal works	0	20APR06		0	0	0	473	-34																		
2018	SP.Bldg. - Initial deliver fall arrest system	0	02MAY06		0	0	0	464	0																		
1977	SP.Bldg. - Initial deliver doors & windows	0	12JUN06		0	0	0	431	-48																		
2017	SP.Bldg. - Initial delivery louvres	0	18JUL06		0	0	0	401	-48																		
2019	SP.Bldg. - Initial deliver slate cladding	0	18JUL06		0	0	0	401	-48																		
2029	SP.Bldg. - Initial deliver aluminium cladding	0	18JUL06		0	0	0	401	-48																		
<b>MAJOR EQUIPMENT DELIVERY</b>																											
7617	EntSpBldg-Del. HV/LV main & submain cable	48	06FEB06A	30MAY06	60	0	33	440	0																		
6032	EntSpBldg-Del. HV power dist. equip't to 2/F	48	01MAR06A	13APR06A	100	0	0		11																		
6037	EntSpBldg-Del. LV power dist. equip't to 3/F	48	01MAR06A	03JUN06	35	0	0	437	-27																		
6762	EntSpBldg-Del. TVS to Plenum & 3/F	48	01MAR06A	29APR06	70	0	9	464	0																		
8493	EntSpBldg-Del. building related luminaires	48	01MAR06A	29APR06	90	0	9	464	-1																		
6033	EntSpBldg-Del. PD pump & tank to G/F	48	06MAR06A	16MAY06	55	0	21	452	-12																		
6038	EntSpBldg-Del. FS pumps & tank to G/F	48	06MAR06A	16MAY06	55	0	21	452	-12																		
6050	EntSpBldg-Del. building vent. fans	64	06MAR06A	15JUN06	40	0	46	427	-31																		

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB	MAR	APR	MAY	JUN	JUL	AUG	
										29	30	31	32	33	34	35	
<b>MAJOR EQUIPMENT DELIVERY</b>																	
6133	EntSpBldg-Del. Package AC Units	64	06MAR06A	15JUN06	40	0	46	427	-31								
6752	EntSpBldg-Del. MVAC /TVF pneumatic sys to 1/F	48	24MAR06A	06JUN06	20	0	38	435	-29								
6034	EntSpBldg-Del. PD irrig. pump & tank to G/F	48	20APR06	17JUN06	0	0	48	425	-19								
6778	EntSpBldg-Del. ENT Tunnel (Hyd/HR) pumps to G/F	48	20APR06	17JUN06	0	0	48	425	-39								
6744	EntSpBldg-Del. MVAC MCC, & control sys to 3/F	48	02MAY06	29JUN06	0	0	49	415	-49								
6163	EntSpBldg-Del. AFA & FM200 sys	48	19MAY06	15JUL06	0	0	48	402	19								
6194	EntSpBldg-Del. CMCS & ELV equip't	48	21JUN06	16AUG06	0	0	48	375	1								
<b>CONSTRUCTION</b>																	
<b>SP Building TCSS Access</b>																	
T2620	NB carriageway OHVD slab TCSS initial access	0		09MAY06	0	0	0	-35	-35								
T2640	SB carriageway OHVD slab TCSS initial access	0		05JUN06	0	0	0	-42	-28								
T2720	SP Bldg - TCSS Access Entire Structure	0		09JUN06	0	0	0	-37	-1								
<b>CIVIL &amp; ABWF WORKS</b>																	
<b>RC Superstructure</b>																	
T2500	SB carriageway OHVD slab +74	12	10MAR06A	22APR06	80	0	3	-36	-24								
T2570	SB carriageway OHVD slab +74 cure/strike	24	23APR06	16MAY06	0	0	24	-46	-32								
T2590	NB carriageway OHVD slab +74 - cure/strike	14	10MAR06A	20MAR06A	100	0	0		-3								
T2420	2nd Flr Walls & Cols & 3rd Flr Slab (+87.4mPD)	44	06FEB06A	08APR06A	100	25	0		-7								
T2480	3rd Flr Walls & Cols & 4th Flr Slab (+95.3mPD)	43	04APR06A	06MAY06	20	0	13	-75	-1								
T2740	4th Flr Walls & Cols & Roof Slab (+102.3mPD)	34	12MAY06	21JUN06	0	0	34	-75	-11								
T2750	Exhaust Shaft (+111.85mPD)	18	22JUN06	13JUL06	0	0	18	-75	-11								
<b>ABWF</b>																	
T2370	Below Transf slab- Available for BB deliveries	0		12MAY06	0	0	0	-63	-10								
T2380	Above Transf slab - Available for BB delivery	0		09JUN06	0	0	0	-53	-1								
<b>SB Bldg - Internal Works GF</b>																	
T2650	ABWF Initial finishes & Doors to CLP Rm & GF	18	06APR06A	10MAY06	5	0	16	-61	-24								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB	MAR	APR	MAY	JUN	JUL	AUG	
										29	30	31	32	33	34	35	
SB Bldg - Internal Works GF																	
T3290	CLP Rm, Scrdd, Tile, Paint and Doors	18	06APR06A	08MAY06	10	0	14	3	-22								
T3300	Complete Works to HV & LV Cable Risers	10	22JUN06	04JUL06	0	0	10	-56	-11								
T2760	GF - Paint touch up & Doors	12	13JUL06	26JUL06	0	0	12	102	-22								
SP Bldg - Internal Works 1F & LP																	
T2670	ABWF Initial finishes LP & 1F	18	20APR06	12MAY06	0	0	18	-63	-10								
T3310	110V DC Battery Rm	6	20APR06	26APR06	0	0	6	36	-10								
T2770	1F & LP - Paint touch up & Doors	12	05JUN06	17JUN06	0	0	12	134	-10								
SP Bldg - Internal Works 2F																	
T2660	ABWF Initial finishes 2F	18	19MAY06	09JUN06	0	0	18	-55	-1								
SP Bldg - Internal Works 3/F																	
T3160	Installation of Crane beam to underside of 3FL	12	20APR06	04MAY06	0	0	12	-6	-7								
T2680	ABWF Initial finishes 3F	18	19MAY06	09JUN06	0	0	18	-65	-1								
SP Bldg - Internal Works 4F & Above																	
T3170	Installation of Crane beam to underside of 4FL	12	08MAY06	20MAY06	0	0	12	-19	-1								
T3150	Intallation of Crane beam to underside of 5FL	12	22JUN06	06JUL06	0	0	12	-45	-11								
T2690	ABWF Initial finishes 4F	18	05JUL06	25JUL06	0	0	18	91	-11								
Roof & External Facade																	
T2600	NB carriageway OHVD slab + 74 - finishes	6	20APR06	26APR06	0	0	6	-24	-24								
T2580	SB carriageway OHVD slab +74 finishes	6	17MAY06	23MAY06	0	0	6	-33	-23								
T2390	Install Expanded metal cladding	36	08JUN06	20JUL06	0	0	36	107	-11								
T2540	Install Slate Cladding above NB Carriageway	18	22JUN06	13JUL06	0	0	18	95	-11								
T2820	Waterproofing - External Walls	24	22JUN06	20JUL06	0	0	24	47	-11								
T2410	Painting	42	29JUN06	17AUG06	0	0	42	83	-11								
T2530	Roofing Works	6	29JUN06	06JUL06	0	0	6	101	-11								
T2360	Install GMS, S/S Channels, Balustrades & Railing	18	07JUL06	27JUL06	0	0	18	101	-11								
T2730	Waterproofing - Roof	6	07JUL06	13JUL06	0	0	6	113	-11								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart												
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31						
Roof & External Facade																						
T2700	Install Slate Cladding above SB Carriageway	18	14JUL06	03AUG06	0	0	18	95	-11													
T2400	Install composite cladding Panels	60	21JUL06	28SEP06	0	0	60	47	-11													
T2710	Install louvres	90	21JUL06	06NOV06	0	0	90	-75	-11													
<b>E&amp;M - GENERAL</b>																						
<b>ELECTRICAL WORKS</b>																						
T2610	NB carriageway OHVD slab + 74 - BB 1st fix	12	24APR06	09MAY06	0	0	12	-24	-24													
EM1290	BB Work to CLP Room	18	09MAY06	29MAY06	0	0	18	3	-22													
EM1020	E&M Access to 1/F	0	13MAY06*		0	0	0	134	-10													
EM1280	E&M Access to G/F	0	13MAY06		0	0	0	134	-10													
EM1300	Installation of FS Pumps and Pipework at GF	18	13MAY06	03JUN06	0	0	18	134	-10													
EM1310	Installation of Compressor	18	13MAY06	03JUN06	0	0	18	134	-10													
T2630	SB Carriageway OHVD slab +74 BB 1st Fix	12	22MAY06	05JUN06	0	0	12	-33	-23													
T2310	CLP work in CLP room	36	30MAY06	12JUL06	0	0	36	3	-22													
EM1000	E&M access to 3/F	0	10JUN06*		0	0	0	-65	-1													
EM1010	E&M access to 2/F	0	10JUN06*		0	0	0	-55	-1													
EM1030	BS Works for HV Sw + Tx	12	10JUN06	23JUN06	0	0	12	-41	-1													
EM1060	BS Works for LV Sw, MCC, UPS, LCC	12	10JUN06	23JUN06	0	0	12	-42	-1													
EM1110	BS Works for Genset	18	10JUN06	30JUN06	0	0	18	-17	-1													
EM1175	BS Works for TVS Plenums	30	10JUN06	15JUL06	0	0	30	-55	-1													
EM1070	LV Sw, MCC, UPS, LCC Installation	30	24JUN06	29JUL06	0	0	30	-42	-1													
EM1140	E&M Works in Corridors 2/F	24	24JUN06	22JUL06	0	0	24	-54	-1													
EM1150	E&M Works in Corridors 3/F	24	24JUN06	22JUL06	0	0	24	-60	-1													
EM1180	TVS Installation	100	24JUN06	01NOV06	0	0	100	-55	-1													
EM1120	Genset Installation	36	03JUL06	12AUG06	0	0	36	-17	-1													



Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart											
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31					
<b>ELECTRICAL WORKS</b>																					
EM1160	E&M Works in Risers	48	05JUL06	29AUG06	0	0	48	-56	-3												
EM1090	BS Works for 110V Charger Rm	12	24JUL06	05AUG06	0	0	12	-60	-1												
EM1170	Termination of overall Elect HV & LV Sys	30	26JUL06	29SEP06	0	0	30	-65	-6												
<b>Statutory Inspections &amp; Certs</b>																					
EM1320	Submit Form WWO46 for Water Supply to WSD	30	15JUN06	20JUL06	0	0	30	67	-14												
EM1340	Water Supply Certificate issued	0		20JUL06	0	0	0	67	-14												
<b>EAGLES NEST TUNNEL</b>																					
<b>Contract defined dates, stages &amp; sections</b>																					
<b>Area access &amp; vacation dates</b>																					
ACS_F1	Access to Portions - F1 (U/Gnd Sth Portal)	0	20OCT03A		100	100	0		-61												
ACS_F2	Access to Portions - F2 (U/Gnd Sth Tunnel)	0	20OCT03A		100	100	0		-61												
<b>Submittals &amp; Approvals</b>																					
<b>E&amp;M Equip't / Mat'l Detail Submittal</b>																					
8217	EntRtNb-Sub.TVS control sys	54	02JUL04A	24MAR06A	100	67	0		-12												
8220	EntRtSb&VA-Sub.TVS control sys	54	02JUL04A	24MAR06A	100	67	0		-12												
8218	EntRtNb-Sub.TVS in Tunnel	54	07JUL04A	24MAR06A	100	100	0		-123												
8224	EntRtSb&VA-Sub.TVS in Tunnel	54	07JUL04A	24MAR06A	100	100	0		-123												
8213	EntRtNb-Sub.CMCS & ELV sys	78	26AUG04A	27MAR06A	100	77	0		-14												
8221	EntRtSb&VA-Sub.CMCS & ELV sys	78	26AUG04A	27MAR06A	100	77	0		-14												
<b>E&amp;M Equip't/Mat'l Approval by Engineer</b>																					
7618	EntRtSb&VA-App. TVS in Tunnel	18	29JUL04A	31MAR06A	100	100	0		-116												
7621	EntRtNb-App. TVS in Tunnel	18	29JUL04A	31MAR06A	100	100	0		-116												
<b>Design &amp; Engineering - Temporary Works</b>																					
<b>Permanent Works</b>																					
<b>Tunnel</b>																					
1657	Design/ICE Check Tunnel Clading	24	03JAN06A	26APR06	60	60	6	355	-48												
1662	Design/ICE Check Niche Cabinets	48	20APR06	17JUN06	0	0	48	406	-48												

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB		MAR			APR			MAY			JUN			JUL			AUG			
										29	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26
<b>Tunnel</b>																														
1668	Eng Approve Dsg X-passage/Adit Fire Doors	12	20APR06	04MAY06	0	0	12	411	-48																					
1659	Eng Approve Dsg Tunnel Clading	12	27APR06	12MAY06	0	0	12	355	-48																					
1669	Issue Constr Dwgs X-passage/Adit Fire Doors	0		04MAY06	0	0	0	411	-48																					
1658	Issue Constr Dwgs Tunnel Clading	0		12MAY06	0	0	0	355	-48																					
1663	Eng Approve Dsg Niche Cabinets	12	19JUN06	03JUL06	0	0	12	406	-48																					
1664	Issue Constr Dwgs Niche Cabinets	0		11JUL06	0	0	0	406	-48																					
<b>Procurement - Material</b>																														
<b>Tunnelling Project Wide</b>																														
1660	Order/Manufact/Del Tunnel Cladding	200	29DEC05A	08SEP06	10	10	40	355	-48																					
1685	Order/Manufact/Del Fire Doors	50	06MAY06	05JUL06	0	0	50	411	-48																					
<b>NB Tunnel</b>																														
6881	EntRtNb-Proc & Manuf. Tunnel Lgt sys	120	20JAN05A	30MAR06A	100	93	0		-26																					
6879	EntRtNb-Proc & Manuf. CMCS & ELV sys	180	29MAR05A	20MAY06	90	59	25	376	0																					
6883	EntRtNb-Proc & Manuf. FS AFA & Linear sys	180	29MAR05A	30MAY06	90	53	33	440	3																					
7622	EntRtNb-Proc & Manuf. TVS in Tunnel	180	09JUN05A	31MAR06A	100	100	0		-97																					
6887	EntRtNb-Proc & Manuf. TVS control sys	180	01NOV05A	26APR06	90	56	6	467	43																					
<b>SB Tunnel</b>																														
6809	EntRtSb&VA-Proc & Manuf. Tunnel Lgt sys	120	20JAN05A	30MAR06A	100	93	0		-26																					
6786	EntRtSb&VA-Proc & Manuf. FS AFA & Linear sys	180	29MAR05A	30MAY06	90	53	33	392	3																					
6799	EntRtSb&VA-Proc & Manuf. CMCS & ELV sys	180	29MAR05A	20MAY06	90	59	25	376	0																					
7619	EntRtSb&VA-Proc & Manuf. TVS in Tunnel	180	09JUN05A	30MAR06A	100	100	0		-96																					
6796	EntRtSb&VA-Proc & Manuf. TVS control sys	180	01NOV05A	26APR06	90	56	6	467	43																					
<b>Major Equipemnt Delivery</b>																														
<b>Tunnelling Project Wide</b>																														
2027	T/W Procure Pipe Roof SubCon for N.Portals works	42	20APR06	10JUN06	0	0	42	431	-48																					

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB							MAR							APR							MAY							JUN							JUL							AUG						
										29	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14																					
<b>NB Tunnel</b>																																																										
7623	EntRtNb-Del. TVS in Tunnel	72	28NOV05A	30MAR06A	100	51	0		0		[Gantt bar: 28NOV05A to 30MAR06A]																																															
6891	EntRtNb-Del. TVS control sys	48	14JAN06A	26APR06	90	0	0	467	91		[Gantt bar: 14JAN06A to 26APR06]																																															
6890	EntRtNb-Del. LV main & submain dist. sys	96	01FEB06A	30MAY06	60	16	33	440	0		[Gantt bar: 01FEB06A to 30MAY06]																																															
6889	EntRtNb-Del. Tunnel Lgt	48	30MAR06A	29APR06	95	0	9	464	0		[Gantt bar: 30MAR06A to 29APR06]																																															
6886	EntRtNb-Del. CMCS & ELV sys	72	22MAY06	15AUG06	0	0	72	376	0		[Gantt bar: 22MAY06 to 15AUG06]																																															
6888	EntRtNb-Del. AFA & Linear sys	48	01JUN06	30MAY06	0	0	0	440	51		[Gantt bar: 01JUN06 to 30MAY06]																																															
<b>SB Tunnel</b>																																																										
7620	EntRtSb&VA-Del. TVS in Tunnel	72	28NOV05A	30MAR06A	100	51	0		0		[Gantt bar: 28NOV05A to 30MAR06A]																																															
6797	EntRtSb&VA-Del. TVS control sys	48	14JAN06A	26APR06	90	0	6	467	91		[Gantt bar: 14JAN06A to 26APR06]																																															
6804	EntRtSb&VA-Del. LV main & submain dist. sys	96	01FEB06A	30MAY06	60	16	33	440	0		[Gantt bar: 01FEB06A to 30MAY06]																																															
6810	EntRtSb&VA-Del. Tunnel Lgt	75	30MAR06A	29APR06	50	0	9	464	0		[Gantt bar: 30MAR06A to 29APR06]																																															
6801	EntRtSb&VA-Del. CMCS & ELV sys	72	22MAY06	15AUG06	0	0	72	376	0		[Gantt bar: 22MAY06 to 15AUG06]																																															
6787	EntRtSb&VA-Del. AFA & Linear sys	48	01JUN06	27JUL06	0	0	48	392	3		[Gantt bar: 01JUN06 to 27JUL06]																																															
<b>Construction Works</b>																																																										
<b>ENT NORTH PORTAL - ADVANCED WORKS</b>																																																										
<b>Tunnel Lining</b>																																																										
<i>South Portal</i>																																																										
103735	Demobilise lining form SB (from SP) at VA/CP7	12	20APR06	19APR06	0	0	0	-12	-12		[Gantt bar: 20APR06 to 19APR06]																																															
103322	Demobilise OHVD form NB (from NP) at VA/CP7	12	17MAR06A	20MAR06A	100	0	0		34		[Gantt bar: 17MAR06A to 20MAR06A]																																															
103738	Demobilise OHVD form SB (from SP) at VA/CP7	12	14APR06A	19APR06A	100	0	0		0		[Gantt bar: 14APR06A to 19APR06A]																																															
<b>Tunnel Drive North Bound</b>																																																										
<b>Tunnel Invert</b>																																																										
<i>Works progressed from North Portal</i>																																																										
103198	NB Invert Cleaning (fr. NP Ch1980->1862)	20	01MAR06A	20MAR06A	100	0	0		19		[Gantt bar: 01MAR06A to 20MAR06A]																																															
<i>Works progressed from South Portal</i>																																																										
103214	NB exc.grnd/foul water drain trough Ch1653->1862	37	21MAR06A	11APR06A	100	0	0		41		[Gantt bar: 21MAR06A to 11APR06A]																																															
103219	NB Invert Cleaning Ch1553->1653	22	14MAR06A	28MAR06A	100	0	0		40		[Gantt bar: 14MAR06A to 28MAR06A]																																															

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
Works progressed from South Portal																	
103220	NB Invert Cleaning Ch1653->1862	23	21MAR06A	21APR06	85	0	2	51	46								
5591	NB Invert Drainage fr SP CP6->CP7	8	14MAR06A	21APR06	85	0	2	34	-19								
5590	NB Invert Drainage fr SP CP7->CP8	8	21MAR06A	11APR06A	100	0	0		-5								
Tunnel Lining																	
Works progressed from North Portal																	
3322	Demobilise OHVD form NB from NP	12	17MAR06A	20MAR06A	100	0	0		-7								
Works progressed from South Portal																	
3317	NB NP OHVD 160m Tch.1+513 to 1+673 (VA)	26	08JAN06A	10APR06A	100	75	0		-28								
Tunnel Finishing Works																	
TCSS, FS & Works Within Trough																	
3539	NB Cable/Svc trough 150m Ch.1363 to 1513 fr.SP	12	14FEB06A	25MAR06A	100	0	0		3								
3535	NB Cable/Svc trough 175m Ch.1830 to 1673 fr.NP	13	25FEB06A	24APR06	70	0	4	-2	-20								
3540	NB Cable/Svc trough 160m Ch.1513 to 1673 fr.SP	12	11MAR06A	26APR06	50	0	6	6	-8								
Sub-base & Concrete Pavement																	
5566	NB Sub-base & conc pavement fr NP CP10->CP9	6	01MAR06A	20MAR06A	100	0	0		-2								
5567	NB Sub-base & conc pavement fr NP CP9->CP8	6	10MAR06A	31MAR06A	100	0	0		-6								
5574	NB Sub-base & conc pavement fr SP CP3->CP4	6	17FEB06A	21MAR06A	100	0	0		-12								
5572	NB Sub-base & conc pavement fr SP CP4->CP5	6	21FEB06A	28MAR06A	100	0	0		-12								
5571	NB Sub-base & conc pavement fr SP CP5->CP6	6	28FEB06A	11APR06A	100	0	0		-15								
5568	NB Sub-base & conc pavement fr SP CP7->CP8	6	14MAR06A	25APR06	45	0	3	51	49								
5569	NB Sub-base & conc pavement fr SP CP6->CP7	6	14MAR06A	11APR06A	100	0	0		35								
Bituminous Pavement																	
3599	NB Base Course - RHS 650m Ch 3030->2380	4	26APR06	29APR06	0	0	4	129	49								
3600	NB Base Course - RHS 650m Ch 2380->1730	4	02MAY06	06MAY06	0	0	4	129	49								
3601	NB Base Course - RHS 650m Ch 1730->1080	4	08MAY06	11MAY06	0	0	4	129	49								
3603	NB Base Course - LHS 650m Ch 3030->2380	4	12MAY06	16MAY06	0	0	4	129	49								
3604	NB Base Course - LHS 650m Ch 2380->1730	4	17MAY06	20MAY06	0	0	4	129	49								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart												
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31						
<b>Bituminous Pavement</b>																						
3605	NB Base Course - LHS 650m Ch 1730->1080	4	22MAY06	25MAY06	0	0	4	129	49													
<b>VE Panel Installation</b>																						
3606	NB - VE Panel Supt Sys RHS @ CH3030-2380 (650m)	26	20APR06	22MAY06	0	0	26	4	-21													
3607	NB - VE Panel Supt Sys RHS @ CH2380-1730 (650m)	26	23MAY06	22JUN06	0	0	26	4	-21													
3608	NB - VE Panel Supt Sys RHS @ CH1730-1080 (650m)	26	23JUN06	24JUL06	0	0	26	4	2													
3610	NB - VE Panel Supt Sys LHS @ CH3030-2380 (650m)	26	25JUL06	23AUG06	0	0	26	4	2													
3627	NB - VE Panel Claddings RHS @ CH3030-2380 (650m)	26	13MAY06	13JUN06	0	0	26	4	-21													
3628	NB - VE Panel Claddings RHS @ CH2380-1730 (650m)	26	14JUN06	14JUL06	0	0	26	4	-21													
3629	NB - VE Panel Claddings RHS @ CH1730-1080 (650m)	26	15JUL06	14AUG06	0	0	26	4	2													
<b>ENT NB TUNNEL - (E&amp;M) BUILDING SERVICES</b>																						
<b>MVAC / Tunnel Ventilation Syst Above OHVD</b>																						
277963	Ent NB - Install Motorised Smoke & Fire Dampers	72	04JAN06A	08JUN06	45	24	40	-76	-33													
277964	Ent NB - Comp Air Pipes/Condts to E/P16 to E/P21	36	10FEB06A	15JUN06	58	3	15	-76	-39													
277965	Ent NB - Comp Air Pipes/Condts to E/P15 to E/P8	36	27MAR06A	22JUN06	30	0	32	-76	-9													
277966	Ent NB - Comp Air Pipes/ Condts to E/P1to E/P7	36	23JUN06	04AUG06	0	0	36	-64	-9													
277967	Ent NB - Cabling, Wiring and Termination	72	23JUN06	15SEP06	0	0	72	-76	-9													
<b>Plumbing and Drainage</b>																						
277976	Ent NB - 200d W.Main/Brack @ Ch2130-2000 (130m)	5	13MAR06A	20MAR06A	100	0	0		-9													
277979	Ent NB - 200d W.Main/Brack @ Ch1063-1213 (150m)	6	13MAR06A	20MAR06A	100	0	0		-10													
277977	Ent NB - 200d W.Main/Brack @ Ch2000-1830 (170m)	7	20MAR06A	27MAR06A	100	0	0		-6													
277980	Ent NB - 200d W.Main/Brack @ Ch1213-1363 (150m)	6	21MAR06A	28MAR06A	100	0	0		-11													
277978	Ent NB - 200d W.Main/Brack @ Ch1830-1673 (157m)	6	28MAR06A	28APR06	50	0	3	-2	-18													
277981	Ent NB - 200d W.Main/Brack @ Ch1363-1513 (150m)	6	28MAR06A	08APR06A	100	0	0		-10													
277982	Ent NB - 200d W.Main/Brack @ Ch1513-1673 (160m)	7	10APR06A	28APR06	50	0	3	4	-4													
<b>Fire Protection System</b>																						
277993	Ent NB - 150d FS Main pipeworks / brackets @ G/L	72	23JAN06A	08JUN06	36	10	40	-22	-23													

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>Fire Protection System</b>																	
277990	Ent NB - Install FS Conduit @ C/L to AFA Panels	54	07FEB06A	14JUN06	40	5	45	-5	-42								
277994	Ent NB - Install Hose Reel Cabinets & Eqpt @ G/L	48	20APR06	22JUN06	0	0	48	12	-23								
277991	Ent NB - Install brckts/ Supt for FS dectn @ C/L	60	22APR06	13JUL06	0	0	60	-5	-6								
277995	Ent NB - 100d FH / HR Pipeworks & Fittings @ G/L	60	09JUN06	18AUG06	0	0	60	-12	-23								
277992	Ent NB - Install Fire Alarm Detention @ C/L	42	14JUL06	31AUG06	0	0	42	-5	-6								
<b>Electrical Works Above OHVD</b>																	
277998	Ent NB - E&M Access to 3/F UPS Room (NPVB)	0	10MAY06		0	0	0	-45	7								
278000	Ent NB - HV & LV Mn/submain Cables to CP21-CP11	72	10MAY06	03AUG06	0	0	72	-45	7								
277999	Ent NB - E&M Access to 3/F UPS Room (SPVB)	0	10JUN06		0	0	0	-65	-1								
278001	Ent NB - HV & LV Mn/submain Cables to CP01-CP10	72	10JUN06	02SEP06	0	0	72	-65	-1								
<b>Electrical Works Below OHVD</b>																	
278008	Ent NB - Brkts for Lights,CCTV,Camera,Eqpt @ C/L	96	07JAN06A	08JUN06	50	38	40	-64	-28								
278005	Ent NB - TCSS Brkt @ C.Trough Ch2450-2000 (450m)	12	07FEB06A	22MAR06A	100	0	0		0								
278009	Ent NB - Conduit Works (Above & Below OHVD)	60	01MAR06A	07JUL06	30	0	46	-40	-25								
278006	Ent NB - TCSS Brkt @ C.Trough Ch1010-1673 (663m)	18	15MAR06A	29APR06	85	0	9	3	1								
278007	Ent NB - TCSS Brkt @ C.Trough Ch2000-1673 (327m)	9	23MAR06A	08MAY06	70	0	14	-2	-18								
278010	Ent NB - Earthing & Lighting Fixture @ C/Lvl	72	09JUN06	01SEP06	0	0	72	-64	-28								
278011	Ent NB - Install CCTV, Camera, Equipt @ C/Lvl	72	09JUN06	01SEP06	0	0	72	-64	-28								
278012	Ent NB - Cabling,Wirings&Term @ Ceiling/ Grd Lvl	48	08JUL06	22SEP06	0	0	48	-64	-28								
<b>Tunnel Drive South Bound</b>																	
<b>Tunnel Invert</b>																	
<i>Works progressed from North Portal</i>																	
103150	SB exc.grnd/foul water drain trough 213m(fr.NP)	39	07MAR06A	11APR06A	100	0	0		50								
101601	SB Invert Cleaning (fr.NP) 213m	30	07MAR06A	13APR06A	100	0	0		51								
5613	SB Invert Drainage fr NP CP8 -> CP7	12	14MAR06A	08MAY06	90	0	2	24	10								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
Works progressed from South Portal																	
101586	SB exc.grnd/foul water drain trough 342m	60	07MAR06A	15MAY06	55	0	20	104	-8								
101311	SB Invert Cleaning (fr.SP) 239m	66	14FEB06A	28MAR06A	100	0	0		58								
103166	SB Invert Cleaning (fr.SP 342m)	48	14FEB06A	28MAR06A	100	0	0		33								
5617	SB Invert Drainage fr SP CP4 -> CP5	8	07MAR06A	21MAR06A	100	0	0		5								
5616	SB Invert Drainage fr SP CP5 -> CP6	8	21MAR06A	11APR06A	100	0	0		-4								
5615	SB Invert Drainage fr SP CP6 -> CP7	8	11APR06A	10MAY06	50	0	4	114	4								
Tunnel Lining																	
Works progressed from North Portal																	
3161	SB NP OHVD 175m Tch.1+835 to 1+660 VA	30	21JAN06A	20APR06A	100	50	0		-28								
Works progressed from South portal																	
3175	SB SP OHVD 130m Ch.1513 to 1643	22	27FEB06A	20APR06A	100	0	0		-1								
3738	Demobilise OHVD form SB from SP	12	20APR06	04MAY06	0	0	12	-24	0								
Tunnel Finishing Works																	
TCSS, FS & Works Within Trough																	
3567	SB Cable/Svc trough 165m Ch.2000 to 1835 fr.NP	10	15FEB06A	27MAR06A	100	0	0		-9								
3568	SB Cable/Svc trough 175m Ch.1835 to 1660 fr.NP	11	06MAR06A	28APR06	15	0	8	-14	-22								
3570	SB Cable/Svc trough 150m Ch.1063 to 1213 fr.SP	9	24FEB06A	24APR06	66	0	4	-34	-43								
3571	SB Cable/Svc trough 150m Ch.1213 to 1363 fr.SP	9	25APR06	06MAY06	0	0	9	-34	-43								
3572	SB Cable/Svc trough 150m Ch.1363 to 1513 fr.SP	9	08MAY06	17MAY06	0	0	9	-34	-43								
3573	SB Cable/Svc trough 150m Ch.1513 to 1660 fr.SP	9	18MAY06	27MAY06	0	0	9	-34	-43								
Sub-base & Concrete Pavement																	
5631	SB Sub-base & conc pavement fr NP CP11 -> CP10	6	13MAR06A	21APR06	90	0	2	4	-32								
5632	SB Sub-base & conc pavement fr NP CP10 -> CP9	6	22APR06	28APR06	0	0	6	4	-32								
5633	SB Sub-base & conc pavement fr NP CP9 -> CP8	6	29APR06	08MAY06	0	0	6	4	-32								
5634	SB Sub-base & conc pavement fr NP CP8 -> CP7	6	09MAY06	15MAY06	0	0	6	24	29								
5641	SB Sub-base & conc pavement fr SP S Portal->CP2	6	14FEB06A	21APR06	60	0	2	-14	-36								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>Sub-base &amp; Concrete Pavement</b>																	
5640	SB Sub-base & conc pavement fr SP CP2 -> CP3	6	07MAR06A	26APR06	50	0	4	-14	-32								
5639	SB Sub-base & conc pavement fr SP CP3 -> CP4	6	27APR06	04MAY06	0	0	6	12	-30								
5638	SB Sub-base & conc pavement fr SP CP4 -> CP5	6	06MAY06	12MAY06	0	0	6	12	-28								
5637	SB Sub-base & conc pavement fr SP CP5 -> CP6	6	13MAY06	19MAY06	0	0	6	12	-26								
5636	SB Sub-base & conc pavement fr NP CP6 -> CP7	6	23MAY06	29MAY06	0	0	6	104	-6								
<b>Bituminous Pavement</b>																	
3591	SB Base Course - RHS 650m Ch 3030->2380	4	16MAY06	19MAY06	0	0	4	108	29								
3592	SB Base Course - RHS 650m Ch 2380->1730	4	20MAY06	24MAY06	0	0	4	108	29								
3593	SB Base Course - RHS 650m Ch 1730->1080	4	30MAY06	03JUN06	0	0	4	104	25								
3595	SB Base Course - LHS 650m Ch 3030->2380	4	05JUN06	08JUN06	0	0	4	104	25								
3596	SB Base Course - LHS 650m Ch 2380->1730	4	09JUN06	13JUN06	0	0	4	104	25								
3597	SB Base Course - LHS 650m Ch 1730->1080	4	14JUN06	17JUN06	0	0	4	104	25								
<b>VE Panel Installation</b>																	
3613	SB - VE Panel Supt Sys RHS @ CH3030-2380 (650m)	26	06MAY06	06JUN06	0	0	26	-20	0								
3614	SB - VE Panel Supt Sys RHS @ CH2380-1730 (650m)	26	07JUN06	07JUL06	0	0	26	-20	0								
3615	SB - VE Panel Supt Sys RHS @ CH1730-1080 (650m)	26	08JUL06	07AUG06	0	0	26	-20	0								
3620	SB - VE Panel Claddings RHS @ CH3030-2380 (650m)	26	27MAY06	27JUN06	0	0	26	-20	0								
3621	SB - VE Panel Claddings RHS @ CH2380-1730 (650m)	26	28JUN06	28JUL06	0	0	26	-20	0								
<b>ENT SB TUNNEL - (E&amp;M) BUILDING SERVICES</b>																	
MVAC / Tunnel Ventillation System Above OHVD																	
278014	Ent SB - Install Motorised Smoke & Fire Dampers	72	31DEC05A	08JUN06	40	20	40	-78	-30								
278015	Ent SB - Comp Air Pipes/Condts to E/P16 to E/P21	36	27MAR06A	24MAY06	58	0	15	-30	0								
278016	Ent SB - Comp Air Pipes/Condts to E/P15 to E/P8	36	30MAR06A	15JUN06	28	0	25	-4	18								
278017	Ent SB - Comp Air Pipes/ Condts to E/P1 to E/P7	36	09JUN06	21JUL06	0	0	36	-78	0								
278018	Ent SB - Cabling, Wiring and Termination	60	22JUL06	29SEP06	0	0	60	-78	-12								



Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB	MAR	APR	MAY	JUN	JUL	AUG	
										29	30	31	32	33	34	35	
Plumbing and Drainage																	
278026	Ent SB - 200d W.Main/Brack @ Ch2135-2000 (135m)	6	20MAR06A	27MAR06A	100	0	0		13								
278027	Ent SB - 200d W.Main/Brack @ Ch2000-1835 (150m)	7	28MAR06A	22APR06	60	0	3	-14	1								
278028	Ent SB - 200d W.Main/Brack @ Ch1835-1660 (175m)	8	20APR06	12MAY06	0	0	8	-24	0								
278029	Ent SB - 200d W.Main/Brack @ Ch1063-1213 (150m)	7	20APR06	28APR06	0	0	7	-30	-43								
278030	Ent SB - 200d W.Main/Brack @ Ch1213-1363 (150m)	7	29APR06	09MAY06	0	0	7	-30	-43								
278031	Ent SB - 200d W.Main/Brack @ Ch1363-1513 (150m)	7	12MAY06	19MAY06	0	0	7	-32	-43								
278032	Ent SB - 200d W.Main/Brack @ Ch1513-1660 (150m)	7	23MAY06	30MAY06	0	0	7	-34	-21								
Fire Protection System																	
278033	Ent SB - Install FS Conduit @ C/L to AFA Panels	54	07FEB06A	08JUN06	30	5	40	-52	-37								
278036	Ent SB - 150d FS Main pipeworks / brackets @ G/L	72	03APR06A	28JUN06	32	0	57	-67	-4								
278034	Ent SB - Install brcts/ Supt for FS detectn @ C/L	60	22APR06	07JUL06	0	0	60	-52	-1								
278037	Ent SB - Install Hose Reel Cabinets & Eqpt @ G/L	48	29MAY06	25JUL06	0	0	48	-67	-8								
278038	Ent SB - 100d FH / HR Pipeworks & Fittings @ G/L	60	13JUN06	22AUG06	0	0	60	-67	-8								
278035	Ent SB - Install Fire Alarm Detention @ C/L	42	14JUN06	04AUG06	0	0	42	-52	-1								
Electrical Works Above OHVD																	
278043	Ent SB - HV & LV Mn/submain Cables to CP21-CP11	72	20APR06	17JUL06	0	0	72	-54	1								
278041	Ent SB - E&M Access to 2/F LV Switch Room (NPVB)	0	11MAY06		0	0	0	-46	9								
278044	Ent SB - HV & LV Mn/submain Cables to CP01-CP10	72	12MAY06	05AUG06	0	0	72	-47	-1								
278042	Ent SB - E&M Access to 3/F LV Switch Room (SPVB)	0	10JUN06		0	0	0	-47	-1								
Electrical Works Below OHVD																	
278051	Ent SB - Brkts for Lights,CCTV,Camera,Eqpt @ C/L	96	19DEC05A	08JUN06	50	34	40	-70	-25								
278052	Ent SB - Conduit Works (Above & Below OHVD)	60	01MAR06A	29JUN06	30	0	43	-40	-19								
278048	Ent SB - TCSS Brkt @ C.Trough Ch2450-2000 (450m)	14	11MAR06A	27MAR06A	100	0	0		27								
278050	Ent SB - TCSS Brkt @ C.Trough Ch2000-1660 (340m)	10	06APR06A	12MAY06	42	0	13	-19	22								
278049	Ent SB - TCSS Brkt @ C.Trough Ch1010-1660 (650m)	18	01JUN06	21JUN06	0	0	18	-34	-21								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
Electrical Works Below OHVD																	
278053	Ent SB - Earthing & Lighting Fixture @ C/Lvl	72	09JUN06	01SEP06	0	0	72	-70	-25								
278054	Ent SB - Install CCTV, Camera, Equipt @ C/Lvl	72	09JUN06	01SEP06	0	0	72	-70	-25								
278055	Ent SB - Cabling,Wirings&Term @ Ceiling/ Grd Lvl	48	30JUN06	29SEP06	0	0	48	-70	-25								
278086	HGC - Cabling	42	04JUL06	21AUG06	0	0	42	14	-20								
<b>Cross Passage 7</b>																	
Type N4- Straight Section																	
0586	CP7 - Type N4 - SFRC Arch concrete	6	17FEB06A	28MAR06A	100	0	0		-21								
0587	CP7 - Type N4 - Maint Acc Walls & Roof	6	20APR06	26APR06	0	0	6	-59	-36								
Type N3 - Northbound Tunnel																	
0360	CP7 - Type N3 (NB) - SFRC arch (4 bays @ 1d/bay)	4	09MAY06	12MAY06	0	0	4	-47	-13								
0372	CP7 - Type N3 (NB) - Arch formwork dismantle	6	13MAY06	19MAY06	0	0	6	-47	-13								
0374	CP7 - Type N3 (NB) - Maint Acc end wall	6	20MAY06	26MAY06	0	0	6	-47	-13								
0362	CP7 - Type N3 (NB) - Maint Acc side wall & roof	6	19JUN06	24JUN06	0	0	6	-65	-21								
Type N2																	
0575	CP7 - Type N2 - LV Switch room	6	06APR06A	08APR06A	100	0	0		-36								
0573	CP7 - Type N2 - SFRC arch (4 bays @ 1d/bay)	4	03MAY06	08MAY06	0	0	4	-47	-13								
0574	CP7 - Type N2 - Maint Acc Walls & Roof	6	12JUN06	17JUN06	0	0	6	-65	-21								
Type N3 - Southbound Tunnel																	
0383	CP7 - Type N3 (SB) - Wall above lining	6	20APR06	26APR06	0	0	6	-47	-37								
0364	CP7 - Type N3 (SB) - SFRC arch (4 bays @ 1d/bay)	4	27APR06	02MAY06	0	0	4	-47	-13								
0367	CP7 - Type N3 (SB) - Maint Acc Walls & Roof	6	05JUN06	10JUN06	0	0	6	-65	-21								
Type N4 - Combined Section																	
0578	CP7 - Type N4-CS - Arch falsework	6	22MAR06A	29MAR06A	100	0	0		-5								
0579	CP7 - Type N4-CS - SFRC Arch (6 bays @ 2d/bay)	12	30MAR06A	07APR06A	100	0	0		0								
0595	CP7 - Type N4-CS - Arch falsework dismantle	3	18APR06A	20APR06A	100	0	0		-5								
0580	CP7 - Type N4-CS - Maint Acc Walls & Roof	12	20MAY06	03JUN06	0	0	12	-65	-21								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>Type T - Transition</b>																	
0585	CP7 - Type N4-T - Maint Acc Walls & Roof	12	06MAY06	19MAY06	0	0	12	-65	-21								
<b>ENT CROSS PASSAGE CP07 - (E&amp;M) BUILDING SERVICES</b>																	
<i>MVAC / Tunnel Ventillation System Above OHVD</i>																	
278057	E&M Access to 1/F of Ventilation Adit Bldg.	0	23MAY06		0	0	0	4	-16								
278058	CP7 - Comp Air Pipes / Conduits to ENT NB & SB	30	23MAY06	03JUL06	0	0	30	0	-20								
278059	CP7 - Cabling, Wiring, Termination & Test	18	04JUL06	24JUL06	0	0	18	0	4								
<i>Fire Protection System</i>																	
278060	E&M Access to CP7 Cable & Maintenance Access Ducts	0	27MAY06		0	0	0	-42	-18								
278061	CP7 - FS Conduit @ Ceiling Lvl	30	27MAY06	03JUL06	0	0	30	-42	-18								
278062	CP7 - Cabling, Wiring, FS detectn & Alarm Bell	48	04JUL06	28AUG06	0	0	48	-42	-18								
<i>Electrical Works</i>																	
278064	E&M Access to CP7 Cable & Maintenance Access Ducts	0	27MAY06		0	0	0	-42	-30								
278065	CP7 - HV / LV Cable Brackets & Containment	30	27MAY06	03JUL06	0	0	30	-42	-21								
278088	HGC - Cable Containment	30	27MAY06	03JUL06	0	0	30	14	-21								
278066	CP7 - Install Conduit, lighting & switches @ C/L	48	04JUL06	28AUG06	0	0	48	-42	-21								
278068	E&M Access to Vent Adit Bldg 1/F LV Switch Rm	0	04JUL06		0	0	0	-42	-21								
278069	CP7 - HV/ LV Cabling, Wiring & Term to CP7 LV Rm	48	04JUL06	28AUG06	0	0	48	-42	-18								
<b>ENT Cross Passages</b>																	
<b>X-Passages Finishing Works</b>																	
2640	Construct Rooms at CP.10	36	16MAR06A	22MAR06A	100	83	0		-22								
2645	Construct Rooms at CP.4	36	18MAR06A	22MAR06A	100	83	0		8								
2647	Construct Rooms at CP.6	36	22MAR06A	25MAR06A	100	83	0		-4								
5700	Construct Rooms at CP.7	36	06APR06A	08APR06A	100	83	0		-18								
<b>CROSS PASSAGES (CP1-CP6 &amp; CP8-CP21) - (E&amp;M) WORK</b>																	
<i>Electrical Works</i>																	
278074	(CP1-CP21) - Cable Containment & Equipt Support	60	07FEB06A	24MAY06	70	0	28	-16	5								
278072	(CP21-CP11) - MS Doors Installed & Secured	0	20APR06		0	0	0	-42	3								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart												
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31						
<b>Electrical Works</b>																						
278073	(CP1-CP10) - MS Doors Installed & Secured	0	20APR06		0	0	0	-30	20													
278075	(CP1-CP21) - Conduit,light,Signage fixt,Switches	60	20APR06	03JUL06	0	0	60	-24	3													
278077	(CP21-CP11) - MCCB/ MCB Brd,CMCS,Busbar,Switches	72	20APR06	17JUL06	0	0	72	-42	3													
278078	(CP1-CP10) - MCCB/ MCB Brd,CMCS,Busbar,Switches	70	20APR06	14JUL06	0	0	70	-30	20													
278076	(CP1-CP21) - Cabling, Wiring, Termination & Test	36	04JUL06	14AUG06	0	0	36	-24	3													
278079	(CP1-CP21) - LV Cables Terminations	60	04JUL06	23SEP06	0	0	60	-65	-1													
<b>VENTILATION ADIT &amp; BUILDING</b>																						
<b>Submittals &amp; Approvals</b>																						
<b>ABWF &amp; Builders Works</b>																						
1974	VA Bldg. - Approve louvre details	24	07APR05A	04MAY06	50	50	12	401	-48													
1972	VA Bldg. - Approve door & window details	24	07MAY05A	04MAY06	50	50	12	431	-48													
1991	VA Bldg. - Approve slate cladding	24	15JUN05A	04MAY06	50	50	12	401	-48													
1988	VA Bldg. - Approve aluminium cladding	24	13DEC05A	04MAY06	50	50	12	431	-48													
<b>DESIGN &amp; ENGINEERING</b>																						
2276	Design Temp Ventilation Adit	30	20APR06	26MAY06	0	0	30	443	-48													
<b>PROCUREMENT</b>																						
<b>ARCHITECTURAL</b>																						
1995	VA Bldg. - Procure aluminium cladding	30	19APR05A	04MAY06	60	60	12	411	-48													
2034	VA Bldg. - Initial delivery fall arrest system	0	20APR06		0	0	0	473	-21													
2035	VA Bldg. - Initial delivery balust & metal works	0	20APR06		0	0	0	473	-34													
2032	VA Bldg. - Initial delivery doors & windows	0	12JUN06		0	0	0	431	-48													
2038	VA Bldg. - Initial delivery aluminium cladding	0	06JUL06		0	0	0	411	-48													
2031	VA Bldg. - Initial delivery slate cladding	0	18JUL06		0	0	0	401	-48													
2033	VA Bldg. - Initial delivery louvres	0	18JUL06		0	0	0	401	-48													
<b>E&amp;M MATERIALS</b>																						
6591	VaBldg-Proc. & Manuf. of CMCS & ELV sys	180	29MAR05A	17JUN06	85	46	48	377	1													

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB		MAR			APR			MAY			JUN			JUL			AUG							
										29	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24
<b>E&amp;M MATERIALS</b>																																		
6636	VaBldg-Proc & Manuf. FS AFA & FM200 sys	120	29MAR05A	18MAY06	90	30	23	402	13																									
6865	VaBldg-Proc & Manuf. MCC, power & control sys	180	29MAR05A	15MAY06	90	95	20	452	-59																									
6586	VaBldg-Proc & Manuf. FS wet sys	120	06JUN05A	24APR06	95	93	4	421	-43																									
6851	VaBldg-Proc & Manuf. TVF, Ductwks & Cont'l sys	180	09JUN05A	29APR06	90	95	9	416	-48																									
6585	VaBldg-Proc & Manuf. PD fresh & flush water sys	120	30SEP05A	25APR06	85	76	5	420	-24																									
8496	VaBldg-Proc & Manf bldg related luminaires	180	23NOV05A	30MAR06A	100	95	0		-26																									
6858	VaBldg-Proc & Manuf. MVAC / TVF pneumatic sys	120	16DEC05A	29APR06	80	93	9	416	-48																									
8516	VaBldg-Proc & Manuf. MVAC Package AC Units	120	16DEC05A	29APR06	80	93	9	416	-48																									
6588	VaBldg-Proc & Manuf. MVAC mech.vent. sys	180	06JAN06A	29APR06	80	88	9	416	-35																									
<b>MAJOR EQUIPMENT DELIVERY</b>																																		
6593	VaBldg-Del. LV power dist. equip't to 2/F	48	06FEB06A	29APR06	20	27	9	464	-22																									
6866	VaBldg-Del. MVAC MCC, & control sys to 3/F	48	06MAR06A	16MAY06	70	0	21	452	-12																									
7592	VaBldg-Del. PD irrig. pump & tank to G/F	48	07MAR06A	16MAY06	55	0	21	452	26																									
8497	VaBldg-Del. building related luminaires	48	30MAR06A	29APR06	50	0	9	464	0																									
6609	VaBldg-Del. FS pumps & tank to G/F	48	25APR06	22JUN06	0	0	48	421	-43																									
6608	VaBldg-Del. PD pump & tank to G/F	48	26APR06	23JUN06	0	0	48	420	-24																									
6619	VaBldg-Del. building vent. fans	48	02MAY06	28JUN06	0	0	48	416	-49																									
6852	VaBldg-Del. TVS to Plenum & 3/F	48	02MAY06	28JUN06	0	0	48	416	-48																									
6859	VaBldg-Del. MVAC /TVF pneumatic sys to 1/F	48	02MAY06	28JUN06	0	0	48	416	-48																									
8517	VaBldg-Del. Package AC Units	48	02MAY06	28JUN06	0	0	48	416	-48																									
6698	VaBldg-Del. AFA & FM200 sys	48	19MAY06	15JUL06	0	0	48	402	13																									
6666	VaBldg-Del. CMCS & ELV equip't	48	19JUN06	14AUG06	0	0	48	377	1																									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>CONSTRUCTION WORKS</b>																	
<b>Vent Bldg &amp; Adit TCSS Access</b>																	
0295	Vent Bldg & Adt - TCSS Access	0		15JUN06	0	0	0	-3	-32								
<b>ADIT TUNNEL</b>																	
<b>North Bound from South Portal</b>																	
Arch Lining																	
0334	NB fr SP - Tunnel Lining standard section -> CP7	54	18NOV05A	19JUN06	5	5	49	424	-48								
<b>South Bound from South Portal</b>																	
Arch Lining																	
0284	SB fr NP - Tunnel Lining standard section -> CP7	54	20APR06	24JUN06	0	0	54	419	-48								
<b>Vent Adit</b>																	
Type M																	
0358	Vent Adit - Kicker reo & concrete, first 20m	12	06OCT05A	04MAY06	0	0	12	461	-48								
0326	Vent Adit - Drainage & Invert slab VAB -> CP7	36	07OCT05A	12MAY06	50	50	18	-16	-48								
0324	Vent Adit - Maintenance access part 1	30	20APR06	26MAY06	0	0	30	-42	-48								
0328	Vent Adit - Maintenance access part 2	12	20APR06	04MAY06	0	0	12	-65	-44								
0325	Vent Adit - Cable Bracket Installation	12	27MAY06	10JUN06	0	0	12	431	-48								
0379	Vent Adit - HGC Cable Containment	18	27MAY06	17JUN06	0	0	18	26	-48								
0359	Vent Adit - E&M Access	0		10JUN06	0	0	0	431	-48								
Type P - RC Lining																	
0357	Vent Adit - Arch lining to first 20m from VAB	18	01DEC05A	24APR06	78	78	4	-16	-48								
<b>TUNNEL LINING</b>																	
101535	VA Portal Lining (20m) Bldg.	24	06OCT05A	19MAY06	20	20	24	431	-48								
101536	VA Form Portal Transition Structure VA Bldg.	18	20MAY06	10JUN06	0	0	18	431	-48								
<b>EXTERNAL WORKS</b>																	
106589	VaBldg Drainage & Earth mat	48	23APR05A	19MAY06	60	60	24	-66	-48								
S1900	Storm Drainage & petrol interceptor	48	12JUN06	07AUG06	0	0	48	-55	-33								
S1940	Foul Drainage	18	12JUN06	03JUL06	0	0	18	-25	-33								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB	MAR	APR	MAY	JUN	JUL	AUG	
										29	30	31	32	33	34	35	
<b>VENTILATION BUILDING</b>																	
<b>VA Building - Structure</b>																	
T2090	Roof slab at +121.8mPD	18	24FEB06A	19APR06A	100	0	0		-16								
T2100	Walls/Columns and slab to +124.95 (2FL/UP)	22	06APR06A	04MAY06	30	0	12	-66	-32								
T2080	Roof at +131.65mPD	27	28APR06	24MAY06	0	0	27	-84	-43								
T2130	Installation of Exhaust Shaft Steelwork	18	22MAY06	12JUN06	0	0	18	430	-31								
T3130	Installation of Earth mat	60	25MAY06	04AUG06	0	0	60	69	-32								
T3330	Completion of Cable Riser at Grid D3	6	25MAY06	01JUN06	0	0	6	-34	-32								
<b>VA Building - ABWF</b>																	
T2200	ABWF Initial finishes GL	18	29APR06	22MAY06	0	0	18	-62	-16								
T2210	ABWF Initial Finishes 1FL	18	29APR06	22MAY06	0	0	18	-50	-16								
T3190	Installation of Hoist Beam at 1/F	18	06MAY06	26MAY06	0	0	18	18	-16								
T2290	ABWF Initial Finishes Fan Rooms & Plemums	18	25MAY06	15JUN06	0	0	18	-66	-32								
<b>VA Building - External Finishes</b>																	
T2050	Transition Structure - waterproof	6	20APR06	26APR06	0	0	6	133	-48								
T3060	Waterproofing - External Walls	24	10MAY06	07JUN06	0	0	24	-12	-31								
T3110	Install louvres	75	24MAY06	21AUG06	0	0	75	-12	-31								
T3120	Install composite cladding panels	60	24MAY06	03AUG06	0	0	60	94	-31								
T3080	Roofing Works	6	01JUN06	07JUN06	0	0	6	124	-35								
T2110	Install Expanded Metal Cladding	36	08JUN06	20JUL06	0	0	36	106	-31								
T2140	Install Slate Cladding	65	08JUN06	23AUG06	0	0	65	77	-31								
T3070	Render & Paint	42	08JUN06	27JUL06	0	0	42	100	-31								
T3090	Waterproofing - Roof	6	08JUN06	14JUN06	0	0	6	136	-35								
T3100	Install GMS, S/S channels, balustrads & railing	18	16JUN06	07JUL06	0	0	18	117	-32								
<b>ELECTRICAL WORKS</b>																	
EM2000	E&M access to G/F	0	23MAY06*		0	0	0	-62	-16								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart												
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31						
<b>ELECTRICAL WORKS</b>																						
EM2020	E&M access to 1/F	0	23MAY06*		0	0	0	-50	-16													
EM2040	BS Works for HV Sw + Tx	12	23MAY06	06JUN06	0	0	12	-62	-16													
EM2100	BS Works for LV Sw, MCC, UPS, LCC	12	23MAY06	06JUN06	0	0	12	-50	-16													
EM2160	BS Works for 110V Charger Rm	12	07JUN06	20JUN06	0	0	12	-44	-16													
EM2200	BS Works for Genset	18	07JUN06	27JUN06	0	0	18	-56	-16													
EM2260	E&M Works in Corridors G/F	24	07JUN06	05JUL06	0	0	24	-50	-16													
EM2280	E&M Works in Corridors 1/F	24	07JUN06	05JUL06	0	0	24	-62	-16													
EM2310	BS Works in TVS Plenums	30	16JUN06	21JUL06	0	0	30	-66	-32													
EM2120	LV Sw, MCC, UPS, LCC Installation	30	20JUN06	25JUL06	0	0	30	-49	9													
EM2220	Genset Installation	36	28JUN06	09AUG06	0	0	36	-56	-16													
EM2300	E&M Works in Risers	48	06JUL06	30AUG06	0	0	48	-62	-16													
EM2060	HV Sw + Tx Installation	30	07JUL06	10AUG06	0	0	30	-81	-31													
EM2320	TVS Installation	90	11JUL06	25OCT06	0	0	90	-66	-32													
EM2050	HGC - Cable Containment	18	23MAY06	13JUN06	0	0	18	30	-16													
<b>Testing &amp; Commissioning</b>																						
EM2180	110V Charger Rm Installation + T&C	12	21JUN06	05JUL06	0	0	12	-44	-16													
EM2140	LV Sw, MCC, UPS, LCC Termination + T&C	30	26JUL06	29AUG06	0	0	30	-49	9													
<b>ENT NORTH PORTAL VENTILATION BUILDING</b>																						
<b>SUBMITTALS &amp; APPROVALS</b>																						
<b>ABWF &amp; Builders Works</b>																						
1955	NP.Bldg. - Prep & submit louvre details	24	19NOV04A	04MAY06	50	50	12	431	-48													
1959	NP.Bldg. - Prep & sub aluminium cladding	24	19NOV04A	04MAY06	50	50	12	411	-48													
1970	NP.Bldg. - Prep & submit slate cladding	24	19NOV04A	04MAY06	50	50	12	401	-48													
1946	NP.Bldg. - Prep & submit door & window detail	24	17FEB05A	04MAY06	50	50	12	461	-48													
1954	NP.Bldg. - Approve door & window details	24	06APR05A	04MAY06	50	50	12	431	-48													



Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>ABWF &amp; Builders Works</b>																	
1956	NP.Bldg. - Approve louvre details	24	08APR05A	04MAY06	50	50	12	431	-48								
1963	NP.Bldg. - Approve slate cladding	24	15JUN05A	04MAY06	50	50	12	401	-48								
1960	NP.Bldg. - Approve aluminium cladding	24	13DEC05A	04MAY06	50	50	12	411	-48								
<b>PROCUREMENT - MATERIAL</b>																	
<b>ABWF WORKS</b>																	
1967	NP.Bldg. - Procure aluminium cladding	180	18JAN05A	04MAY06	50	50	12	411	-48								
2052	NP.Bldg. - Initial delivery balust & metal works	0	20APR06		0	0	0	473	-18								
2053	NP.Bldg. - Initial delivery fall arrest system	0	02MAY06		0	0	0	464	0								
2039	NP.Bldg. - Initial delivery doors & windows	0	12JUN06		0	0	0	431	-48								
2049	NP.Bldg. - Initial delivery louvre	0	12JUN06		0	0	0	431	-48								
2050	NP.Bldg. - Initial delivery aluminium cladding	0	06JUL06		0	0	0	411	-48								
2051	NP.Bldg. - Initial delivery slate cladding	0	18JUL06		0	0	0	401	-48								
<b>E&amp;M WORKS</b>																	
6208	EntNpBldg-Proc. & Manuf. of CMCS & ELV sys	180	29MAR05A	20JUN06	85	46	50	375	-1								
6269	EntNpBldg-Proc & Manuf. FS AFA & FM200 sys	120	29MAR05A	18MAY06	90	35	23	402	13								
6824	EntNpBldg-Proc & Manuf. TVF, Ductwks&Cont'l sys	180	09JUN05A	10APR06A	100	95	0		-34								
6204	EntNpBldg-Proc & Manuf. Cleans & flush water sys	120	30SEP05A	29APR06	85	61	9	416	-10								
8500	EntNpBldg-Proc & Manf bldg related luminaires	180	23NOV05A	30MAR06A	100	100	0		-48								
6831	EntNpBldg-Proc & Manuf. MVAC / TVF pneumatic sys	120	16DEC05A	06APR06A	100	93	0		-31								
6206	EntNpBldg-Proc & Manuf. MVAC mech.vent. sys	180	06JAN06A	25APR06	95	95	5	420	-44								
6230	EntNpBldg-Proc & Manuf. MVAC Package AC Units	120	11JAN06A	25APR06	95	93	5	420	-44								
<b>MAJOR EQUIPMENT DELIVERY</b>																	
<b>ENT NORTH PORTAL BUILDING</b>																	
6212	EntNpBldg-Del. LV power dist. equip't to 1/F	52	21MAR05A	29APR06	30	83	9	464	-48								
6231	EntNpBldg-Del. FS pumps & tank to G/F	48	06MAR06A	16MAY06	50	0	21	452	-12								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>ENT NORTH PORTAL BUILDING</b>																	
8501	EntNpBldg-Del. building related luminaires	48	30MAR06A	15JUN06	70	27	46	427	-59								
6825	EntNpBldg-Del. TVS to Plenum & 3/F	48	10APR06A	16MAY06	20	0	21	452	-12								
6832	EntNpBldg-Del. MVAC /TVF pneumatic sys to 1/F	48	10APR06A	15JUN06	10	0	46	427	-37								
6839	EntNpBldg-Del. MVAC MCC, & control sys to 3/F	48	20APR06	19APR06	0	27	0	473	-13								
6845	EntNpBldg-Del. ENT Tunnel (Hyd/HR) pumps to G/F	48	20APR06	17JUN06	0	0	48	425	-39								
6242	EntNpBldg-Del. building vent. fans	48	26APR06	23JUN06	0	0	48	420	-44								
6327	EntNpBldg-Del. Package AC Units	48	26APR06	23JUN06	0	0	48	420	-44								
6229	EntNpBldg-Del. PD pump & tank to G/F	48	02MAY06	28JUN06	0	0	48	416	-10								
6359	EntNpBldg-Del. AFA & FM200 sys	48	19MAY06	15JUL06	0	0	48	402	13								
6288	EntNpBldg-Del. CMCS & ELV equip't	48	21JUN06	16AUG06	0	0	48	375	-1								
<b>CONSTRUCTION</b>																	
<b>TCSS Access at NP Bldg</b>																	
T1550	NB Below NP Bldg TCSS initial Access	0		26APR06	0	0	0	-57	-61								
T1580	SB Below NP Bldg TCSS initial Access	0		26APR06	0	0	0	-30	-44								
T1400	NP Bldg - TCSS Access within entire structure	0		10MAY06	0	0	0	457	7								
<b>CIVIL &amp; ABWF WORKS</b>																	
<b>RC Superstructure</b>																	
T1300	NP Bldg - 3rdF walls and 4th Flr Slab(+93.83mPD)	43	20FEB06A	01APR06A	100	0	0		6								
T1310	NP Bldg - 4th Floor - walls and Roof(+100.63mPD)	34	03APR06A	19MAY06	10	0	24	-52	-7								
S1370	Construct earth mat	36	20MAY06	03JUL06	0	0	36	12	-7								
T1390	NP Bldg - Exhaust Shaft (+110.38mPD)	18	20MAY06	10JUN06	0	0	18	30	-7								
<b>ABWF Works</b>																	
T1350	BB Access 3rd Floor - critical rooms	0		10MAY06	0	0	0	-45	7								
T1360	BB Access 4th Floor/Roof - critical rooms	0		24JUN06	0	0	0	37	-8								
<b>Internal Works GF</b>																	
T1650	GF ABWF Initial finishes	18	04MAR06A	06MAY06	10	0	13	81	-30								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
Internal Works GF																	
T1320	GF BB Access grd Floor	0		06MAY06*	0	0	0	81	-30								
T3320	Complete Works to Cable Risers	6	20MAY06	26MAY06	0	0	6	-24	-7								
NP Bldg - Internal Works 1F																	
T1590	1F & LP ABWF Initial finishes	18	30MAR06A	02MAY06	20	0	10	120	-27								
T1330	1F BB access 1st Floor/LPL - critical rooms	0		02MAY06	0	0	0	120	-27								
NP Bldg - Internal Works 2F																	
T1990	Installation of Crane beam to underside of 3FL	12	15MAR06A	28APR06	10	0	8	-20	-39								
T1600	2F ABWF Initial Finishes	18	06APR06A	10MAY06	15	0	15	-49	9								
NP Bldg Internal Works 3/F																	
T1610	3F ABWF initial finishes	18	18APR06A	10MAY06	5	0	16	-45	7								
T2000	Installation of Crane beam to underside of 4FL	12	20APR06	04MAY06	0	0	12	-24	5								
T1880	3F - paint touch up & doors	12	15JUL06	28JUL06	0	0	12	99	9								
NP Building - Internal Works																	
T2430	Installation of Crane beam to underside of 5FL	18	02JUN06	22JUN06	0	0	18	-52	-7								
T1620	4F ABWF initial finishes	12	12JUN06	24JUN06	0	0	12	30	-7								
NP Bldg - Roofing & External Facade																	
T1530	NP Bldg - OHVD Slab NB - Finishes	6	20APR06	26APR06	0	0	6	-45	-48								
T1560	NP Bldg - OHVD Slab SB - Finishes	6	20APR06	26APR06	0	0	6	-22	-34								
T1770	Install Expanded metal cladding	36	04MAY06	17JUN06	0	0	36	133	-7								
T1760	Install Slate Cladding above NB carriageway	18	12MAY06	03JUN06	0	0	18	127	-7								
T2240	Waterproofing - External Walls	24	20MAY06	17JUN06	0	0	24	73	-7								
T1730	Painting	42	27MAY06	17JUL06	0	0	42	109	-7								
T1800	Roofing works	6	27MAY06	03JUN06	0	0	6	127	-7								
T1700	Waterproofing - Roof	6	05JUN06	10JUN06	0	0	6	139	-7								
T1780	Install Slate Cladding above SB carriageway	18	05JUN06	24JUN06	0	0	18	127	-7								
T1790	Install GMS, S/S channels, balustrades & railing	18	05JUN06	24JUN06	0	0	18	127	-7								



Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB	MAR	APR	MAY	JUN	JUL	AUG	
										29	30	31	32	33	34	35	
Testing & Commissioning																	
EM2780	110V Charger Rm Installation + T&C	12	24MAY06	07JUN06	0	0	12	-15	7								
EM2680	MCC, LCC Termination + T&C	30	22JUN06	27JUL06	0	0	30	-27	7								
EM2740	LV Sw Termination + T&C	30	30JUN06	04AUG06	0	0	30	-34	9								
EM2840	Genset Termination + T&C	12	15JUL06	28JUL06	0	0	12	-40	9								
<b>TOLL PLAZA &amp; ANCILLIARY STRUCTURES</b>																	
<b>SUBMITTALS &amp; APPROVALS</b>																	
<b>ABWF &amp; BW SUBMITTALS</b>																	
1522	TP/FB - Approve footbridge details	24	28JUL05A	04MAY06	50	50	12	443	-48								
<b>Design &amp; Engineering - Temporary Works</b>																	
<b>50.030.020</b>																	
1244	Design/ICE Check Tool Booth Canopy	24	20APR06	19MAY06	0	0	24	430	-48								
1341	Eng Approve Dsg Tool Booth Canopy	12	20MAY06	03JUN06	0	0	12	430	-48								
1358	Issue Constr Dwgs Tool Booth Canopy	0	13JUN06	12JUN06	0	0	0	430	-48								
<b>Procurement - Major Material</b>																	
2184	Order/Fabricate/Deliver FBridge Structural Steel	120	01APR05A	15MAY06	83	83	20	453	-48								
1518	Admin Bldg - Procure & manufacture lift	270	01JUN05A	26MAY06	89	89	30	443	-48								
2185	Order/Fabricate/Deliver Tool Booth Canopy	90	01DEC05A	26JUL06	11	11	80	393	-48								
<b>Toll Plaza</b>																	
1512	TP/FB - Procure & manufacture lifts (x2)	270	15JUL05A	26MAY06	89	89	30	443	-48								
1521	TP/FB - Procure & fabricate footbridge	110	15JUL05A	26MAY06	73	73	30	443	-48								
7548	TP-Proc & Manuf. MVAC Package AC Units	120	11JAN06A	15JUL06	50	10	71	354	1								
<b>MAJOR EQUIPMENT DELIVERY</b>																	
<b>TOLL PLAZA</b>																	
7549	TP-Del. Package AC Units	48	17JUL06	09SEP06	0	0	48	354	1								
<b>Construction Works</b>																	
<b>Toll Plaza - TCSS Access</b>																	
K1162	Toll Plaza - TCSS Access (East Side)	0		15JUL06	0	0	0	-12	-27								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>TOLL PLAZA EAST SIDE</b>																	
K1282	Provision of micro-satellite-office at East Loop	186	13MAR06A	21SEP06	34	0	123	16	15								
K1202	Remove/relocate - Workshop & Offices	24	13APR06A	22APR06	90	0	3	-12	-27								
K1182	East Loop Road - Drainage	28	20APR06	24MAY06	0	0	28	16	-48								
K1232	Carriageway Drainage Prior to TCSS	36	24APR06	07JUN06	0	0	36	-12	-27								
S1360	Remove stockpile (all used within tunnel)	0		19MAY06	0	0	0	12	7								
K1212	Main Carid'way Drain (D3 & D4) - after stockpile	57	20MAY06	27JUL06	0	0	57	14	7								
K1262	HML Bases (2no. Loop rd, Admin bldg)	12	20MAY06	03JUN06	0	0	12	59	7								
K1252	BB lighting works	24	05JUN06	03JUL06	0	0	24	121	7								
S1160	Installation of Ducting and Drawpits for TCSS	32	08JUN06	15JUL06	0	0	32	-12	-27								
K1222	Main carriageway Ducting & Drawpits	54	12JUN06	29AUG06	0	0	54	14	7								
K1242	Main carriageway - East Subbase and kerbs	53	12JUL06	27SEP06	0	0	53	14	7								
S1420	Road Pavement Surfacing (Flex & Rigid)	56	26JUL06	17OCT06	0	0	56	14	7								
<b>TOLL PLAZA WEST SIDE</b>																	
K1161	CSJV, Remove TAR1, drainage, formation (RE Wall)	56	24SEP05A	19MAY06	50	0	24	-52	-16								
K1231	CSJV Complete Drainage & Vacate part	24	31DEC05A	04MAY06	50	0	12	-42	-36								
K1181	Main Carriageway - West side drainage - NP-FB	42	20MAR06A	30JUN06	5	0	35	-42	-29								
K1201	West Loop Drainage Works	38	01APR06A	08JUN06	15	0	28	30	-26								
K1241	Main Carriageway - West side drainage - FB-SHT	45	20MAY06	13JUL06	0	0	45	-52	-16								
K1171	West Loop road - Roadworks	36	09JUN06	21JUL06	0	0	36	30	-26								
K1191	Drawpits & Ducting (incl TCSS)	42	14JUL06	31AUG06	0	0	42	-52	-16								
S1270	HML bases (2no. - loop rd, lay by,)	12	14JUL06	27JUL06	0	0	12	76	-16								
<b>TOLL PLAZA - works adjacent to building</b>																	
S1415	SHT SPB - Drainage & Ducting	18	28FEB06A	28APR06	95	0	8	173	-30								
S1427	Admin Blg & Wshp - Drainage & ducting	36	07MAR06A	24MAY06	20	0	28	123	-36								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>TOLL PLAZA - works adjacent to building</b>																	
S1380	ENT NPB - Drainage & Ducting	18	01APR06A	12MAY06	5	0	15	151	-24								
S1390	ENT NPB - HML Base	8	20APR06	19MAY06	0	0	8	151	-24								
S1400	ENT NPB - Kerbs & Rwks & misc Finishes	12	20APR06	26MAY06	0	0	12	151	-24								
S1416	SHT SPB - HML Base	8	20APR06	28APR06	0	0	8	167	-48								
S1417	SHT SPB - Kerbs & Rwks & misc finishes	12	20APR06	08MAY06	0	0	12	167	-48								
S1440	Install Earth Mat for Admin Bldg & SHT NP Bldg	36	20MAY06	03JUL06	0	0	36	12	7								
S1437	Admin Bldg & Wshop - kerbs, Rwks & misc finishes	30	04JUL06	07AUG06	0	0	30	91	-16								
<b>TOLL PLAZA COLLECTOR'S SUBWAY</b>																	
<b>STRUCTURE</b>																	
101720	TP/CS - Waterproof & backfill - Ptn C	18	20DEC05A	24APR06	90	70	4	75	-47								
101721	TP/CS - Waterproof & backfill - Ptn D	18	20MAR06A	10MAY06	55	0	12	75	-32								
<b>ABWF</b>																	
101471	TP/CS - Internal Finishes Ptn A, B & C	24	11MAY06	08JUN06	0	0	24	75	-32								
101472	TP/CS - Internal Finishes Ptn D	12	09JUN06	22JUN06	0	0	12	75	-32								
S1290	Toll Subway - E&M	54	23JUN06	25AUG06	0	0	54	75	-32								
<b>TOLL PLAZA FOOTBRIDGE</b>																	
S1274	Excavate & Construct Butress	12	06MAY06	19MAY06	0	0	12	-42	-36								
<b>STRUCTURAL STEELWORKS</b>																	
S1330	Toll Ftbridge - Erection(Inc weld prior to lift)	60	13MAR06A	08JUN06	35	0	40	-24	-10								
<b>ABWF</b>																	
S1264	Installation of Aluminium Cladding	38	09JUN06	24JUL06	0	0	38	-19	-10								
S1340	Toll Plaza - Erection of Lift Steel Work	24	20APR06	19MAY06	0	0	24	61	-16								
<b>E &amp; M WORKS</b>																	
S1200	Toll Plaza Footbridge - Lift Installation	72	20MAY06	14AUG06	0	0	72	61	-16								
S1470	Cable Containment (BB)	18	25JUL06	14AUG06	0	0	18	31	-10								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart											
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31					
<b>TOLL PLAZA BOOTHS</b>																					
S1210	Construct Toll Islands 17 No.	51	09JUN06	08AUG06	0	0	51	-24	-10												
S1220	Construct Toll Booths - 22No.	88	10JUL06	21OCT06	0	0	88	-24	-10												
<b>ADMIN.BLDG. - WORKSHOP</b>																					
S1120	Workshop - Base slab	12	18MAR06A	18APR06A	100	0	0		-12												
S1130	Workshop - Walls	24	14APR06A	12MAY06	10	0	18	79	-7												
S1240	Workshop - Roof Slab +70.0mPD	18	13MAY06	03JUN06	0	0	18	79	-7												
S1430	Workshop Roof Slab +73.0mPD	12	27MAY06	10JUN06	0	0	12	79	-7												
S1260	Workshop - initial Finishes incl block walls	24	12JUN06	10JUL06	0	0	24	79	-7												
S1350	Workshop - External Finishes	60	12JUN06	21AUG06	0	0	60	79	-7												
S1280	Workshop - Install Roller Shutters	12	11JUL06	04AUG06	0	0	12	93	-7												
S1320	Workshop - Remaining internal Finishes	36	11JUL06	21AUG06	0	0	36	79	-7												
<b>ADMINISTRATION BUILDING</b>																					
<b>SUBMITTALS &amp; APPROVALS</b>																					
<b>ABWF. MTRL SUBMITTALS</b>																					
1883	Admin.Bldg. - Prep & sub sheet decking details	24	13NOV04A	04MAY06	12	12	12	431	-48												
1885	Admin.Bldg. - Prep & submit wood ceiling details	24	20NOV04A	04MAY06	50	50	12	413	-48												
1881	Admin.Bldg. - Prep & sub GRP water tank details	24	12JAN05A	04MAY06	50	50	12	407	-48												
1892	Admin.Bldg. - Approve door & window details	24	06APR05A	04MAY06	50	50	12	437	-48												
1894	Admin.Bldg. - Approve louvre details	24	07APR05A	04MAY06	50	50	12	431	-48												
1819	Admin.Bldg. - Approve stone cladding design	24	15JUN05A	04MAY06	50	50	12	401	-48												
1820	Admin.Bldg. - Approve slate cladding design	24	15JUN05A	04MAY06	50	50	12	401	-48												
1887	Admin.Bldg. - Prep & sub suspend ceiling details	24	12AUG05A	04MAY06	50	50	12	377	-48												
1898	Admin.Bldg. - Approve aluminium cladding	24	13DEC05A	04MAY06	50	50	12	401	-48												
1882	Admin.Bldg. - Approve GRP water tank details	24	06MAY06	03JUN06	0	0	24	407	-48												



Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB		MAR			APR			MAY			JUN			JUL			AUG							
										29	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24
<b>ABWF. MTRL SUBMITTALS</b>																																		
1884	Admin.Bldg. - Approve sheet decking details	24	06MAY06	03JUN06	0	0	24	431	-48																									
1886	Admin.Bldg. - Approve wood ceiling details	24	06MAY06	03JUN06	0	0	24	413	-48																									
1888	Admin.Bldg. - Approve suspended ceiling details	24	06MAY06	03JUN06	0	0	24	377	-48																									
<b>E&amp;M EQPT. / MTRL. SUBMITTALS</b>																																		
8248	AdmBldg-Engineer to provide Cater'g equip detail	0	07APR05A		100	100	0		-48																									
<b>DESIGN &amp; ENGINEERING</b>																																		
<b>TEMPORARY WORKS</b>																																		
1373	Design/ICE Temp False/Formwork Admin Bldg	48	20APR06	17JUN06	0	0	48	425	-48																									
<b>ABWF WORKS</b>																																		
1802	Admin.Bldg. - Design stone cladding	36	04APR05A	19MAY06	50	50	24	401	-48																									
1803	Admin.Bldg. - Design slate cladding	36	04APR05A	19MAY06	50	50	24	401	-48																									
<b>PROCUREMENT - MATERIAL</b>																																		
<b>ABWF WORKS</b>																																		
1904	Admin.Bldg. - Procure wood ceiling	90	19JAN05A	04MAY06	87	87	12	411	-48																									
6397	AdmBldg-Proc & Manuf. of CMCS, ELV & TCS sys	180	31JAN05A	20MAY06	90	59	25	376	0																									
1909	Admin.Bldg. - Procure balustrade & metal works	90	09MAR05A	04MAY06	87	87	12	449	-48																									
1910	Admin.Bldg. - Procure aluminium cladding	90	09MAR05A	04MAY06	87	87	12	371	-48																									
1916	Admin.Bldg. - Procure slate cladding	90	14MAR05A	04MAY06	50	50	12	371	-48																									
1902	Admin.Bldg. - Procure GRP water tank	90	16MAR05A	04MAY06	87	87	12	431	-48																									
6444	AdmBldg-Proc & Manuf. FS AFA & FM200 sys	120	29MAR05A	30MAY06	85	30	33	392	3																									
1917	Admin.Bldg. - Procure stone cladding	90	03MAY05A	04MAY06	50	50	12	371	-48																									
1905	Admin.Bldg. - Procure suspended ceiling	120	09MAY05A	03JUN06	70	70	36	347	-48																									
6393	AdmBldg-Proc & Manuf. PD fresh & flush water sys	90	30SEP05A	24APR06	95	48	4	421	-5																									
6479	AdmBldg-Proc & Manuf. Chiller & Pumps	90	03JAN06A	03APR06A	100	49	0		8																									
6395	AdmBldg-Proc & Manuf. MVAC mech.vent. sys	90	06JAN06A	06APR06A	100	90	0		-31																									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB							MAR							APR							MAY							JUN							JUL							AUG																																																																																																																																			
										29	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	30	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	31	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	32	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	33	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	34	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
<b>ABWF WORKS</b>																																																																																																																																																																																							
6415	AdmBldg-Proc & Manuf. FCUs & PAUs	90	16FEB06A	10APR06A	100	7	0		41																																																																																																																																																																														
1938	Admin.Bldg. - Initial delivey glass canopy	0	20APR06		0	0	0	473	-48																																																																																																																																																																														
2055	Admin.Bldg. - Initial delivery curtain wall	0	20APR06		0	0	0	473	-45																																																																																																																																																																														
2059	Admin.Bldg. - Initial delivery fall arrest syst	0	20APR06		0	0	0	473	-21																																																																																																																																																																														
2060	Admin.Bldg. - Initial delivery balust & mtl wks	0	20MAY06		0	0	0	449	-48																																																																																																																																																																														
2057	Admin.Bldg. - Initial delivery doors & windows	0	05JUN06		0	0	0	437	-48																																																																																																																																																																														
2054	Admin.Bldg. - Initial delivery louvres	0	12JUN06		0	0	0	431	-48																																																																																																																																																																														
2056	Admin.Bldg. - Initial delivery sheet decking	0	12JUN06		0	0	0	431	-48																																																																																																																																																																														
2058	Admin.Bldg. - Initial delivery wood ceiling	0	06JUL06		0	0	0	411	-48																																																																																																																																																																														
2063	Admin.Bldg. - Initial delivery GRP water tank	0	11JUL06		0	0	0	407	-48																																																																																																																																																																														
<b>MAJOR EQUIPMENT DELIVERY</b>																																																																																																																																																																																							
<b>ADMINISTRATION BUILDING</b>																																																																																																																																																																																							
6400	AdmBldg-Del. HV power dist. equip't to 2/F	48	27JAN06A	10APR06A	100	27	0		-8																																																																																																																																																																														
8505	AdmBldg-Del. building related luminaires	48	01MAR06A	29APR06	50	0	9	464	0																																																																																																																																																																														
6401	AdmBldg-Del. LV power dist. equip't to 2/F	48	06MAR06A	06MAY06	20	0	13	460	-4																																																																																																																																																																														
6417	AdmBldg-Del. FS pumps & tank to G/F	48	06MAR06A	16MAY06	50	0	21	452	-12																																																																																																																																																																														
6480	AdmBldg-Del. Chiller & Pumps	48	03APR06A	17JUN06	20	0	48	425	-2																																																																																																																																																																														
6428	AdmBldg-Del. building vent. fans	48	06APR06A	30MAY06	20	0	33	440	-24																																																																																																																																																																														
6497	AdmBldg-Del. FCUs & PAUs	48	10APR06A	15JUN06	60	0	46	427	38																																																																																																																																																																														
6416	AdmBldg-Del. PD pump & tank to G/F	48	25APR06	22JUN06	0	0	48	421	-5																																																																																																																																																																														
6476	AdmBldg-Del. CMCS, ELV & TCS equip't	72	22MAY06	15AUG06	0	0	72	376	0																																																																																																																																																																														
6534	AdmBldg-Del. AFA & FM200 sys	48	01JUN06	27JUL06	0	0	48	392	3																																																																																																																																																																														
<b>CONSTRUCTION</b>																																																																																																																																																																																							
<b>TCSS Access at Admin Bldg</b>																																																																																																																																																																																							
T2910	TCSS Access at Administration Bldg (24JUN06)	0		10JUL06	0	0	0	-12	-37																																																																																																																																																																														

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>CIVIL &amp; ABWF WORKS</b>																	
<b>Substructure</b>																	
106398	Admin.Bldg. - Earth Mat & Rods - All in ptn D4	36	20MAY06	03JUL06	0	0	36	24	-16								
<b>ABWF</b>																	
<b>Admin Bldg - Internal Works GF</b>																	
T1680	Scrd, paint, glaze, ceiling hanger - GF GL 1-9	24	25MAR06A	16MAY06	2	0	21	-90	-40								
T3230	LV & HV Switch Rms (G39 & G40), BlockWork	10	19APR06A	29APR06	2	0	9	452	-47								
T3240	Genset & Fuel Rms (G45 & G46), Blockwork	10	19APR06A	29APR06	2	0	9	-45	-47								
T2990	Scrd, paint, glaze, ceiling hanger - GF GL 13-21	24	20APR06	07JUN06	0	0	24	-90	-40								
T3020	Installation of roller shutters	12	20APR06	04MAY06	0	0	12	169	-43								
T3210	Complete Cable Riser at Grid 9B	6	20APR06	26APR06	0	0	6	-60	-44								
T3220	LV & HV Switch Rm (G39 & G40), Scrd & Paint	12	02MAY06	16MAY06	0	0	12	452	-47								
T3250	Genset & Fuel Rms (G45 & G46), Flr Tiles & Paint	12	02MAY06	16MAY06	0	0	12	-45	-47								
T1970	Scrd, paint, glaze, ceiling hanger - GF GL 9-13	18	13MAY06	21JUN06	0	0	18	-90	-40								
<b>Admin Bldg - Internal Works 1F</b>																	
T1980	Scrd, paint, glaze, ceiling hanger - 1F GL 1-9	30	25MAR06A	23MAY06	2	0	27	-81	-22								
T1690	UPS & UPS Battery Rms (112 & 115), Blockwork	10	20APR06	02MAY06	0	0	10	-68	-43								
T2010	Scrd, paint, glaze, ceiling hanger -1F GL9-13	36	20APR06	03JUN06	0	0	36	127	-37								
T3270	Complete Cable Riser at Grid 9B	6	20APR06	26APR06	0	0	6	-60	-44								
T3260	UPS & UPS Battery Rms (112 & 115), Scrd & Paint	10	03MAY06	15MAY06	0	0	10	-68	-43								
T3000	Scrd, paint, glaze, ceiling hanger - 1F GL13-18	18	08JUN06	28JUN06	0	0	18	106	-28								
T2180	Final paint, doors & ceilings 1F GL11-18	18	29JUN06	20JUL06	0	0	18	106	-28								
<b>Admin Bldg - Internal Works 2F</b>																	
T1960	Int. Blockwork 2F Grid 9-13	6	16MAR06A	21APR06	70	0	2	-68	-33								
T2970	Int. Blockwork 2F Grid 13-18	6	16MAR06A	22APR06	50	0	3	-69	-28								
T1940	Int. Blockwork 2F Grid 1-9	18	23MAR06A	26APR06	70	0	6	-72	-13								
T3010	Scrd, paint, glaze, ceiling hanger - 2F GL9-13	18	22APR06	15MAY06	0	0	18	16	-33								



Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
Admin Bldg - Roofing & External Facade																	
T2860	Installation of Louvres GL11-21	60	30JUN06	08SEP06	0	0	60	-28	-44								
<b>E&amp;M - GENERAL</b>																	
<b>ELECTRICAL WORKS</b>																	
EM3180	E&M access to G/F (rev C Access date 04Jul05)	0	27MAR06A		100	0	0		-14								
EM3200	E&M access to 1/F (rev C Access date 15Jul05)	0	27MAR06A		100	0	0		22								
EM3540	BS Works in G/F	90	27MAR06A	07AUG06	10	0	81	-54	-31								
EM3560	BS Works in 1/F	90	27MAR06A	28AUG06	10	0	81	-72	-13								
EM3220	BS Works for HV Sw + Tx	12	20APR06	04MAY06	0	0	12	-54	-31								
EM3340	BS Works for 110V Charger Rm	12	20APR06	04MAY06	0	0	12	-60	-31								
EM3660	PAU in G/F <Require Temp Opening>	30	20APR06	26MAY06	0	0	30	-12	-31								
EM3280	BS Works for LV Sw	12	06MAY06	19MAY06	0	0	12	-48	-31								
EM3160	E&M access to 2/F (rev C Access date 12Aug05)	0	13MAY06*		0	0	0	-72	-13								
EM3580	BS Works in 2/F	90	13MAY06	28AUG06	0	0	90	-72	-13								
EM3700	PAU in 2/F <Require Temp Opening>	30	13MAY06	17JUN06	0	0	30	-30	-13								
EM3420	BS Works for Genset	12	20MAY06	03JUN06	0	0	12	-48	-31								
EM3380	BS Works for UPS Rm (2x)	12	24MAY06	07JUN06	0	0	12	-75	-22								
EM3620	E&M Works in Risers	90	24MAY06	07SEP06	0	0	90	-81	-22								
EM3680	PAU in 1/F <Require Temp Opening>	30	24MAY06	28JUN06	0	0	30	-39	-22								
EM3140	E&M access to R/F (rev C Access date 29Nov05)	0	27MAY06*		0	0	0	-72	-44								
EM3480	BS Works for MCC	12	27MAY06	10JUN06	0	0	12	-66	-44								
EM3600	BS Works in R/F	78	27MAY06	28AUG06	0	0	78	-72	-44								
EM3440	Genset Installation	36	05JUN06	17JUL06	0	0	36	-48	-31								
T1830	Bldg available for BB deliveries excl cont room	0		21JUN06*	0	0	0	-90	-40								
EM3300	LV Sw Installation	30	22JUN06	27JUL06	0	0	30	-75	-40								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>ELECTRICAL WORKS</b>																	
EM3400	UPS (2x) Installation	30	22JUN06	27JUL06	0	0	30	-87	-34								
EM3500	MCC Installation <Require Temp Opening>	30	22JUN06	27JUL06	0	0	30	-75	-40								
EM3720	Chiller System in R/F (inc. All AC Units)	72	29JUN06	21SEP06	0	0	72	-39	-22								
EM3240	HV Sw + Tx Installation	29	07JUL06	09AUG06	0	0	29	-98	-37								
EM3190	Admin Bldg - Lift Installation	72	18JUL06	11OCT06	0	0	72	13	-44								
<b>SHATIN HEIGHTS SOUTH PORTAL BUILDING</b>																	
<b>CONTRACT DEFINED DATES &amp; SECTIONS</b>																	
<b>AREA ACCESS &amp; VACATION DATES</b>																	
ACS_J2	Access to - J2 (T.Plate & above) SH-S.Vent.Bldg.	0	10DEC05A		100	100	0		-61								
ACS_D8	Access to Portion - D8	0	03JAN06A		100	100	0		-61								
<b>SUBMITTALS &amp; APPROVALS</b>																	
<b>ABWF &amp; BW SUBMITTALS</b>																	
2000	SHT SPB - Approve door & window details	24	03JUN05A	04MAY06	50	50	12	461	-48								
2006	SHT SPB - Prep & sub balustrade & metal wks	24	13JUL05A	04MAY06	50	50	12	440	-48								
2007	SHT SPB - Approve balustrade & metal works	24	13DEC05A	04MAY06	50	50	12	440	-48								
<b>PROCUREMENT - MATERIAL</b>																	
<b>E &amp; M WORKS</b>																	
2024	SHT SPB - Procure balustrade & metal works	120	24MAR05A	30MAY06	80	50	33	440	-69								
7086	ShtSpBldg-Proc. & Manuf. of CMCS & ELV sys	180	29MAR05A	17JUN06	85	46	48	377	1								
7206	ShtSpBldg-Proc & Manuf. FS AFA & FM200 sys	120	29MAR05A	18MAY06	90	30	23	402	13								
7134	ShtSpBldg-Proc & Manuf. TVF,Ductwks & Cont'l sys	180	09JUN05A	24MAR06A	100	100	0		-41								
7210	ShtSpBldg-Proc & Manuf. Cleans & flush water sys	120	30SEP05A	13MAY06	85	62	19	406	-21								
7230	ShtSpBldg-Proc & Manuf. PD irrig. sys	120	17DEC05A	29APR06	85	62	9	416	-11								
<b>MAJOR EQUIPMENT DELIVERY</b>																	
<b>E&amp;M WORKS</b>																	
7042	ShtSpBldg-Del. HV power dist. equip't to 2/F	48	24DEC05A	10APR06A	100	81	0		-34								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>E&amp;M WORKS</b>																	
7103	ShtSpBldg-Del. Package AC Units	48	27JAN06A	30MAY06	60	27	33	440	-46								
7118	ShtSpBldg-Del. building vent. fans	48	27JAN06A	30MAY06	60	27	33	440	-46								
7149	ShtSpBldg-Del. MVAC MCC, & control sys to 3/F	48	27JAN06A	29APR06	80	27	9	464	-22								
8509	ShtSpBldg-Del. building related luminaires	48	27JAN06A	15JUN06	70	27	46	427	-59								
7157	ShtSpBldg-Del. FS pumps & tank to G/F	48	06MAR06A	15MAY06	50	0	20	453	-11								
7162	ShtSpBldg-Del. ENT Tunnel (Hyd/HR) pumps to G/F	48	06MAR06A	06JUN06	40	0	38	435	-29								
7135	ShtSpBldg-Del. TVS to Plenum & 3/F	48	24MAR06A	06MAY06	40	27	13	460	-26								
7142	ShtSpBldg-Del. MVAC /TVF pneumatic sys to 1/F	48	20APR06	17JUN06	0	27	48	425	-61								
7231	ShtSpBldg-Del. PD irrig. pump & tank to G/F	48	02MAY06	28JUN06	0	0	48	416	-11								
7211	ShtSpBldg-Del. PD pump & tank to G/F	48	15MAY06	11JUL06	0	0	48	406	-21								
7207	ShtSpBldg-Del. AFA & FM200 sys	48	19MAY06	15JUL06	0	0	48	402	13								
7087	ShtSpBldg-Del. CMCS & ELV equip't	48	19JUN06	14AUG06	0	0	48	377	1								
<b>CONSTRUCTION</b>																	
<b>TCSS Access to SHT Sout Portal Bldg</b>																	
AB6024	TCSS ACCESS 4F (Room 402,403)	0		02MAY06*	0	0	0	571	-41								
AB6044	TCSS ACCESS ROOF	0		11MAY06	0	0	0	-53	-33								
EM6050	TCSS ACCESS 2F(Room 201-203,205,207,209,212)	0		11MAY06	0	0	0	-97	-38								
EM6110	TCSS ACCESS 2F(Room 204)	0		11MAY06	0	0	0	-120	-27								
EM6704	TCSS Containment in Lower Plenum	18	12MAY06	02JUN06	0	0	18	438	-33								
EM6706	TCSS Containment in 2/F	18	12MAY06	02JUN06	0	0	18	-71	-27								
EM6712	TCSS ACCESS 1F(Room 101,103,104,108-109)	0		13MAY06	0	0	0	-78	-29								
EM6702	TCSS Containment in 1/F	12	15MAY06	27MAY06	0	0	12	-67	-29								
AB6021	TCSS ACCESS 3F(Room 307)	0		16MAY06	0	0	0	-124	-31								
EM6708	TCSS Containment in 3/F and above	18	17MAY06	07JUN06	0	0	18	-86	-31								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>TCSS Access to SHT Sout Portal Bldg</b>																	
AB6011	TCSS ACCESS 3F(Room 301-304,309-310,312-314)	0		23MAY06	0	0	0	-109	-42								
EM6722	TCSS ACCESS 1F(Room 107)	0		27MAY06	0	0	0	-67	-29								
EM6732	TCSS ACCESS 1F(Room 105)	0		27MAY06	0	0	0	-41	-29								
EM6090	TCSS ACCESS 2F(Room 206,210)	0		02JUN06	0	0	0	-71	-27								
EM6710	TCSS ACCESS GF (Room G01-G05, G08-G10)	0		03JUN06	0	0	0	-46	-36								
EM6700	TCSS Containment in G/F	12	05JUN06	17JUN06	0	0	12	-84	-36								
EM6720	TCSS ACCESS GF(Room G07,G11,G12)	0		17JUN06	0	0	0	-84	-36								
<b>CIVIL &amp; ABWF WORKS</b>																	
AB5983	U/G Drainages and Utilities under bldg	24	15MAR06A	04MAY06	75	0	12	-84	-36								
AB5986	Backfill, G/F Slabs and Walls	24	06MAY06	03JUN06	0	0	24	-84	-36								
<b>ABWF</b>																	
AB6022	Remedy SHT Contractor Defects	25	12DEC05A	25APR06	90	20	5	-124	-33								
<i>ABWF at GF</i>																	
AB5989	Initial Finishes to G/F	18	11FEB06A	03JUN06	5	0	16	-84	-36								
<i>ABWF at 1F &amp; LP</i>																	
AB5992	Initial Finishes to 1/F	18	08APR06A	13MAY06	15	0	14	-78	-29								
AB5995	Initial Finishes to Lower Plenum	12	26APR06	11MAY06	0	0	12	-39	-33								
<i>ABWF at 2F</i>																	
AB5998	Initial Finishes to 2/F	18	11FEB06A	11MAY06	15	0	14	-120	-27								
<i>ABWF at 3F</i>																	
AB6001	Initial Finishes to 3/F	18	10APR06A	16MAY06	10	0	16	-124	-31								
<i>ABWF at 4F and above</i>																	
AB6012	Installation of Crane Beam beneath 4th FL	12	03MAR06A	23MAR06A	100	0	0		21								
AB6005	Installaton of Crane Beam beneath 5th FL	12	13MAR06A	29MAR06A	100	0	0		22								
AB6004	Initial Finishes to 4/F and above	24	13APR06A	22MAY06	5	0	21	-36	-30								
<i>Roof &amp; External Facade</i>																	
AB6017	Waterproofing - External Walls	24	04MAR06A	29APR06	85	0	4	40	-13								



Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
Roof & External Facade																	
AB6027	Painting	42	26APR06	16JUN06	0	0	42	134	-33								
AB6037	Roofing Works	6	26APR06	03MAY06	0	0	6	-53	-33								
AB6067	Install Louvres	75	26APR06	26JUL06	0	0	75	101	-33								
AB6077	Install Composite Cladding Panels	60	02MAY06	13JUL06	0	0	60	40	-13								
AB6057	Waterproofing - Roof	6	04MAY06	11MAY06	0	0	6	-53	-33								
AB6007	Install Slate Cladding above Carriageway	36	14JUL06	24AUG06	0	0	36	40	-13								
<b>E&amp;M - GENERAL</b>																	
<b>ELECTRICAL WORKS</b>																	
EM6066	E&M Access to Lower Plenum	0	10APR06A		100	0	0		-10								
EM6380	BS Works for TVS Plenums	30	10APR06A	25MAY06	3	0	12	-39	-9								
EM6040	E&M access to 2/F	0	12MAY06		0	0	0	-88	-27								
EM6080	BS Works for HV Sw + Tx	12	12MAY06	25MAY06	0	0	12	-88	-27								
EM6240	BS Works for Genset	18	12MAY06	02JUN06	0	0	18	-41	-27								
EM6060	E&M Access to 1/F	0	15MAY06		0	0	0	-67	-29								
EM6020	E&M access to 3/F	0	17MAY06		0	0	0	-86	-31								
EM6140	BS Works for LV Sw, MCC, UPS, LCC	12	17MAY06	30MAY06	0	0	12	-57	-31								
EM6200	BS Works for 110V Charger Rm	12	17MAY06	30MAY06	0	0	12	-21	-31								
EM6100	HV Sw + Tx Installation	30	26MAY06	30JUN06	0	0	30	-88	-27								
EM6300	E&M Works in Corridors 2/F	24	26MAY06	23JUN06	0	0	24	-47	-27								
EM6400	TVS Installation	100	26MAY06	21SEP06	0	0	100	-39	-9								
EM6160	LV Sw, MCC, UPS, LCC Installation	30	01JUN06	06JUL06	0	0	30	-57	-31								
EM6320	E&M Works in Corridors 3/F	24	01JUN06	28JUN06	0	0	24	-51	-31								
EM6260	Genset Installation	36	03JUN06	15JUL06	0	0	36	-41	-27								
EM6063	E&M Access to G/F	0	05JUN06		0	0	0	-84	-36								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>ELECTRICAL WORKS</b>																	
EM6340	E&M Works in Risers	48	15JUN06	10AUG06	0	0	48	-51	-31								
Testing & Commissioning																	
EM6220	110V Charger Rm Installation + T&C	12	01JUN06	14JUN06	0	0	12	-21	-31								
EM6120	HV Sw + Tx Termination + T&C	30	03JUL06	05AUG06	0	0	30	-30	-27								
EM6180	LV Sw, MCC, UPS, LCC Termination + T&C	30	07JUL06	10AUG06	0	0	30	-39	-31								
EM6280	Genset Termination + T&C	12	17JUL06	29JUL06	0	0	12	-41	-27								
<b>SHT TUNNEL</b>																	
<b>PROCUREMENT - MATERIAL</b>																	
<b>SHT TUNNEL NORTHBOUND</b>																	
6992	ShtRtNb-Proc & Manuf. Tunnel Lgt sys	180	20JAN05A	06APR06A	100	98	0		-31								
7023	ShtRtNb-Proc & Manuf. FS AFA & Linear sys	180	29MAR05A	30MAY06	85	53	33	392	3								
7011	ShtRtNb-Proc & Manuf. TVS control sys	180	25MAY05A	24MAR06A	100	45	0		69								
<b>SHT TUNNEL SOUTHBOUND</b>																	
6939	ShtRtSb-Proc & Manuf. Tunnel Lgt sys	180	20JAN05A	06APR06A	100	98	0		-31								
6946	ShtRtSb-Proc & Manuf. CMCS & ELV sys	180	29MAR05A	10MAY06	90	58	16	385	11								
6970	ShtRtSb-Proc & Manuf. FS AFA & Linear sys	180	29MAR05A	30MAY06	85	53	33	392	3								
6958	ShtRtSb-Proc & Manuf. TVS control sys	180	25MAY05A	24MAR06A	100	45	0		69								
7625	ShtRtSb-Proc & Manuf. TVS in Tunnel	180	09JUN05A	27MAR06A	100	100	0		-138								
<b>MAJOR EQUIPMENT DELIVERY</b>																	
<b>SHT TUNNEL NORTHBOUND</b>																	
6987	ShtRtNb-Del. HV/LV main & submain dist. sys	48	30DEC05A	13APR06A	100	0	0		35								
7012	ShtRtNb-Del. TVS control sys	48	24MAR06A	29APR06	60	0	9	464	90								
6993	ShtRtNb-Del. Tunnel Lgt	48	06APR06A	29APR06	95	0	9	464	0								
7024	ShtRtNb-Del. AFA & Linear sys	48	01JUN06	27JUL06	0	0	48	392	3								
<b>SHT TUNNEL SOUTH BOUND</b>																	
7626	ShtRtSb-Del. TVS in Tunnel	72	05OCT05A	27MAR06A	100	100	0		-66								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB	MAR	APR	MAY	JUN	JUL	AUG	
										29	30	31	32	33	34	35	
<b>SHT TUNNEL SOUTH BOUND</b>																	
6934	ShtRtSb-Del. HV/LV main & submain dist. sys	72	20JAN06A	13APR06A	100	0	0		35								
6959	ShtRtSb-Del. TVS control sys	47	24MAR06A	06MAY06	40	0	13	460	85								
6940	ShtRtSb-Del. Tunnel Lgt	48	06APR06A	29APR06	95	0	9	464	0								
6947	ShtRtSb-Del. CMCS & ELV sys	72	11MAY06	04AUG06	0	0	72	385	11								
6971	ShtRtSb-Del. AFA & Linear sys	48	01JUN06	27JUL06	0	0	48	392	3								
<b>CONSTRUCTION</b>																	
<b>SHT NORTHBOUND TUNNEL</b>																	
<b>(E &amp; M) BUILDING SERVICES</b>																	
MVAC / Tunnel Ventillation System Above OHVD																	
207004	Sht NB - Install Motorized Smoke & Fire Damper	48	22FEB06A	02MAY06	80	0	10	-52	11								
207006	Sht NB - Comp Air Pipes/Condts to E/P1 to E/P5	36	12APR06A	01JUN06	5	0	34	-52	35								
207005	Sht NB - Comp Air Pipes/Condts to E/P10 to E/P6	36	02JUN06	14JUL06	0	0	36	-52	-37								
207007	Sht NB - Cabling, wiring and termination	24	15JUL06	11AUG06	0	0	24	-52	-1								
Plumbing and Drainage																	
214026	Sht NB - Watermain & Cable brackets @ G/L	18	23MAR06A	24APR06	90	0	4	-38	-17								
214027	Sht NB - (150d) Water Supply Pipeworks @ G/L	30	27MAR06A	02MAY06	90	0	8	-22	7								
214028	Sht NB - Pipe Connectn, pumps, tanks to SP / NP	18	03MAY06	24MAY06	0	0	18	50	7								
214030	Sht NB - Pipe Testing & T&C	12	25MAY06	08JUN06	0	0	12	50	7								
Fire Protection System																	
221054	Sht NB - Install FS Conduits to AFA Panels	30	22MAR06A	24MAY06	20	0	28	-16	8								
221055	Sht NB - (150d) FS Main pipeworks @ G/L	34	05APR06A	01JUN06	3	0	34	-22	-1								
221052	Sht NB - Install brckt / supt for FS dectn @ C/L	30	20APR06	26MAY06	0	0	30	0	-48								
221053	Sht NB - Install fire alarm detection @ C/L	24	27MAY06	24JUN06	0	0	24	0	-48								
221057	Sht NB - Hose Reel Cabinets & Equipts	40	02JUN06	19JUL06	0	0	40	-22	2								
221058	Sht NB - (100d) FH / HR Pipeworks & Fittings	30	16JUN06	21JUL06	0	0	30	-22	2								
221059	Sht NB - FS wiring & termination	24	22JUL06	18AUG06	0	0	24	-22	2								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 31	MAY 32	JUN 33	JUL 34	AUG 35	
<b>Electrical Works Above OHVD</b>																	
228103	Sht NB - E&M Access to 3/F LV Switch Rm (SPB)	0	20APR06*		0	0	0	-54	-13	[Gantt bar: 20APR06* to 03JUL06]							
228104	Sht NB - E&M Access to 3/F LV Switch Rm (NPB)	0	20APR06*		0	0	0	-54	-6	[Gantt bar: 20APR06* to 03JUL06]							
228105	Sht NB - HV & LV Mn/Sub-main Cables to CP1-CP05	60	20APR06	03JUL06	0	0	60	-54	-13	[Gantt bar: 20APR06 to 03JUL06]							
228108	Sht NB - HV & LV Mn/Sub-main Cables to CP6-CP10	60	20APR06	03JUL06	0	0	60	-54	-6	[Gantt bar: 20APR06 to 03JUL06]							
228109	E&M Inspection & Access to Civil Contractor	0		10JUL06	0	0	0	-24	-6	[Gantt bar: 10JUL06 to 10JUL06]							
<b>Electrical Works Below OHVD</b>																	
235161	Sht NB - Conduits Works (Above & below OHVD)	48	01MAR06A	12JUN06	30	0	43	-73	-8	[Gantt bar: 01MAR06A to 12JUN06]							
235160	Sht NB - Brackets for Lights, CCTV & Eqpt @ C/L	48	14MAR06A	12MAY06	80	0	18	-84	-18	[Gantt bar: 14MAR06A to 12MAY06]							
235162	Sht NB - Tunnel Earthing & Bonding to CP1-CP10	36	13MAY06	24JUN06	0	0	36	-84	-18	[Gantt bar: 13MAY06 to 24JUN06]							
235163	Stn NB Access to Civil Contractr for Rd Pavement	0	26JUN06		0	0	0	-84	-18	[Gantt bar: 26JUN06 to 26JUN06]							
235164	Sht NB - Tunnel Lightings & Signage Fixtures	60	18JUL06	25SEP06	0	0	60	-84	-18	[Gantt bar: 18JUL06 to 25SEP06]							
<b>SHT SOUTHBOUND TUNNEL</b>																	
<b>(E &amp; M) BUILDING SERVICES</b>																	
<b>MVAC / Tunnel Ventilation System Above OHVD</b>																	
242270	Sht SB - Install Motorized Smoke & Fire Damper	48	02MAR06A	04MAY06	76	0	12	-42	9	[Gantt bar: 02MAR06A to 04MAY06]							
242271	Sht SB - Comp Air Pipes/Condts to E/P10 to E/P6	36	20APR06	03JUN06	0	0	36	-42	-3	[Gantt bar: 20APR06 to 03JUN06]							
242272	Sht SB - Comp Air Pipes/Condts to E/P1 to E/P5	36	05JUN06	17JUL06	0	0	36	-42	-3	[Gantt bar: 05JUN06 to 17JUL06]							
242273	Sht SB - Cabling, wiring and termination	24	18JUL06	14AUG06	0	0	24	-42	-3	[Gantt bar: 18JUL06 to 14AUG06]							
<b>Plumbing and Drainage</b>																	
249390	Sht SB - Watermain & Cable brackets @ G/L	18	20APR06*	12MAY06	0	0	18	-40	-31	[Gantt bar: 20APR06* to 12MAY06]							
249391	Sht SB - (50d) Water Supply Pipeworks @ G/L	30	25APR06	01JUN06	0	0	30	-38	-17	[Gantt bar: 25APR06 to 01JUN06]							
249392	Sht SB - Pipe Connectn, pumps, tanks to SP / NP	18	02JUN06	22JUN06	0	0	18	26	-17	[Gantt bar: 02JUN06 to 22JUN06]							
249393	Sht SB - Pipe Testing and T&C	12	23JUN06	07JUL06	0	0	12	26	-17	[Gantt bar: 23JUN06 to 07JUL06]							
<b>Fire Protection System</b>																	
256514	Sht SB - Install brckt / Supt for FS dectn @ C/L	30	20APR06	26MAY06	0	0	30	-72	-48	[Gantt bar: 20APR06 to 26MAY06]							
256517	Sht SB - (150d) FS Main pipeworks @ G/L	34	13MAY06	22JUN06	0	0	34	-40	-19	[Gantt bar: 13MAY06 to 22JUN06]							

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 31	MAY 32	JUN 33	JUL 34	AUG 35	
<b>Fire Protection System</b>																	
256515	Sht SB - Install fire alarm detection @ C/L	24	27MAY06	24JUN06	0	0	24	-72	-48								
256516	Sht SB - Install FS Conduits to AFA Panels	30	26JUN06	31JUL06	0	0	30	-72	-48								
<b>Electrical Works Above OHVD</b>																	
263653	Sht SB - E&M Access to 3/F UPS Room (SPB)	0	20APR06*		0	0	0	-54	-13								
263654	Sht SB - E&M Access to 3/F UPS Room (NPB)	0	20APR06*		0	0	0	-54	-6								
263655	Sht SB - HV & LV Mn/Sub-main Cables to CP1 - CP5	60	20APR06	03JUL06	0	0	60	-54	-13								
263658	Sht SB - HV & LV Mn/Sub-main Cables to CP6-CP10	60	20APR06	03JUL06	0	0	60	-54	-6								
263659	E&M Inspection & Access to Civil Contractor	0		10JUL06	0	0	0	-24	-6								
<b>Electrical Works Below OHVD</b>																	
270799	Sht SB - Conduits Works (Above & below OHVD)	48	01MAR06A	12JUN06	30	0	43	-73	-3								
270798	Sht SB - Brackets for Lights, CCTV & Eqpt @ C/L	48	20APR06	20MAY06	0	0	25	-91	-25								
270800	Sht SB - Tunnel Earthing & Bonding to CP1-CP10	36	22MAY06	04JUL06	0	0	36	-91	-25								
270801	Stn SB Access to Civil Contractr for Rd Pavement	0	05JUL06		0	0	0	-91	-21								
270802	Sht SB - Tunnel Lightings & Signage Fixtures	60	26JUL06	04OCT06	0	0	60	-91	-21								
<b>SHT CROSS PASSAGES (CP1 to CP10)</b>																	
<b>(E &amp; M) BUILDING SERVICES</b>																	
<b>Electrical Works</b>																	
277956	E&M Access to Cross Passage Area (CP1-CP10)	0	20APR06*		0	0	0	-80	-12								
277957	(CP1-CP10) - Cable Containment & Equipt Support	60	20APR06	03JUL06	0	0	60	-80	-12								
277958	MS Doors Installed and Secured	0	14JUN06*		0	0	0	-80	-11								
277959	(CP1-CP10) - MCCB / MCB Bd,CMCS,Busbar,Switches	72	14JUN06	06SEP06	0	0	72	-80	-11								
277960	(CP1-CP10) - Conduit, light Fixture, Swt & Test	36	14JUN06	26JUL06	0	0	36	-74	-11								
277961	(CP1-CP10) - LV Cables Termination & Test	48	27JUL06	27SEP06	0	0	48	-80	-11								
<b>SHT NORTH PORTAL BUILDING</b>																	
<b>SUBMITTALS &amp; APPROVALS</b>																	
<b>ABWF &amp; BUILDERS WORKS</b>																	
2001	SHT NPB - Approve door & window details	24	03JUN05A	04MAY06	70	50	12	461	-48								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 31	MAY 32	JUN 33	JUL 34	AUG 35	
<b>E&amp;M EQPT. / MTRL. SUBMITTALS</b>																	
8298	ShtNpBldg-Sub.FS wet sys	54	05AUG04A	03APR06A	100	83	0		-29								
<b>E&amp;M EQPT. / MTRL. APPROVALS</b>																	
7377	ShtNpBldg-App. FS wet sys	18	02SEP04A	03APR06A	100	50	0		-29								
<b>PROCUREMENT - MATERIAL</b>																	
<b>ABWF WORKS</b>																	
2016	SHT NPB - Procure doors & windows	120	12JAN05A	04MAY06	80	50	12	461	-48								
7308	ShtNpBldg-Proc. & Manuf. of CMCS & ELV sys	180	29MAR05A	20JUN06	85	46	50	375	0								
7428	ShtNpBldg-Proc & Manuf. FS AFA & FM200 sys	120	29MAR05A	18MAY06	90	30	23	402	13								
7378	ShtNpBldg-Proc & Manuf. FS wet sys	120	06JUN05A	29APR06	95	93	9	416	-48								
7356	ShtNpBldg-Proc & Manuf. TVF,Ductwks&Cont'l sys	180	09JUN05A	24MAR06A	100	100	0		-41								
7432	ShtNpBldg-Proc & Manuf. Cleans & flush water sys	120	30SEP05A	29APR06	90	61	9	416	-10								
8512	ShtSpBldg-Proc & Manf bldg related luminaires	180	23NOV05A	30MAR06A	100	100	0		-46								
7363	ShtNpBldg-Proc & Manuf. MVAC / TVF pneumatic sys	120	16DEC05A	30MAR06A	100	100	0		-46								
7324	ShtNpBldg-Proc & Manuf. MVAC Package AC Units	120	11JAN06A	29APR06	93	93	9	416	-48								
<b>MAJOR EQUIPMENT DELIVERY</b>																	
<b>SHT NORTH PORTAL BUILDING</b>																	
7371	ShtNpBldg-Del. MVAC MCC, & control sys to 3/F	72	30DEC05A	13APR06A	100	51	0		-11								
7264	ShtNpBldg-Del. HV power dist. equip't to 2/F	48	27JAN06A	10APR06A	100	27	0		-8								
7340	ShtNpBldg-Del. building vent. fans	48	27JAN06A	30MAY06	60	27	33	440	-46								
7357	ShtNpBldg-Del. TVS to Plenum & 3/F	72	24MAR06A	06MAY06	40	51	13	460	-26								
8513	ShtSpBldg-Del. building related luminaires	48	30MAR06A	15JUN06	70	27	46	427	-59								
7364	ShtNpBldg-Del. MVAC /TVF pneumatic sys to 1/F	48	20APR06	30MAY06	0	27	33	440	-46								
7325	ShtNpBldg-Del. Package AC Units	48	02MAY06	28JUN06	0	0	48	416	-48								
7379	ShtNpBldg-Del. FS pumps & tank to G/F	48	02MAY06	28JUN06	0	0	48	416	-48								
7384	ShtNpBldg-Del. ENT Tunnel (Hyd/HR) pumps to G/F	48	02MAY06	28JUN06	0	0	48	416	-48								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>SHT NORTH PORTAL BUILDING</b>																	
7433	ShtNpBldg-Del. PD pump & tank to G/F	48	02MAY06	28JUN06	0	0	48	416	-10								
7429	ShtNpBldg-Del. AFA & FM200 sys	48	19MAY06	15JUL06	0	0	48	402	13								
7309	ShtNpBldg-Del. CMCS & ELV equip't	48	21JUN06	16AUG06	0	0	48	375	0								
<b>CONSTRUCTION</b>																	
<b>TCSS Access to SHT North Portal Bldg</b>																	
AB7210	TCSS ACCESS Roof	0		12MAY06	0	0	0	-29	-34								
EM7299	TCSS ACCESS LPL (Room L03)	0		12MAY06	0	0	0	-72	-34								
EM7289	TCSS Containment in Lower Plenum	18	13MAY06	03JUN06	0	0	18	-81	-34								
AB7110	TCSS ACCESS 1F (Room 101,103-105-111)	0		17MAY06	0	0	0	-76	-32								
EM7292	TCSS Containment in 2/F	18	17MAY06	07JUN06	0	0	18	-66	-31								
EM7286	TCSS Containment in 1/F	12	18MAY06	01JUN06	0	0	12	-64	-32								
AB7190	TCSS ACCESS 4F (Room 401,402,403,404)	0		19MAY06	0	0	0	-51	-34								
EM7295	TCSS Containment in 3/F and above	18	20MAY06	10JUN06	0	0	18	-69	-34								
EM7296	TCSS ACCESS - 1F (Room 107,109,104)	0		01JUN06	0	0	0	-64	-32								
EM7306	TCSS ACCESS - 1F (Room 108)	0		01JUN06	0	0	0	-39	-32								
EM7309	TCSS ACCESS LPL (Room L04,L05)	0		03JUN06	0	0	0	-81	-34								
AB7150	TCSS ACC 2F(201,204,205,207-212,214,215,ST1,ST2)	0		07JUN06	0	0	0	-66	-31								
AB7170	TCSS ACC 3F(301,303-305,307-309,311,313-315,317)	0		10JUN06	0	0	0	-69	-34								
EM7290	TCSS ACCESS - GF (Room G02-G03, G04-G08)	0		03JUL06	0	0	0	-65	-48								
EM7283	TCSS Containment in G/F	12	04JUL06	17JUL06	0	0	12	-69	-48								
EM7293	TCSS ACCESS - GF (Room G09,G15)	0		17JUL06	0	0	0	-69	-48								
<b>CIVIL &amp; ABWF WORKS</b>																	
AB7040	U/G Drainages and Utilities under bldg	24	20APR06	19MAY06	0	0	24	-69	-48								
AB7060	Backfill, G/F Slabs and Walls	24	20MAY06	17JUN06	0	0	24	-69	-48								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>ABWF Works</b>																	
AB7130	Remedy defects to SHT Buildings	24	17DEC05A	26APR06	70	17	6	-98	-34								
<b>ABWF at GF</b>																	
AB7080	Initial Finishes to G/F	18	05JUN06	03JUL06	0	0	18	-69	-48								
<b>ABWF at 1F &amp; LP</b>																	
AB7100	Initial Finishes to 1/F	18	18APR06A	17MAY06	10	0	16	-76	-32								
AB7120	Initial Finishes to Lower Plenum	12	27APR06	12MAY06	0	0	12	-81	-34								
<b>ABWF at 2F</b>																	
AB7140	Initial Finsihes to 2/F	18	30MAR06A	16MAY06	5	0	15	-98	-31								
<b>ABWF at 3F</b>																	
AB7230	Installation of Crane Beam beneath 3rd FL Slab	12	30MAR06A	04APR06A	100	0	0		11								
AB7160	Initial Finishes to 3/F	18	27APR06	19MAY06	0	0	18	-71	-34								
<b>ABWF at 4F</b>																	
AB7240	Installation of Crane Beam beneath 4th FL Slab	12	06APR06A	14APR06A	100	0	0		10								
AB7180	Initial Finishes to 4/F and above	24	27APR06	26MAY06	0	0	24	-51	-34								
<b>Roofing &amp; External Facade</b>																	
AB7200	Waterproof External Walls	24	01APR06A	03MAY06	80	0	5	38	-15								
AB7260	Painting	42	27APR06	17JUN06	0	0	42	133	-34								
AB7270	Roofing Works	6	27APR06	04MAY06	0	0	6	-29	-34								
AB7290	Install Louvres	75	27APR06	27JUL06	0	0	75	9	-34								
AB7280	Install Composite Panels	60	04MAY06	15JUL06	0	0	60	38	-15								
AB7300	Waterproofing roof	6	06MAY06	12MAY06	0	0	6	-29	-34								
AB7310	Install Slate Cladding above Carriageway	36	17JUL06	26AUG06	0	0	36	38	-15								
<b>E&amp;M - GENERAL</b>																	
<b>ELECTRICAL WORKS</b>																	
EM7298	E&M Access to Lower Plenum	0	13MAY06		0	0	0	-81	-34								
EM7240	E&M access to 2/F	0	17MAY06		0	0	0	-98	-31								
EM7300	BS Works for HV Sw + Tx	12	17MAY06	30MAY06	0	0	12	-98	-31								



Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
<b>ELECTRICAL WORKS</b>																	
EM7460	BS Works for Genset	18	17MAY06	07JUN06	0	0	18	-62	-31								
EM7260	E&M Access to 1/F	0	18MAY06		0	0	0	-64	-32								
EM7220	E&M access to 3/F	0	20MAY06		0	0	0	-71	-34								
EM7360	BS Works for LV Sw, MCC, UPS, LCC	12	20MAY06	03JUN06	0	0	12	-71	-34								
EM7420	BS Works for 110V Charger Rm	12	20MAY06	03JUN06	0	0	12	-53	-34								
EM7600	BS Works for TVS Plenums	30	20MAY06	24JUN06	0	0	30	-64	-34								
EM7320	HV Sw + Tx Installation	30	01JUN06	06JUL06	0	0	30	-98	-31								
EM7520	E&M Works in Corridors 2/F	24	01JUN06	28JUN06	0	0	24	-57	-31								
EM7380	LV Sw, MCC, UPS, LCC Installation	30	05JUN06	10JUL06	0	0	30	-71	-34								
EM7540	E&M Works in Corridors 3/F	24	05JUN06	03JUL06	0	0	24	-60	-34								
EM7480	Genset Installation	36	08JUN06	20JUL06	0	0	36	-62	-31								
EM7560	E&M Works in Risers	48	19JUN06	14AUG06	0	0	48	-60	-34								
EM7620	TVS Installation	100	26JUN06	23OCT06	0	0	100	-64	-34								
EM7280	E&M Access to G/F	0	04JUL06		0	0	0	-69	-48								
<b>Testing &amp; Commissioning</b>																	
EM7440	110V Charger Rm Installation + T&C	12	05JUN06	17JUN06	0	0	12	-53	-34								
EM7340	HV Sw + Tx Termination + T&C	30	07JUL06	10AUG06	0	0	30	-68	-31								
EM7400	LV Sw, MCC, UPS, LCC Termination + T&C	30	11JUL06	14AUG06	0	0	30	-71	-34								
EM7500	Genset Termination + T&C	12	21JUL06	03AUG06	0	0	12	-62	-31								
<b>SHT RC ENCLOSURE &amp; T3 UNDERPASS</b>																	
<b>CONTRACT DEFINED DATES &amp; SECTIONS</b>																	
ACS_J6	Access to Portion - J6 (SH-R9 Slip Rd.Over KCRC)	0		10MAY06*	0	0	0	563	0								
ACS_L	Access to Portions - L	0		28MAY06*	0	0	0	545	0								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB		MAR			APR			MAY			JUN			JUL			AUG							
										29	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24
<b>PROCUREMENT - MATERIAL</b>																																		
<b>SHT RC FULL ENCLOSURE / T3 UNDERPASS</b>																																		
7495	Sht-N.R9-Proc & Manuf. CMCS & ELV sys	180	29MAR05A	20JUN06	85	46	50	375	-1																									
7518	Sht-N.R9-Proc & Manuf. FS AFA & Linear sys	120	29MAR05A	29APR06	90	30	9	416	27																									
7605	Sht-N.R9-Proc & Manuf. LCC, power & control sys	180	29MAR05A	03JUN06	85	100	36	402	-97																									
7613	Sht-N.R9-Proc & Manuf. MCC, power & control sys	180	29MAR05A	10MAY06	90	95	16	409	-55																									
7506	Sht-N.R9-Proc & Manuf. TVS control sys	180	25MAY05A	20JUN06	80	46	50	375	-1																									
<b>MAJOR EQUIPMENT DELIVERY</b>																																		
<b>SHT RC FULL ENCLOSURE / T3 UNDERPASS</b>																																		
7483	Sht-N.R9-Del. HV/LV main & submain dist. sys	72	01FEB06A	30MAY06	60	0	33	440	0																									
7489	Sht-N.R9-Del. Tunnel Lgt	72	06FEB06A	13MAY06	50	21	19	454	-10																									
7531	Sht-N.R9-Del. TVF, Duct & Control to Encl.	72	23FEB06A	06MAY06	40	63	5	460	-26																									
7519	Sht-N.R9-Del. AFA & Linear sys	48	02MAY06	28JUN06	0	0	48	416	27																									
7614	Sht-N.R9-Del. MCC, & control sys to S LV S/R	48	11MAY06	07JUL06	0	0	48	409	-55																									
7606	Sht-N.R9-Del. LCC to S & N Sw/R	48	05JUN06	15JUL06	0	27	35	402	-84																									
7496	Sht-N.R9-Del. CMCS & ELV sys	48	21JUN06	16AUG06	0	0	48	375	-1																									
7507	Sht-N.R9-Del. TVS control sys	48	21JUN06	16AUG06	0	0	48	375	-1																									
<b>INTERFACE DATES</b>																																		
<b>SHT RC FULL ENCLOSURE / T3 UNDERPASS</b>																																		
EM4020	LKJV - Possession of T3 Underpass	0	20APR06*		0	0	0	-23	-17																									
<b>CONSTRUCTION WORKS</b>																																		
<b>SHT RC FULL ENCLOSURE / T3 UNDERPASS</b>																																		
Koisk S1 at Shatin North Control Point																																		
EM3950	Kiosk S1 - Structure & Fittings	24	20APR06	19MAY06	0	0	24	-23	-48																									
EM3960	Wighbridge S1 - Install	12	20APR06	04MAY06	0	0	12	-17	-48																									
EM3970	Weighbridge S1 - Test and T&C	30	06MAY06	10JUN06	0	0	30	-17	-48																									
EM3952	Kiosk S1 - Install E&M Works	18	20MAY06	10JUN06	0	0	18	-23	-48																									

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	FEB							MAR			APR			MAY			JUN			JUL			AUG						
										29	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	
<b>Koisk S1 at Shatin North Control Point</b>																																						
EM3954	Kiosk S1 - E&M Testing and T&C	6	12JUN06	17JUN06	0	0	6	-23	-48																													
<b>RC Full Enclosure - LV Switch Room</b>																																						
280070	E&M Access to Southern LV Switch Room	0	20APR06		0	0	0	-70	-48																													
280072	LV SW Rm - Cable Containment & Eqpt Supports	24	20APR06	19MAY06	0	0	24	-70	-48																													
280074	LV SW Rm - SWGR, MCCB/ MCB Board, FS Panels	36	20MAY06	03JUL06	0	0	36	-70	-48																													
280076	LV SW Rm - Elect Lightings & Conduits	18	20MAY06	10JUN06	0	0	18	-23	-48																													
280078	LV SW Rm - Lightings wiring, term & test	6	12JUN06	17JUN06	0	0	6	-23	-48																													
280079	LV SW Rm - MCCB,MCB,LV Sw,FS panels Term & Test	18	04JUL06	24JUL06	0	0	18	-70	-48																													
280080	LV SW Rm - Connect HV / LV Cables from STN NPB	24	11JUL06	07AUG06	0	0	24	-70	-34																													
<b>STN RC FULL ENCLOSURE (North Bound) - E&amp;M WORKS</b>																																						
<i>MVAC / Tunnel Ventillation System</i>																																						
280000	RCFE NB - Ductworks Supports / Containment @ C/L	36	18FEB06A	24MAY06	20	0	28	-58	-40																													
280002	RCFE NB - MVAC Ducts, TVF & MSFD Units @ C/L	48	02MAR06A	15JUN06	10	0	43	-58	-28																													
280004	RCFE NB - MVAC Pipeworks & Conduits @ C/L	30	16JUN06	21JUL06	0	0	30	-58	-25																													
280006	RCFE NB - Cabling, wiring and termination	24	22JUL06	18AUG06	0	0	24	-58	-25																													
<i>Fire Protection System</i>																																						
280018	RCFE NB - Brackets/ Supt for TCSS @ Cable Trough	36	20APR06	03JUN06	0	0	36	-82	-48																													
280024	RCFE NB - (150d) FS Main pipeworks @ G/L	24	05JUN06	03JUL06	0	0	24	-62	-48																													
280026	RCFE NB - FS Conduit, Hose Reel Cabinets & Eqpt.	16	04JUL06	21JUL06	0	0	16	-62	-48																													
280028	RCFE NB - (100d) FH / HR Pipeworks & Fittings	18	04JUL06	26JUL06	0	0	18	-62	-48																													
280029	RCFE NB - Install Smoke detector @ N1-N3	10	22JUL06	02AUG06	0	0	10	-50	-48																													
280030	RCFE NB - FS Wiring & Termination	24	27JUL06	23AUG06	0	0	24	-62	-48																													
<i>Electrical Works</i>																																						
280044	RCFE NB - Brackets for Lights, CCTV & Eqpt @ C/L	60	20APR06	03JUL06	0	0	60	-88	-48																													
280034	RCFE NB - E&M Access to Southern LV Sw Room	0	05JUN06*		0	0	0	-82	-48																													
280038	RCFE NB - HV & LV Cabling Works @ C Trough	36	05JUN06	17JUL06	0	0	36	-82	-48																													

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 30	MAY 31	JUN 30	JUL 31	AUG 31	
Electrical Works																	
280046	RCFE NB - Conduits Works @ Ceiling Level	36	04JUL06	14AUG06	0	0	36	-76	-48								
280048	RCFE NB - Earthing, Lighting, Eqpt. @ C/L	48	04JUL06	28AUG06	0	0	48	-88	-48								
280040	RCFE NB - Install Power Distn Panels & Test	30	18JUL06	21AUG06	0	0	30	-82	-48								
STN RC FULL ENCLOSURE (South Bound) - E&M WORKS																	
MVAC / Tunnel Ventillation System																	
280082	RCFE SB - Ductworks Supports / Containment @ C/L	36	02MAR06A	24MAY06	30	0	28	-58	-40								
280084	RCFE SB - MVAC Ducts, TVF & MSFD Units @ C/L	48	02MAR06A	15JUN06	25	0	43	-58	-28								
280086	RCFE SB - MVAC Pipeworks & Conduits @ C/L	30	16JUN06	21JUL06	0	0	30	-58	-25								
280088	RCFE SB - Cabling, wiring and termination	24	22JUL06	18AUG06	0	0	24	-58	-25								
Fire Protection System																	
280092	RCFE SB - Brackets/ Supt for TCSS @ Cable Trough	36	20MAR06A	24MAY06	30	0	28	-74	-40								
280094	RCFE SB - (150d) FS Main pipeworks @ G/L	24	20MAR06A	01JUN06	30	0	24	-36	-22								
280096	RCFE SB - FS Conduit, Hose Reel Cabinets & Eqpt.	16	02JUN06	20JUN06	0	0	16	-36	-22								
280098	RCFE SB - (100d) FH / HR Pipeworks & Fittings	18	02JUN06	24JUN06	0	0	18	-36	-22								
280100	RCFE SB - Install Smoke detector @ S1-S4	10	21JUN06	03JUL06	0	0	10	-24	-22								
280102	RCFE SB - FS Wiring & Termination	24	26JUN06	24JUL06	0	0	24	-36	-22								
280104	RCFE SB - FS Testing and T&C	12	25JUL06	07AUG06	0	0	12	-36	-22								
Electrical Works																	
280116	RCFE SB - Brackets for Lights, CCTV & Eqpt @ C/L	60	20APR06	03JUL06	0	0	60	-88	-48								
280110	RCFE SB - E&M Access to Southern LV Sw Room	0	05JUN06*		0	0	0	-82	-48								
280112	RCFE SB - HV & LV Cabling Works @ C Trough	36	05JUN06	17JUL06	0	0	36	-82	-48								
280118	RCFE SB - Conduits Works @ Ceiling Level	36	04JUL06	14AUG06	0	0	36	-76	-48								
280120	RCFE SB - Earthing, Lighting, Eqpt. @ C/L	48	04JUL06	28AUG06	0	0	48	-88	-48								
280114	RCFE SB - Install Power Distn Panels & Test	30	18JUL06	21AUG06	0	0	30	-82	-48								

Act. ID	Activity Description	Orig Dur	Early Start	Early Finish	% Compl.	Target 1 % Comp	Rem Dur	Total Float	Variance Early Finish	Gantt Chart							
										FEB 29	MAR 30	APR 31	MAY 32	JUN 33	JUL 34	AUG 35	
<b>T3 UNDERPASS</b>																	
Kiosks S2 at T3 Underpass Portal																	
EM3980	Kiosk S2 - Structure & Fittings	24	20APR06	19MAY06	0	0	24	-23	-17								
EM4000	Kiosk S2 - Install E&M Works	18	20MAY06	10JUN06	0	0	18	-23	-17								
EM4002	Kiosk S2 - E&M Testing and T&C	6	12JUN06	17JUN06	0	0	6	-23	-17								

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**APPENDIX M  
COMPLAINT LOG**

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## Appendix M - Complaint Log

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
40426	Butterfly Valley	26 April 2004	<p>A public noise complaint was recently received by EPD. The complaint was related to the noise generated from the Route 8 – ENT site near Butterfly Valley at the night time on 21 April 2004. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 23 April 2004.</p>	<p><u>Noise at night time</u> The information provided by the RSS indicated that no works were undertaken by the Contractor during the concerned period. The concerned noise might probably be due to a burglary case occurred at same night.</p> <p><u>Noise during day-time</u> It is believed that the day-time noise complaint was due to the site formation works of the Project. Considering the powered mechanical equipment used at the Butterfly Valley and the echo effect of the valley, ET believe that the day-time construction noise from the site at Butterfly Valley might cause nuisance to the nearby resident to some extent, though there was no noise level exceedance at the Government Quarters during our routine monitoring in last three months.</p> <p>The Contractor agreed to implement mitigation measures, including good site practices, selecting quieter plant and working methods and reduction in numbers of noisy plant operating currently, in order to mitigate noise impacts at the NSRs.</p>	Closed
40914	Garden Villa	<p>13-Sep-04 (by EPD)</p> <p>14-Sep-04 (by ET Leader)</p>	<p>Environmental Protection Department (EPD) received a public noise complaint on 13 September 2004 about construction noise generated from the Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project, nearby by Garden Villa at Tai Po Road, Sha Tin. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 14 September 2004.</p> <p>The complaint was about general construction noise generated from a construction site nearby Garden Villa at Tai Po Road, Sha Tin. As informed by EPD,</p>	<p><u>Environmental Permits</u> A Construction Noise Permit (No. GW-RN0405-04) was obtained by the Contractor for the use of powered mechanical equipment (PME) in the concerned works area and use of TAR no.1 during restricted hours.</p> <p><u>Blasting Works</u> According to the information provided by the Resident Site Staff (RSS), for carrying out blasting works, a blasting permit should be issued by the Mines Division of Civil Engineering and Development Department (CEDD), but not under the jurisdiction of EPD. The CNP issued by EPD only specified the use of PME but not the blasting works during restricted hours.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			<p>the complainant was particularly concerned of two issues:</p> <ol style="list-style-type: none"> <li>1. The complainant was informed by the Contractor (Leighton – Kumagai Joint Venture) that blasting works would be conducted during restricted hours. He worried about the noise nuisance would be induced by the blasting works.</li> <li>2. Noise nuisance from some site vehicles traveling on the Temporary Access Road (TAR no.1) near Garden Villa was noted by the complainant during restricted hours.</li> </ol>	<p>As advised by the RSS, the Contractor did intend to apply for a permit to the Mines Division of CEDD for blasting works during restricted hours. However, up to the time of preparation of this report, the Contractor still had not obtained the approval from the Mines Division and therefore, no blasting works were performed by the Contractor during restricted hours.</p> <p><u>Use of TAR no.1</u> According to Condition 3d of the above-mentioned CNP, there was restriction on the use of site vehicles traveling on TAR no.1.</p> <p>The usage of site vehicles on TAR no.1 in a 2-week period before the date of complaint, i.e. 30<sup>th</sup> August to 12<sup>th</sup> September 2004 showed that the only vehicle type using TAR no.1 for the concerned period was concrete truck and the number of vehicle pass was limited to 4 times per hour, which was in compliance with the above CNP's conditions.</p> <p>Regular noise monitoring was undertaken by ET at Garden Villa on 30<sup>th</sup> August and 6<sup>th</sup> September 2004 during restricted hours (1900 – 2300 hours). The monitoring results were 58.7 dB(A) and 58.6 dB(A), respectively, which were below the noise limit level of 60 dB(A). However, it should be noted that site vehicles were not used by the Contractor on TAR no.1 during restricted hours on these two monitoring day.</p> <p>Based on the information obtained, the validity for the noise complaint in associated with night-time blasting works could not be concluded under ET's investigation, since no blasting works had been performed by the Contractor during restricted hours at the time of the report preparation. Also, it should be highlighted that for carrying out blasting works, permission should be obtained by Mines Division of CEDD, but not under the control of EPD.</p> <p>For the use of TAR no.1, the RSS's records showed that the number of vehicle pass in the period between 30<sup>th</sup> August and 12<sup>th</sup> September 2004 was complied with the CNP's conditions. It should be noted that only a maximum of 3 concrete trucks</p>	



Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>passing the site entrance was recorded. Therefore, it was considered that the nuisance noted by the complainant was not due to the site vehicles adopted by the Contractor (LKJV).</p> <p>Nevertheless, the Contractor was reminded to ensure the compliance of the CNP conditions and adopt good site practice to minimize the construction noise.</p>	
41021	Garden Villa	<p>09-Oct-04 (by EPD)</p> <p>21-Oct-04 (by ET Leader)</p>	<p>Environmental Protection Department (EPD) received a public noise complaint on 9 October 2004 about construction noise generated from the Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project, nearby by Garden Villa at Tai Po Road, Sha Tin. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 21 October 2004.</p> <p>The complaint was about nighttime construction noise generated from a construction site nearby Garden Villa at Tai Po Road, Sha Tin. As informed by EPD, the complainant was particularly concerned of two issues:</p> <ul style="list-style-type: none"> <li>• Construction works undertaken by the Contractor (Leighton–Kumagai Joint Venture) were noted after 2300 hour.</li> <li>• Some workers were noted leaving the site through Temporary Access Road (TAR) no.1 at around 2 am, causing nuisance to the residents in Garden Villa.</li> </ul>	<p>According to the information provided by the RSS, no construction activity was undertaken in the nighttime period (2300 – 0700 hours) at the concerned site area.</p> <p>LKJV did admit that some vehicles had been operating at midnight for transporting LKJV’s survey workers from the site. Inconsiderate behaviors were noted causing nuisance to Garden Villa residents:</p> <ol style="list-style-type: none"> <li>1. Driving the vehicles too fast, which generated excessive engine noise;</li> <li>2. Noise inside the vehicles (such as staff talking or radios) escaping through the open vehicle windows; and</li> <li>3. Vehicle beeping horn to request the guards to open the gate.</li> </ol> <p>In order to rectify the situation, LKJV had notified the relevant staff with the receipt of the complaint and urged them to take appropriate measures when using TAR1 at night:</p> <ol style="list-style-type: none"> <li>1. to drive slowly in order to reduce the engine noise, especially when approaching Garden Villa;</li> <li>2. to roll up the vehicle windows to contain any noise from talking or radios; and</li> <li>3. to prohibit beeping the vehicle horn for gate opening; instead, to park the car and approach the guard on foot.</li> </ol>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
41023	Government Quarters (Butterfly Valley)	20-Oct-04 (by MHJV)  23-Oct-04 (by ET Leader)	A public complaint was received by the Engineer's Representative (ER) of Route 8 – Eagle's Nest Tunnel and Associated Works (R8-ENT) Project on 20 <sup>th</sup> October 2004. The complaint was raised by a resident of the Government Quarters at Caldecott Road, concerning dust generation as a result of the construction activities at Butterfly Valley. The ER subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 23 <sup>rd</sup> October 2004.	<p>The complaint was considered valid based on:</p> <ol style="list-style-type: none"> <li>1. ER's site observations;</li> <li>2. ET's weekly site audit; and</li> <li>3. 1-hr TSP exceedance record.</li> </ol> <p>Also, the sources of dust generation were identified as</p> <ol style="list-style-type: none"> <li>1. 2 portions of the haul roads, one at Slope BV-S2 and one linking between South Portal Tunnel to Mui Kong Tsuen, were found to be dry.</li> <li>2. Dust impact due to the haulage of excavated materials at the South Portal.</li> </ol> <p>Enhanced dust suppression measures had been implemented by the Contractor:</p> <ul style="list-style-type: none"> <li>• added rockfill to the haul road between South Portal Tunnel and the Gully fill area;</li> <li>• maintained watering to haul road at Slope BV-S2;</li> <li>• requested the fill material supplier to ensure the material was in a damp condition before leaving quarry;</li> <li>• provided for material not dampened at the Quarry to be directed to the wheel wash for water spray before entering the site;</li> <li>• when cleaning drill holes along slope BV-S4 to ensure adequate water was available for flushing to suppress dust emission; AND</li> <li>• provided damper stockpiles of cleared material at BV-S2 before loading.</li> </ul> <p>Based on ER's site observations, most of the above mitigation measures have been implementing by the Contractor. Also, an additional water browser was delivered to site on 29<sup>th</sup> Oct 04. No significant fugitive dust emission has been found.</p> <p>During ET's site inspections on 27<sup>th</sup> Oct and 3<sup>rd</sup> Nov 2004, the situation was found improved. No deficiency relating to air quality impact was noted by ET during the two audit sessions.</p> <p>The results of air quality monitoring (1-hr and 24-hr TSP) in the period between 21<sup>st</sup> Oct and 2<sup>nd</sup> Nov 2004 were all found to be complied with the Action / Limit Levels.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
41124	Government Quarters (Butterfly Valley)	21-Nov-04 (by LKJV)  24-Nov-04 (by ET Leader)	A public complaint was received by the Contractor of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project on 21 <sup>st</sup> November 2004 (Sunday). The complaint was concerned about excessive noise generation from construction machinery at Butterfly Valley on the same day. The Engineer’s Representative (ER) subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 24 <sup>th</sup> November 2004.	According to the ER, the only construction activity at Butterfly Valley undertaken on 21 <sup>st</sup> Nov 04 was formation of access road near Slope BV-S2. The activity only involved operations of 1 no. of excavator and 1 no. of dump truck with grab, which complied with the condition stipulated in a valid CNP GW-RW0484-04, which was hold by the Contractor.  Routine noise monitoring was conducted on 21 <sup>st</sup> and 28 <sup>th</sup> Nov 2004 at NM6. All the measured noise levels (48.5 to 56.4 dB(A)) were well below the noise limit level. In addition, the measurement results were within the baseline noise level.  Therefore, the complaint was considered to be invalid. Nevertheless, the Contractor was reminded to ensure the compliance of the conditions stipulated in CNP. The Contractor was also recommended to adopt good site practice in order to minimize the construction noise.	Closed
41201	Government Quarters (Butterfly Valley)	01-Dec-04 (by MHJV & ET Leader)	A public complaint was received by the Engineer’s Representative (ER) of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project on 1 <sup>st</sup> December 2004. The complaint was raised by a resident of the Government Quarters at Caldecott Road, concerning dust generation at Butterfly Valley. The Environmental Team (ET) of the Project was informed with the complaint on the same day.  The resident complained that a large portion of the excavated slopes was not properly covered, which caused dust nuisance to her.	The complaint was considered valid based on: 1. ER’s site observations; 2. ET’s weekly site audit  Upon receipt of the complaint, a series dust control measures had been implemented by the Contractor, such as covering of the exposed slopes with appropriate sheeting, regular watering to the haul roads and excavated slope faces, etc.  During the ET’s weekly site audit on 08-Dec-04 together with the representative of HyD, IEC, ER and the Contractor, the above mitigation measures were observed. The idle slopes at BVS2 had been covered by tarpaulin sheeting and erosion mat. The left exposed slope surfaces at BVS2 were under excavation, thus being unable to be covered.  According to the ER, the complainant has expressed his satisfaction to the site condition on 07-Dec-04, after the implementation of dust mitigation measures by the	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Contractor.</p> <p>However, owing to the prevailing of the dry season, the Contractor was reminded to ensure the dust control measures are effectively implemented.</p>	
50125	Garden Villa (North Portal)	<p>21-Jan-05 (by EPD)</p> <p>25-Jan-05 (by ET Leader)</p>	<p>Environmental Protection Department (EPD) received a public noise complaint on 21 January 2005 about construction noise and dust generated from the Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project, nearby by Garden Villa at Tai Po Road, Sha Tin. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 25 January 2005.</p> <p>The complaint was about construction noise and dust generated from a construction site nearby Garden Villa at Tai Po Road, Sha Tin. The complainant was particularly concerned of two issues:</p> <ol style="list-style-type: none"> <li>1. Noise from tunnel blasting work carrying out at around 7:30am and 10:00pm; and</li> <li>2. Dump trucks without covering of canvas when leaving the construction site.</li> </ol>	<p><b><u>Noise from blasting</u></b> For carrying out the blasting, the Contractor had obtained the permit from relevant authority. The ET’s noise monitoring results did not show any exceedance for the measurement taken when blasting was in place. It should be highlighted that for carrying out blasting works, permission should be obtained by Mines Division of CEDD, but not under the control of EPD. In order to minimize the nuisance from the works, the Contractor was recommended:</p> <ul style="list-style-type: none"> <li>• To inform the residents around the area about the time of blasting in advance; and</li> <li>• To re-schedule the blasting time table, if possible, in order to avoid nuisance.</li> </ul> <p><b><u>Uncovered dump trucks</u></b> In order to evaluate the situation, two inspections were carried out by the ET at Garden Villa on 27-Jan and 28-Jan-05 to identify the dump trucks leaving the site with uncovered load. On 27-Jan-05, 3 nos. of trucks, which were working for ENT Project, was noted by-passing Garden Villa without proper cover.</p> <p>Enhanced control (penalty system) was implemented by the Contractor after the inspection on 27-Jan. During the inspection on 28-Jan-05, 24 nos. of dump trucks for ENT Project were found leaving the site. No non-compliance was noted for the trucks working for ENT Project.</p> <p>LKJV was reminded to keep closely monitoring on the condition and the effectiveness of the proposed control measures.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50308	Garden Villa (North Portal)	05-Mar-05 (by EPD)  08-Mar-05 (by ET Leader)	<p>EPD received a public complaint on 5 March 2005 about construction noise and dust generated from the construction sites of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) and Route 8 - Sha Tin Heights Tunnel and Approaches (R8-SHT), nearby by Garden Villa at Tai Po Road, Sha Tin. EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 8 March 2005.</p> <p>The complaint was about construction noise and dust generated from the construction sites nearby Garden Villa at Tai Po Road, Sha Tin. The complainant was particularly concerned of the following issues:</p> <ol style="list-style-type: none"> <li>1. Nighttime &amp; Sunday construction noise</li> <li>2. Noise from tunnel blasting at early morning and nighttime</li> <li>3. Dust from construction activities</li> </ol>	<p><i>Nighttime &amp; Sunday construction noise</i></p> <ul style="list-style-type: none"> <li>• no exceedance for noise monitoring</li> <li>• restricted hour works were found complied with the CNPs</li> <li>• records of vehicular trips on TAR1 did not show non-compliance of CNP conditions</li> </ul> <p><i>Noise from tunnel blasting at early morning and nighttime</i></p> <ul style="list-style-type: none"> <li>• no exceedance for noise monitoring</li> <li>• valid blasting permit had been obtained from CEDD</li> <li>• blasting work is not under the jurisdiction of EPD</li> </ul> <p><i>Dust from construction activities</i></p> <ul style="list-style-type: none"> <li>• dump trucks with uncovered / inadequately covered materials were observed leaving site</li> <li>• no exceedance for TSP monitoring</li> <li>• enhanced dust suppression measures had been implemented by the Contractor</li> </ul> <p><u>Conclusions</u> The complaint against the dust issue (uncovered / inadequately covered dump trucks) was considered justifiable. The Contractor was reminded to review the current checking system. Continuous spot checks would be performed by ET and RSS.</p>	Closed
50330	Garden Villa (TAR1)	30-Mar-05 (by EPD & ET Leader)	<p>Environmental Protection Department (EPD) received a public complaint on 30<sup>th</sup> March 2005 about construction noise from the sites of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) near Garden Villa at Tai Po Road, Sha Tin.</p> <p>The complaint, which was lodged by a resident of Garden Villa on 29<sup>th</sup> March 2005, 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.</p>	<p>The site of concern was likely to be the Temporary Access Road no.1 (TAR1) connecting Tai Po Road and the construction sites of R8-ENT and Route 8 - Sha Tin Heights Tunnel and Approaches (R8-SHT).</p> <p>The time period of concern was within normal working hours (7am to 7pm) on a weekday not being holidays. According to the EM&amp;A Manual, the criterion of construction noise in term of <math>L_{eq-30min}</math> within this period is 75 dB(A) for domestic premises.</p> <p>Since the commencement of the Project, no exceedance of daytime noise criterion of 75 dB(A) was recorded at Station AM3 (Garden Villa). During the 2-hour measurement period of the ad-hoc monitoring (0700-0900 hrs), all the measured noise levels (<math>L_{eq-30min}</math>) were below the daytime noise</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>criterion of 75 dB(A).</p> <p>Based on the results of routine noise monitoring and the ad-hoc measurement on 1<sup>st</sup> April 2005 at Garden Villa, no exceedance of daytime noise criterion of 75 dB(A) was recorded. The complaint lodged is therefore considered not justifiable.</p> <p>In order to minimize the nuisance generated by the vehicle use at Garden Villa, the Contractor has proposed to limit the frequency of trucks existing from TAR1 at a rate of one truck per minute during the time period of concern (7am to 8:30am).</p>	
50415	Government Quarters	<p>09-Apr-05 (by EPD)</p> <p>15-Apr-05 (by ET Leader)</p>	<p>The complaint, which was lodged by a resident of 7/F, 38B, 8-10 Caldecott Road (Governmental Quarters) on 9<sup>th</sup> April 2005, was about the noise generated by the construction works at the Butterfly Valley during daytime. The complainant mentioned that the instant noise level taken by himself was 78 to 82 dB(A).</p> <p>EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 15<sup>th</sup> April 2005.</p> <p>The time period of concern was within normal working hours (7am to 7pm) on a weekday not being public holidays. According to the EM&amp;A Manual, the criterion of construction noise in term of <math>L_{eq-30min}</math> within this period is 75 dB(A) for domestic premises.</p>	<p>Governmental Quarters (Station NM6) is one of the designated noise monitoring stations in the EM&amp;A programme. Routine monitoring is undertaken on a weekly basis in accordance with the EM&amp;A Manual.</p> <p>Since the commencement of the Project, no exceedance of daytime noise criterion of 75 dB(A) was recorded at this station.</p> <p>Ad-hoc measurement was conducted at the complainant's premises on 22 Apr 05. The measured noise level was 69.0 dB(A), which was well below the daytime noise criterion of 75 dB(A).</p> <p>Based on the results of routine noise monitoring and the ad-hoc measurements conducted in the complainant premises, no exceedance of daytime noise criterion of 75 dB(A) was recorded. The complaint lodged is therefore considered not justifiable.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50419	Government Quarters	15-Apr-05 (by EPD)  19-Apr-05 (by ET Leader)	<p>The complaint was lodged by a resident of 8-10 Caldecott Road (Government Quarters) on 15<sup>th</sup> April 2005 to EPD as well as the Chief Resident Engineer of the Project.</p> <p>EPD subsequently referred the complaint to the Environmental Team (ET) Leader of the Project on 19<sup>th</sup> April 2005.</p> <p>The complainant mentioned that they had experienced quite a lot of noise emanating from the tunnel drilling area after 11pm over several nights and most particularly at the night of 14<sup>th</sup> April 2005 and at 4am on 15<sup>th</sup> April 2005.</p>	<p>The site of concern was likely to be the South Portal. For carrying out construction works at this area during restricted hours, two Construction Noise Permits (CNPs no. GW-RW0085-05 and GW-RW0086-06) were obtained by the Contractor in accordance with the requirements stipulated in Noise Control Ordinance.</p> <p>According to the information provided by the Resident Site Staff and the Contractor, the construction activities undertaken in the period between 11<sup>th</sup> and 15<sup>th</sup> April 2005 from 1900 to 0700 hours included drilling, breaking, trimming, set up of rock drill, installation of arch-rib and grouting.</p> <p>The powered mechanical equipment (PME) involved in the above works included backhoe, rock drill, loader, dumper, shot-crete machine, group pump, mobile platform and grout machine, which were covered by the CNPs.</p> <p>According to the routine monitoring results, for the time period between 2300-0700 hours, the measured noise levels exceeded the corresponding noise Limit Level of 50dB(A). However, the measured levels were found within the range of baseline level and below the average baseline level.</p> <p>Based on the routine noise monitoring results at Station NM6, the measured noise levels for the period between 2300-0700 hours were below the baseline noise level, which was comparable to the ambient level. According to the RSS's record, the PME items operated during the concerned period were found covered by the 2 CNPs hold by the Contractor.</p> <p>Based on the available information, there is not enough evidence to prove whether the complaint against nighttime construction noise generated in the concerned period (11<sup>th</sup> to 15<sup>th</sup> April 2005) is justifiable or not.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50512	Yew Chung International School	12-May-05	<p>On 11 May 05, a notice was sent to Yew Chung International School (YCIS) by the Contractor, providing their tentative blasting schedule on 12 May 05. It was shown that one of the blasting operations was scheduled at 09:30am, at when an examination was being held in YCIS.</p> <p>Upon receipt of the notice, a representative of YCIS lodged a complaint to the Contractor via the Project's hotline at 07:40 on 12 May 2005. The complainant expressed her objection to the blasting operation taken at 09:30am when the examination was taken place.</p> <p>The Contractor then agreed on one occasion only to delay the tunnel blast planned for 9:30am until 9:50am (i.e. 5 min after the examination). The complainant satisfied but did expect no future blasting during the examination period. According to the Engineer's Representative, the Contractor did not wish to make any commitment to ensure no blasting would be taken within the examination period.</p>	<p>A 1-day continuous noise measurement was conducted by the Environmental Team at Station NM1 on 26 May 05. According to the ER's record, two blasting operations were taken in the vicinity of YCIS on 26 May 05. One surface blast was taken at Butterfly Valley at 15:42 and one tunnel blasting was taken at South Portal at 16:56.</p> <p>The measurement results showed that the noise impact in term of Leq-5min and Leq-30min arising from the blasting operations was insignificant. No exceedance of construction noise criterion for examination period was recorded (Leq-30min &lt; 65dB(A)).</p> <p>The complaint lodged was therefore considered not justifiable.</p> <p>However, in order to minimize the potential nuisance arising from the blasting noise and the siren sounds prior to blasting, the Contractor was recommended to consider scheduling the blasting operations beyond the examination periods.</p>	Closed



Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50610	Government Quarters	10-Jun-05	<p>On 10 June 2005, the Resident Site Staff (Maunsell-Hyder Joint Venture) received a complaint from a resident of the Government Quarters at Caldecott Road. The complaint was concerned about the construction dust generation as a result of the construction activities of the Project at Butterfly Valley.</p> <p>The complainant had not specified which construction activities had contributed to the dust generation.</p>	<p><i>Site Observations</i></p> <p>According to the RSS's preliminary investigation, it was considered that soil nailing at Slope BV-S2 was the dominant dust source and was likely to be the activity of concern. The dust suppression measures taken were found inadequate to control the dust dispersion from the works. Noticeable dust dispersion from the soil nailing work could be observed.</p> <p><i>Corrective Actions</i></p> <p>After the Contractor was notified by the RSS of the complaint, immediate action was taken by the Contractor on the same day (10 June 2005).</p> <p>The dust mitigation measures for the soil nailing were enhanced. An additional thicker cover was used. Also, continuous water spray was applied to suppress the dust emission.</p> <p><i>Environmental Outcome</i></p> <p>The RSS made a response to the complainant on 10 June 2005. The complainant was informed of the rectification actions taken by the Contractor. No further adverse comment was received from the complainant.</p> <p><i>Conclusions</i></p> <p>Based on the RSS's information, this complaint is considered to be valid and related to the construction activities of the Project. However, corrective action had been taken by the Contractor immediately and the situation was found improved.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50712	A scattered house near South Portal and Tai Po Road Water Treatment Works Staff Quarters	12-Jul-05	<p>On 12 July 2005, a resident, whose house is located near South Portal and Tai Po Road Water Treatment Works Staff Quarters, lodged a complaint to the Contractor via the Project's hotline at 11:40am. The complainant expressed his concern on the nuisance caused by the blasting works at early morning (before 07:00 hours) and late night (after 23:00 hours).</p>	<p><i>Site Activity</i></p> <p>According to the information provided by the RSS, tunnel blasting works have been taken place in the concerned period in north bound tunnel from the Ventilation Adit towards the direction of the South Portal.</p> <p><i>Environmental Requirements</i></p> <p>In the EP, the EM&amp;A Manual of the Project and the NCO, no requirement is specified for the control of blasting operation and the associated environmental impact, such as blasting noise.</p> <p>It should be highlighted that for carrying out blasting works, permission should be obtained by Mines Division of CEDD, but not under the jurisdiction of EPD.</p> <p>For carrying out the above-mentioned blasting operations, the Contractor has obtained a valid blasting permit from CEDD under the Dangerous Goods Ordinance (Cap. 295). Under this permit, the Contractor is allowed to carry out 24-hour blasting works within the designated area.</p> <p><i>Contractor's Actions</i></p> <p>Though the blasting noise is not under the control of any environmental related regulation and the Contractor is allowed to carry out 24-hour blasting, the Contractor would try to keep the blasts of concern undertaken between 07:00 to 23:00 hours. This arrangement could effectively reduce the potential nuisance to the residents within the more sensitive time period (23:00 to 07:00 on next day).</p> <p><i>Conclusions</i></p> <p>The subjected blasting operations were carried out by the Contractor under a valid blasting permit. The complaint lodged is therefore considered not justifiable.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50809	Government Quarters (8-10 Caldecott Road)	09-Aug-05	<p>On 9 August 2005, a resident of 8-10 Caldecott Road (Government Quarters) lodged a complaint to the Contractor via the Project's hotline at 14:30. The complainant expressed her concern on the nuisance caused by the blasting works undertaken at Butterfly Valley.</p> <p>Noise impact arising from the blasting works was one of the issues raised by the complainant.</p>	<p><i>Ad-hoc Noise Measurement</i></p> <p>An ad-hoc noise measurement was carried out on the roof of Government Quarters during a surface blast on 16 August 2005. According to the record of the RSS and the site observation, a surface blasting was undertaken at Butterfly Valley at around 15:38 on the monitoring day.</p> <p>The results show that the measured noise level in term of Leq-30min, i.e. 69.1 dB(A) during the surface blasting was well below the daytime construction noise criterion of 75 dB(A).</p> <p><i>Conclusion and Recommendation</i></p> <p>According to the results of ad-hoc noise measurement taken at Government Quarters on 16 August 2005, the measured noise levels (Leq-30min) did not exceed the noise criterion of 75 dB(A). In addition, the subjected blasting operations were carried out by the Contractor under a valid blasting permit. For the concern of noise impact, the complaint was considered not justifiable.</p>	Closed
50830	Government Quarters (8-10 Caldecott Road)	30-Aug-05	<p>The RSS received a public complaint from a resident of Government Quarters addressing two noise issues:</p> <ol style="list-style-type: none"> <li>1. Noise nuisance caused by drilling works at Butterfly Valley;</li> <li>2. Noise nuisance due to blasting 0045 hrs of 28 August 2005.</li> </ol>	<p><i>Noise Measurement</i></p> <p>No exceedance was recorded for the routine noise monitoring at NM6 (Government Quarters). Ad-hoc noise measurement was conducted on 1 and 2 Sept 05. All measured noise levels complied with the noise criteria.</p> <p><i>Conclusion</i></p> <p>The complaint was considered not justifiable. However, the Contractor had taken proactive actions in order to minimize the nuisance of the residents, (1) to stop the rock breaking works at BVS2 and (2) to install temporary noise barriers for drilling works.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
50928	Government Quarters (8-10 Caldecott Road)	28-Sept-05	A resident of Government Quarters complaint about a blast undertaken at 0215hr on 28 Sept 05.	<p><i>Environmental Monitoring</i></p> <p>After receiving the complaint, the ET carried out a continuous noise measurement at Station NM6 (Government Quarters) from 29 to 30 September 2005. All the measured noise levels in term of Leq-5min are close to the baseline noise level. The noise levels after correction of baseline levels were all below the noise criterion of 50 dB(A).</p> <p><i>Conclusion</i></p> <p>The subjected blasting operations were carried out by the Contractor under a valid blasting permit. In addition, no noise exceedance was recorded for the ad-hoc noise monitoring. The complaint lodged is therefore considered not justifiable.</p>	Closed
51025	Caldecott Hill (2 Caldecott Road)	25-Oct-05	<p>A public complaint was received by the MWPMO of Highways Department on 25 October 2005. The complaint was subsequently refereed to the RSS and Environmental Team of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project.</p> <p>The complaint was lodged by the management company of Caldecott Hill (No.2 Caldecott Road). It was about dust generation when construction vehicles, particularly dump trucks and concrete trucks, traveling along the Water Treatment Works (WTW) access road and its junction with Caldecott Road.</p> <p>According to the photos provided by the complainant, noticeable dust generation was observed during construction vehicles movement on the roads of concern.</p>	<p><i>Site Observations</i></p> <p>Ad-hoc site inspections were carried out on 25 and 26 Oct 05. On 26 Oct 05, the WTW access road was observed dry. Deposition of dusty materials was noted. Significant dust generation was identified during vehicle movement.</p> <p><i>Contractor’s Actions</i></p> <p>Mitigation actions were taken by the Contractor:</p> <ol style="list-style-type: none"> <li>1. One labour was appointed to water spray the concerned road junction and clear up of dusty materials deposited on the WTW access road.</li> <li>2. Regular watering on access road by hose pipe was performed to keep the road wet.</li> <li>3. All vehicles would be wheel-washed and loads of dusty materials would be covered before leaving the site.</li> </ol> <p><i>Conclusions</i></p> <p>Based on the site observations, this complaint was considered to be valid and related to the Project works. However, enhanced dust mitigation measures were taken by the Contractor and the situation was found improved.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
51031	Po Leung Kuk Choi Kai Yau School	31-Oct-05	The resident site staff (MHJV) of R8-ENT received a complaint from the Principal of PLKCKY School. She commented that the blasting noise (nighttime and daytime) at Butterfly Valley became louder than before.	An ad-hoc noise measurement was taken by ET on 5 Nov 05 to evaluate the noise impact due to daytime surface blasting at the BV. The measurement results revealed that there has been no exceedance of noise level criteria.  The complaint was therefore considered not justifiable.	Closed
51101	Butterfly Valley (Government Quarters)	1-Nov-05	<p>On 1 Nov 05, the Resident Site Staff received a complaint from a resident of the Government Quarters. On 2 Nov 05, a complaint of similar natures and same location was received by the Environmental Protection Department.</p> <p>The complainant was concerned about the following environmental issues:</p> <ol style="list-style-type: none"> <li>Noise nuisance due to tunnel blasting works undertaken at midnights and in early mornings (3am to 5am);</li> <li>Noise nuisance due to operation of a generator after 11pm;</li> <li>Construction dust and daytime noise due to processing and stockpiling of crushed rocks at Butterfly Valley;</li> <li>Noise nuisance due to works outside tunnel in the early morning of 2 Nov 05.</li> </ol>	<p><u>Item 1: Noise nuisance due to tunnel blasting</u> For carrying out the above-mentioned blasting operations, the Contractor has obtained a valid blasting permit from CEDD. Under this permit, the Contractor is allowed to carry out 24-hour blasting works. As advised by the Contractor, all the blasting operations had been completed by 12 Nov 05.</p> <p><u>Item 2: Noise due to operation of a generator after 11pm</u> According to the Construction Noise Permit issued by EPD, one generator was allowed to be operated after 11pm at South Portal area outside the tunnel. In view of the provision of acoustic enclosure and the separation distance from the generator to Government Quarters (around 300m), the noise impact arising from this generator onto the residents of the Quarters was believed to be insignificant. During the ET's investigation on 11 Nov 05, no engine-like noise generated from the construction site could be identified.</p> <p><u>Item 3: Dust and noise due to handling of crushed rocks</u> No noise exceedance was recorded. During the weekly site inspections, deficiencies regarding inadequate dust mitigation measures for the crushed rock processing and stockpiling were occasionally observed. Dry / uncovered stockpiles and dust emissions from crushed rocks handling were sometimes noted.</p> <p><u>Item 4: Noise from works out of tunnel in morning of 2 Nov 05</u> According to the RSS's site records, there has been no activity outside the tunnel in the early morning of 2 November 2005. Work was undertaken deep inside the tunnel during the concerned period. The mentioned noise nuisance might not be related to R8-ENT Project. An ad-hoc noise measurement was carried out by ET from 8 to 10 November 2005 in order to evaluate the noise at Quarter's residents and no exceedance was recorded.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p><u>Conclusion</u></p> <p>Based on the information obtained, environmental monitoring results and site observations, this complaint was considered not justifiable, except for the concern of dust nuisance due to crushed rock processing.</p>	
51205	Caldecott Road junction	5-Dec-05	<p>The complaint was lodged by the management company of Villa Carlton. The complainant mentioned that several complaints from the occupants of Villa Carlton were received, against the dust emission when they drove to Kowloon via the Caldecott Road Junction. She also considered that the amount of water spraying by the Contractor was insufficient to suppress dust emission at Caldecott Road Junction.</p>	<p><u>Complaint Record</u></p> <p>A similar complaint (Log no. 51025) was received on 25 Oct 05 from Caldecott Hill. Significant dust emission was noted when construction vehicles traveling along the WTW access road and its junction with Caldecott Road.</p> <p>With implementation of enhanced dust mitigation measures, the situation was found improved and satisfactory.</p> <p><u>Site Observations</u></p> <p>Since Nov 05, in order to observe the Contractor's actions taken for the above-mentioned complaint, the area of interest was included during the weekly environmental audit. No deficiency had been noted at this area during the audit.</p> <p>After receiving this new complaint (Log no.51205), several ad-hoc site inspections were carried out on 6, 8 and 14 Dec 05. In addition, the RSS of the Project had carried out daily checking of the condition of the Caldecott Road Junction.</p> <p>Sufficient dust mitigation measures had been implemented by the Contractor. The condition was found satisfactory. Therefore, this complaint was considered not justifiable.</p> <p>However, it is noted that the Contractor had stepped up dust mitigation measures to further improve the condition at Caldecott Road junction.</p>	Closed

Log Ref.	Location of Concern	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
60204	Garden Villa	4-Jan-06 (by ETL)	<p>A public complaint was received by the Environmental Protection Department on 3 January 2006. The complaint was subsequently referred to the Environmental Team of Route 8 – Eagle’s Nest Tunnel and Associated Works (R8-ENT) Project on 4 January 2006.</p> <p>According to EPD’s information, the complaint was lodged by a complainant, who walked along Tai Po Road on 1-2 January 2006. The following information was given by EPD for our investigation:</p> <ul style="list-style-type: none"> <li>• Time of concern: 1-2 January 2006 (Daytime)</li> <li>• Suspected site area of concern: ENT’s Toll Plaza and Administration Building.</li> <li>• Dust and noise nuisance was noted by the complainant when he passed Garden Villa.</li> <li>• Noise from wood saw and crane or alike was noted.</li> </ul>	<p><b>A. Construction Noise Impact</b></p> <p>According to the Contractor’s information, construction activities were carried out on 1 and 2 Jan 06, including:</p> <ul style="list-style-type: none"> <li>• Erection and dismantling of formwork</li> <li>• Fixing water pipe</li> </ul> <p>All the equipment operated by the Contractor on 1-2 Jan 06 complied with the permissible equipment stated in the CNP.</p> <p>On 1 Jan 06, noise monitoring was carried out. All the results complied with the noise criterion.</p> <p><b>B. Construction Dust Impact</b></p> <p>Erection and dismantling of formwork and fixing water pipe were considered not dust emissive in nature.</p> <p>For stockpiles of materials in Toll Plaza area, dust mitigation measures had been implementing by the Contractor. The condition in term of dust control was found satisfactory during the audit sessions on 4 and 11 Jan 06.</p> <p>Since December 2005, all TSP monitoring results complied with the Action / Limit Level.</p> <p><b>Conclusion</b></p> <p>Based on the information given, site observations and environmental monitoring results, this complaint was considered not justifiable.</p> <p>Nevertheless, the Contractor was reminded to adopt good site practice to minimize the environmental impacts at the nearby sensitive receivers</p>	Closed