China State – China Railway Joint Venture

CE 28/2004 (GE)

Landslide Preventive Works at Po Shan Road, Mid-Levels – Design and Construction (Natural Terrain Risk Mitigation Works)

Monthly EM&A Report for January 2009

February 2009

	Name	Signature
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Reviewed & Approved:	Edith Ng	

Version: 0	Date: 13 February 2009

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ENVIRON

Ref.: MSLPOSHNEM00_0_0130L.09

13 February 2009 By Fax (3188 0775) and Post

Engineer's Representative
Maunsell Geotechnical Services Ltd
Room 1808, 18/F, Tung Che Comm. Centre
246 Des Voeux Road West
Sheung Wan, Hong Kong

Attention: Mr. Freddie Chan

Dear Mr. Chan,

Re: Agreement No. CE28/2004 (GE)
Landslide Preventive Works at Po Shan, Mid-levels
Monthly EM&A Report for January 2009

Reference is made to the Monthly EM&A Report for January 2009 (Version 0) by the Environmental Team by email on 10 February 2009, we would like to inform that we have no comment on the captioned report.

Please also note that the Monthly EM&A Report had been verified in accordance with the Condition 2.9 of the Environmental Permit No. EP-235/2005/B.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

David Yeung
Independent Environmental Checker

c.c. ENSR Attn: Ms. Edith Ng Fax: 2891 0305

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EXECUTIVE SUMMARY

The Project "Landslide Preventive Works at Po Shan, Mid-levels – Design and Construction (Natural Terrain Risk Mitigation Works)" (hereafter called "the Project") includes the installation of about 700 numbers of soil nails and about 60 numbers of raking drains on the natural terrain within the concerned area.

China State – China Railway Joint Venture (CCJV) was commissioned as the Contractor of the Project. ENSR Asia (HK) Ltd. was employed by CCJV as the Environmental Team to carry out the EM&A programme.

The impact environmental monitoring and audit for the Project includes the air quality, noise, ecology, landscape and visual monitoring. The construction of the Project and the EM&A programme commenced on 1 April 2008.

This report documented the findings of EM&A works conducted in the period between 1 and 31 January 2009. As informed by the Contractor, construction activities in the reporting period were:

- Soil nailing works at Portion B2;
- Soil nail head construction at Portion A1 and A2; and
- Rock slope stabilization works at Portion C and Portion B2.

Breaches of Action and Limit Levels

There was no action / limit level exceedance recorded for 1-hour and 24-hour TSP monitoring.

In the reporting month, all noise level recorded complied with the limit level.

Complaint, Notification of Summons and Successful Prosecution

There was no complaint, notification of summons and successful prosecution received in the reporting month.

Reporting Change

There was no reporting change required in the reporting month.

Future Key Issues

The weather in the forthcoming month is expected to be dry and windy. The Contractor should maintain sufficient dust suppression measures, such as proper treatment of exposed slope and earth, and provide water spraying to any dusty construction activities.

It is also recommended to implement all necessary preventive measures to avoid oil leakage on ground / soil, such as provision of drip trays for all oil drums / chemical containers. In the event of oil leakage, the Contractor should properly remove the contaminated soil and dispose of as chemical waste. Construction waste and general refuse should be properly collected and disposed of.

1. INTRODUCTION

Background

1.1 The project site is located at the mostly undeveloped hillside above the residential development at Po Shan Road and adjacent to the trimmed back slope on the site of the catastrophic 1972 Po Shan Road failure. Previous studies had been carried out and results indicated that the natural hillside above Po Shan Road is affected by high groundwater level and unfavourable geology. Sub-surface drainage measures by means of sub-horizontal drains had been installed in 1984-85. These measures have been successful in lowering the main ground water table, thus improving the stability of the slopes such that large-scale failure have not occurred in the last twenty years.

1.2 The objective of the Project "Landslide Preventive Works at Po Shan, Mid-levels – Design and Construction (Natural Terrain Risk Mitigation Works)" under Contract CE 28/2004 (GE) is to carry out detailed design and supervision of landslide preventive works on local repair of the hillside to minimize slope deterioration and shallow instability.

1.3 The proposed landslide preventive works would be constructed to protect the existing residential developments at the toe of the project site.

1.4 The scope of works of this Project includes the installation about 700 numbers of soil nails and about 60 numbers of raking drains on the natural terrain within the concerned area. The length of the soil nails is about 20m with a spacing of 2m horizontally and 3m vertically; the length of raking drains is about 10m with a spacing of 5m horizontally and 15m vertically.

1.5 The Project is anticipated to complete in 10 months after the commencement of construction.

1.6 According to the Environmental Permit (EP-235/2005/B) and the EM&A Manual of the Project, there is a need of an EM&A programme including air quality, noise, ecology, and landscape and visual monitoring.

1.7 ENSR Asia (HK) Ltd. (ENSR) was employed by the Contractor, China State – China Railway Joint Venture, as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. In accordance with the EM&A Manual of the Project, environmental monitoring of air quality, noise, ecology, landscape and visual and environmental site inspections would be required for this Project.

Scope of Report

1.8 This is the tenth monthly Environmental Monitoring and Audit (EM&A) Report under the Contract CE 28/2004 (GE) – Landslide Preventive Works at Po Shan Road, Mid-Levels – Design and Construction (Natural Terrain Risk Mitigation Works). This report presented a summary of the environmental monitoring and audit works, list of activities, and mitigation measures proposed by the ET for the Project in January 2009.

Project Organization

1.9 The project organization is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1

.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
CEDD	Senior Engineer	H. W. Sun	2762 5375	2714 0247
ER (MGS)	Resident Engineer	Freddie Chan	3188 0400	3188 0775
	Assistant Resident Engineer	S. F. Chau	3188 0400	3188 0775
IEC (ENVIRON)	Independent Environmental Checker	David Yeung	3743 0788	3548 6988
Contractor (CCJV)	Project Manager	C. Y. Mak	3188 0538	3188 1710
	Safety and Environmental Officer	Ken Fong	3188 0538	3188 1710
ET (ENSR)	ET Leader	Edith Ng	3105 8525	2891 0305

Summary of Construction Works

1.10 The Contactor has carried out major activities in the reporting month. Details of the works undertaken in this reporting period are listed below:

- Soil nailing works at Portion B2;
- Soil nail head construction at Portion A1 and A2; and
- Rock slope stabilization works at Portion C and Portion B2.

1.11 The general layout plan of the Project site showing the contract area is shown in Figure 1.1. The construction programme is provided in Appendix B.

1.12 The mitigation measures implementation schedule are presented in Appendix C.

Summary of EM&A Programme Requirements

1.13 The EM&A programme required environmental monitoring for air quality, noise, ecology and landscape and visual and environmental site inspections for air quality, noise, ecology, landscape and visual and waste management. The EM&A requirements for each parameter described in the following sections include:

- All monitoring parameters;
- Monitoring schedules for the reporting month and forthcoming months;
- Action and Limit levels for all environmental parameters;
- Event / Action Plan;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirement in contract documents.

2. AIR QUALITY

Monitoring Requirements

2.1 In accordance with the EM&A Manual, 1-hour and 24-hour TSP levels at 2 air quality monitoring stations were established. Impact 1-hour and 24-hour TSP monitoring was conducted for at least once every 7 days during the construction phase of the Project. The Action and Limit level of the air quality monitoring is provided in Appendix D.

Monitoring Equipment

2.2 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at each designated monitoring station. The HVS meets all the requirements of the EM&A Manual. Portable direct reading dust meters were used to carry out the 1-hour TSP monitoring. Table 2.1 summarises the equipment used.

Table 2.1 Air Quality Monitoring Equipment

Equipment	Model
High Volume Sampler	GS 2310 Accu-vol system
Calibrator	GMW 25
1-hour TSP Dust Meter	Laser Dust Monitor – Model LD-3

Monitoring Parameters, Frequency and Duration

2.3 Table 2.2 summarizes the monitoring parameters, frequency and duration of impact TSP monitoring.

Table 2.2 Air Quality Monitoring Parameters, Frequency and Duration

Monitoring Station	Parameter	Frequency and Duration
CA1 & CA2	24-hour TSP	At least once every 7 days
	1-hour TSP	At least 3 times every 7 days

Monitoring Locations

2.4 Both monitoring stations were set up at the proposed locations in accordance with EM&A Manual. Table 2.3 describes details of the two monitoring stations. The monitoring locations are shown in Figure 2.1.

Table 2.3 Locations of Air Quality Monitoring Stations

Monitoring Station	Identity / Description
CA1	Access road to Po Shan Mansions
CA2	Podium of Hamilton Court

Monitoring Methodology

24-hour TSP Monitoring

Installation

2.5 The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.

- A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
- The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
- A minimum of 2 meters separation from walls, parapets and penthouse was required for rooftop sampler.
- No furnace or incinerator flues were nearby.
- Airflow around the sampler was unrestricted.
- Permission was obtained to set up the samplers and to obtain access to the monitoring stations.
- A secured supply of electricity is needed to operate the samplers.

Preparation of Filter Papers

- Glass fibre filters, G810 were labeled and sufficient filters that were clean and without pinholes were selected.
- All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 ℃ and not variable by more than ±3 ℃; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.
- *ALS Technichem (HK) Pty Ltd.* has comprehensive quality assurance and quality control programmes.

Field Monitoring

- The power supply was checked to ensure the HVS works properly.
- The filter holder and the area surrounding the filter were cleaned.
- The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
- The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
- The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges.
- Then the shelter lid was closed and was secured with the aluminum strip.
- The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
- A new flowrate record sheet was set into the flow recorder.
- The range specified in the EM&A Manual was between 0.6-1.7 m^3/min.
- The programmable timer was set for a sampling period of 24 hrs $\pm$ 1 hr, and the starting time, weather condition and the filter number were recorded.
- The initial elapsed time was recorded.
- At the end of sampling, the sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
- It was then placed in a clean plastic envelope and sealed.
- All monitoring information was recorded on a standard data sheet.
- Filters were sent to *ALS Technichem (HK) Pty Ltd.* for analysis.

Maintenance and Calibration

- The HVS and its accessories are maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVSs are calibrated using GMW-25 Calibration Kit prior to the commencement of baseline air

quality monitoring, and will be calibrated at bi-monthly intervals throughout all stages of the impact monitoring.

- Calibration records are shown in Appendix E.

1-hour TSP Monitoring

Measuring Procedures

2.6 The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer's Instruction Manual as follows:

- Set POWER to "ON", push BATTERY button, make sure that the meter's indicator is in the range with a red line and allow the instrument to stand for about 3 minutes (Then, the air sampling inlet has been capped).
- Push the knob at MEASURE position.
- Push "O-ADJ" button. (Then meter's indication is 0).
- Push the knob at SENSI ADJ position and set the meter's indication to S value described on the Test Report using the trimmer for SENSI ADJ.
- Pull out the knob and return it to MEASURE position.
- Push "START" button.

Maintenance and Calibration

- The 1-hour TSP meter would be checked at 3-month intervals and calibrated at 1-year intervals throughout all stages of the air quality baseline monitoring. Calibration records are shown in Appendix E.

Monitoring Results

2.7 The monitoring results for 1-hour TSP and 24-hour TSP are summarized in Table 2.4 and 2.5 respectively and the monitoring results are provided in Appendix F.

Table 2.4 Summary of 1-hour TSP Monitoring Results in the Reporting Period

	Average (μg/m^3)	Range (μg/m^3)	Action Level (μg/m^3)	Limit Level (μg/m^3)
CA1	75.1	65.8 – 85.5	309.3	500
CA2	71.0	61.6 – 81.5	319.6	500

Table 2.5 Summary of 24-hour TSP Monitoring Results in the Reporting Period

	Average (μg/m^3)	Range (μg/m^3)	Action Level (μg/m^3)	Limit Level (μg/m^3)
CA1	69.7	23.4 – 151.4	166.8	260
CA2	81.2	27.9 – 122.8	187.0	260

2.8 Air quality monitoring was carried out for both 1-hour TSP and 24-hour TSP at all the monitoring stations in the reporting month.

2.9 The air quality monitoring results, in terms of 1-hour TSP and 24-hour TSP, were below the action and limit level at both monitoring locations in the reporting month. The event action plan is annexed in Appendix G.

2.10 Weather information including wind speed and wind direction is annexed in Appendix H. The information was obtained from Hong Kong Observatory Victoria Peak Automatic Weather Station and Central Pier Anemometer Station.

3. NOISE MONITORING

Monitoring Requirements

3.1 In accordance with the EM&A Manual, impact noise levels should be obtained at 2 noise monitoring stations. Impact noise monitoring was conducted for at least once per week during the construction phase of the Project. The Action and Limit level of the noise monitoring is provided in Appendix D.

Monitoring Equipment

3.2 Integrating Sound Level Meter was employed for noise monitoring. They were Type 1 sound level meters capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (Lx). They comply with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). Portable electronic wind speed indicator capable of measuring wind speed in m/s was employed to check the wind speed. Table 3.1 details the noise monitoring equipment used.

Table 3.1 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-31
Calibrator	Rion NC-73

Monitoring Locations

3.3 Two monitoring stations were set up in accordance with EM&A Manual. Table 3.2 describes details of the two monitoring stations. The monitoring locations are shown in Figure 2.1.

Table 3.2 Locations of Noise Monitoring Stations

Monitoring Station	Identity / Description
CN1	Block A, Po Shan Mansions
CN2	Block A, Po Shan Mansions

Monitoring Parameters

3.4 One set of 30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays at a frequency of once per week was required to determine the impact noise level. L_{eq}, L_{10} and L_{90} would be recorded.

Monitoring Methodology

Monitoring Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- Façade measurements were made at all three monitoring locations.
- 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: L_{eq}(30 minutes) during non-restricted hours i.e. between 07:00 and 19:00 on normal weekdays
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), 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 a portable wind meter.

- During the monitoring period, the L_{eq} , L_{10} and L_{90} 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 (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.
- Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

- The microphone head of the sound level meter and calibrator is cleaned with soft cloth at quarterly intervals.
- The meter should be checked and calibrated at yearly intervals.
- Calibration details for the sound level meter and calibrator are provided in Appendix E.

Monitoring Results

3.5 The monitoring results for noise are summarized in Table 3.3 and the monitoring data is provided in Appendix I.

Table 3.3 Summary of Noise Monitoring Results in the Reporting Period

	Average, dB(A), $L_{eq\ (30\ mins)}$	Range, dB(A), $L_{eq\ (30\ mins)}$	Limit Level, dB(A), $L_{eq\ (30\ mins)}$
CN1	59.7	58.7 – 60.1	75.0
CN2	58.9	58.3 – 59.4	75.0

3.6 There was no noise complaint received in the reporting month, hence, no action level exceedance was recorded. At both monitoring locations, CN1 and CN2, all the monitoring results (daytime) were below the limit level of 75 dB(A).

3.7 All the monitoring results lied within the range of the predicted noise levels in the EIA report.

3.8 Major noise sources during the noise monitoring included the construction activities from the Project and another project under the same contract (concurrent project) carried out in the vicinity and nearby traffic noise.

4. VEGETATION MONITORING

Monitoring Requirement

4.1 As required under Environmental Permit No. EP-235/2005/B, the Permit Holder is required to carry out monitoring of the plant species of conservation interest to check on the health and condition of the plants twice a month during the construction period of the Project.

4.2 It is required to undertake the ecological tasks to fulfill the requirements of the Environmental Permit (EP). As required by Conditions 2.11 and 3.5 of the EP, a suitably qualified ecologist with 7 or more years of relevant experience shall be employed to conduct the ecological monitoring.

Monitoring Location

4.3 The ecological monitoring was carried out for plant individuals of conservation interest identified within the proposed works area.

Monitoring Methodology

4.4 The ecological monitoring was conducted twice in the reporting month on 13 and 20 January 2009 by Ms. Gigi C C Lam, who had over 7 years of relevant ecological experience.

4.5 The plants of conservation interest, which were tagged during the baseline survey, were checked during each monitoring.

Monitoring Results

4.6 Site clearance, soil nailing and scaffolding works were in progress during the monitoring visits. Most of the tagged vegetation has been fenced off and was found to be in good condition during the monitoring visits in January 2009.

4.7 Most of the harden grout from the previous leakage incident in December 2008 covering on the vegetation and soil surface had been removed by the Contractor. Four individuals vegetation of conservation interest tagged as V015, V016, V017 and V018 were lost. It was believed that they were covered by the leaked grout and removed during the cleaning process. To prevent further damage to the tagged vegetation, the Contractor was advised to fenced off the vegetation properly and restrict any unauthorized access of site workers to the area.

4.8 The leaves of vegetation located near the operation area of soil nailing works were covered heavily with dust and were subsequently washed by the Contractor upon request.

5. LANDSCAPE AND VISUAL

Monitoring Requirement

5.1 During the construction phase of the Project, landscape and visual monitoring should be carried out bi-weekly by a Registered Landscape Architect (RLA) to check if the design, implementation and maintenance of the landscape and visual mitigation measures are fully realized. A detailed report is annexed in Appendix J.

Summary of Inspection – 13 January 2009

Matters Arising from Previous Inspections

5.2 The Contractor had removed the pipe sleeves previously stockpiled against the existing tree on site.

5.3 It was still observed that the Contractor had not removed the dead trees, including a tree with rotten trunk at the base located near existing tree T534. The Contractor was recommended to remove all the dead and rotten trees away from the footpath area for safety.

5.4 It was still observed that rectification of many of the tree identification numbers for the existing retained trees were outstanding. The Contractor was reminded to re-instate the tree numbers on existing trees for ease of reference as soon as possible.

5.5 It was noted that compensatory planting proposal for the replacement of dead tree T611 was outstanding. The Contractor was recommended to seek Engineer's agreement on the replacement planting as soon as possible.

5.6 It was noted that the Contractor's clarification of the status of existing trees T516, T517, T666, and T698 located immediately outside of the works boundary was outstanding. The Contractor was reminded to provide necessary information as soon as possible.

Protection of Existing Trees

5.7 It was observed that rocks from broken-up boulders were placed against an existing tree on slope. The Contractor was requested to urgently remove the rocks away from the tree to prevent permanent damage.

Recommendations

5.8 The Contractor was recommended to clear and remove dead / rotten trees from site for safety.

5.9 The Contractor was reminded to rectify all ineligible tree identification numbers for all existing trees.

5.10 The Contractor was recommended to clarify the status of missing trees as soon as possible.

5.11 The Contractor was recommended to seek Engineer's agreement on the replacement planting for dead tree.

5.12 The Contractor was recommended to clear the rocks away from existing tree and not to pile rocks against trees in future.

Summary of Inspection – 20 January 2009

Matters Arising from Previous Inspections

5.13 The Contractor had cleared away the rocks previously found placed against existing tree.

5.14 It was still observed that the Contractor had not removed the dead trees, including a tree with rotten trunk at the base located near existing tree T534. The Contractor was recommended to remove all the dead and rotten trees away from the footpath area for safety.

5.15 It was still observed that rectification of many of the tree identification numbers for the existing retained trees were outstanding. The Contractor was reminded to re-instate the tree numbers on existing trees for ease of reference as soon as possible.

5.16 It was noted that compensatory planting proposal for the replacement of dead tree T611 was outstanding. The Contractor was recommended to seek Engineer's agreement on the replacement planting as soon as possible.

5.17 It was noted that the Contractor's clarification of the status of existing trees T516, T517, T666, and T698 located immediately outside of the works boundary was outstanding. The Contractor was reminded to provide necessary information as soon as possible.

Protection of Existing Trees

5.18 It was observed fine dust from the soil nail drillings works had been deposited on trees. The Contractor was reminded to hose down the trees on a regular basis to prevent adverse affects on tree growth in future.

Recommendations

5.19 The Contractor was reminded to hose down the fine dust from trees as soon as possible.

5.20 The Contractor was reminded to rectify all ineligible tree identification numbers for all existing trees.

5.21 The Contractor was recommended to remove dead / rotten trees from site for safety. The Contractor was also reminded to record and report all dead trees as found on site to the Engineer for record.

5.22 The Contractor was recommended to clarify the status of missing trees as soon as possible.

5.23 The Contractor was recommended to seek Engineer's agreement on the replacement planting for dead tree.

Next Landscape and Visual Audit Schedule

5.24 The landscape and visual audits in the next reporting month was tentatively scheduled to 10 and 24 February 2009.

6. ENVIRONMENTAL SITE INSPECTION AND AUDIT

Site Inspection

6.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. In the reporting month, 3 site inspections were carried out on 6, 13 and 20 January 2009. Site inspection in the week of 27 January 2009 was called off due to Chinese New Year holiday and no construction activity being carried out. The detail findings of the landscape and visual audits in the reporting month are presented separately in Section 5. The environmental site inspection summaries are attached in Appendix K. Particular observations are described below.

Air Quality

6.2 No adverse observation was identified in the reporting month.

Noise

6.3 No adverse observation was identified in the reporting month.

Water Quality

6.4 Muddy water was observed running down the slope at BA11. The Contractor was advised to provide sand bag bundings as primary desilting facility at the slope.

Chemical and Waste Management

6.5 A chemical container at Row AQ and soil nail installation controllers at Row AR and Row K were observed placed on ground without drip tray. The Contractor was reminded to provide drip tray to all chemical containers and plants on site.

6.6 Some cement slurry was observed on the platform of Pullout 16 and observed dripping to the slope below. The Contractor was requested to properly clean up the slurry.

Ecology

6.7 Four individuals tagged vegetation of conservation interest (V015, V016, V017 and V018) were lost. To protect the tagged vegetation of conservation interest, the Contractor was advised to fence off the tagged individual plants properly and strictly restrict the unauthorized access of the site workers to the area.

6.8 Muddy runoff was observed running down a slope along the bank of a dried-up hill stream near BA11. The Contractor was advised to add sand bag bundings for desilting, and direct the runoff towards silt trap facilities.

Landscape and Visual

6.9 It was still observed that the Contractor had not removed the dead trees, including a tree with rotten trunk at the base located near existing tree T534. The Contractor was recommended to remove all the dead and rotten trees away from the footpath area for safety.

6.10 It was still observed that rectification of many of the tree identification numbers for the existing retained trees were outstanding. The Contractor was reminded to re-instate the tree numbers on existing trees for ease of reference as soon as possible.

6.11 It was noted that compensatory planting proposal for the replacement of dead tree T611 was outstanding. The Contractor was recommended to seek Engineer's agreement on the replacement planting as soon as possible.

6.12 It was noted that the Contractor's clarification of the status of existing trees T516, T517, T666, and T698 located immediately outside of the works boundary was outstanding. The Contractor was reminded to provide necessary information as soon as possible.

6.13 It was observed that rocks from broken-up boulders were placed against an existing tree on slope. The Contractor was requested to urgently remove the rocks away from the tree to prevent permanent damage.

6.14 It was observed fine dust from the soil nail drillings works had been deposited on trees. The Contractor was reminded to hose down the trees on a regular basis to prevent adverse affects on tree growth in future.

Assessment of Environmental Monitoring Results

6.15 All monitoring results were audited against the Action / Limit levels and any exceedance would be validated and issued when necessary.

6.16 The monitoring results in the reporting period were comparable with the EIA predictions. Detailed discussions are given in Section 2 and 3.

Advice on the Solid and Liquid Waste Management Status

6.17 The Contractor is registered as a chemical waste producer for this Project. The Chemical Waste Storage Area located at the Contractor's site office area was properly maintained in the reporting month.

6.18 As advised by the Contractor, 6.27 ton of non-inert C&D waste was disposed offsite to SENT landfill in the reporting month. C&D waste generated was reused on site as much as possible.

Environmental Licenses and Permits

6.19 The environmental licenses and permits for this Project and valid in the reporting month is summarized in Table 6.1.

Table 6.1 Summary of Environmental Licensing and Permit Status

Description	Permit No.	Valid Period		Remarks
		From	To	
Environmental Permit	EP-235/2005/B	23/11/07	--	- Installation of about 700 nos. of soil nails and about 60 nos. of raking drains in the natural terrain; - Rock slope stabilisation works at upper portion of the natural terrain; and - Other associated works.
Registration as a Chemical Waste Producer	5213-141-C3250-02	13/12/06	--	Spent lubricating oil and mineral oil
Effluent Discharge License	EP880/W10/XX0261	07/11/06	31/12/11	--
Notification of	001012125	18/07/06	--	--

Constriction Work under APCO (Construction Dust)				

Implementation Status of Environmental Mitigation Measures

6.20 In response to the site audit findings, the Contractor carried out corrective actions.

6.21 A summary of the Implementation Schedule of Mitigation Measures (EMIS) is presented in Appendix C. Most of the necessary mitigation measures were implemented properly.

Summary of Exceedances of the Environmental Quality Performance Limit

6.22 All 1-hour TSP, 24-hour TSP and noise monitoring results complied with the Action / Limit levels.

6.23 No exceedance was recorded in the reporting month.

Summary of Complaints, Notification of Summons and Successful Prosecutions

6.24 The Environmental Complaint Handling Procedure is annexed in Figure 6.1.

6.25 No environmental complaint, notification of summons and successful prosecutions was received in the reporting month.

7. FUTURE KEY ISSUES

Construction Programme for the Coming Months

7.1 The construction programme for the Project is provided in Appendix B.

7.2 The major construction work in February 2009 will be:

- Soil nailing works at Portion B2;
- Construction of soil nail heads at Portion A2 and Portion B1; and
- Rock slope stabilization works at Portion B2, Portion C and Portion D.

Key Issues for Coming Month

7.3 Key issues to be considered in the coming month included:
- Sufficient dust suppression measures should be maintained;
- Collection of construction waste should be carried out regularly;
- Site runoff should be properly collected and treated prior to discharge;
- Construction activities should avoid causing damage to the trees and to plants species of conservation interest; and
- Quieter powered mechanical equipment should be used.

7.4 The following mitigation measures are required:

Air Quality Impact
- Regular watering should be used during soil nailing;
- Dusty material stockpiled should be completely covered;
- Dusty activities should be re-scheduled if high-wind conditions encountered;
- Open burning should be strictly prohibited;
- All dusty vehicle loads transporting to, from and between site locations should be covered with tarpaulin;
- Vehicle wheel and body washing facilities should be used at all exit points of the site;
- Wind shield, dust extraction units or water spraying should be used at the loading points.

Construction Noise Impact
- Quieter powered mechanical equipment should be used;
- Insulating fabric should be used for drill rigs during drilling process;
- Noise generating construction works should be carried out during daytime only;
- Noise barriers or other measures should be used to minimize disturbance to the bat roost;
- Plant on site should be properly maintained and serviced regularly;
- Mobile plants should be sited as far from NSRs as possible;
- Machines and plant in intermittent use should be throttled down;
- Strong noise emitting plants, wherever possible, should be oriented so that noise is directed away from the nearby NSRs;
- Material stockpiles, wherever possible, should be effectively utilized to screen noise from construction activities;
- Movable noise barrier with surface mass in excess of 7kg/m^2 should be used for PME wherever possible;
- Noise insulating fabric should be adopted for drill rig operating in Works Area E.

Water Quality Impact
- Prevent runoff water from entering the nearby water-bodies;
- Silt traps and oil / grease separators should be regularly cleaned and maintained;
- Outlet pipe extending above the slope surface should be installed;
- Air should be used as the flushing medium of the drilling equipment;
- Earth bunds or sand bag barriers should be provided on-site to direct storm water to silt removal facilities;

- Exposed slope / soil surface and opened stockpile of more than 50m^3 should be covered with tarpaulin;
- Oils and fuels should be used and stored in designated area.

Chemical and Waste Management
- Debris and rubbish on-site should be collected, handled and disposed of properly;
- Waste skips should be provided to collect general refuse and construction wastes;
- Soil contamination with fuel leaked from construction plants should be removed off-site;
- Sufficient waste disposal points with regular collection should be provided;
- Appropriate measures should be provided to minimize windblown litter and dust during transportation of waste;
- Different containers should be used to segregate and store different types of waste;
- Encourage collection of aluminum cans, PET bottles and paper by providing separate bins;
- Unused chemicals should be recycles wherever possible;
- Proper storage and site practices should be adopted to minimize the potential for damage and contamination of construction materials;
- Oils and fuels should be stored in designated area;
- Plan and stock construction materials carefully to minimize waste generation.

Ecological Impact
- Soil nail installation should avoid / minimize damage of root system to the existing plants;
- Fences should be erected along the boundary of the works area
- Disturbance to the natural woodland and shrubland habitats should be minimized by preventing tipping, vehicle movements and encroachment of personnel onto the adjacent area;
- Permanent casing should be provided to the drillhole of soil nail;
- Placement of equipment or stockpile should be located in designated areas to minimize disturbance to natural or moderate-high ecological value habitats;
- Construction activities should be restricted to works areas;
- Disturbance to existing vegetation should be minimized wherever possible.

Landscape and Visual Impact
- Designation of “no-intrusion zones” and record any trespass and damage to existing vegetation;
- Soil nails on site should avoid tree trunks and tree roots;
- Dust and erosion control should be provided for exposed soil;
- For tree planting operations, method statement should be checked against specification requirements;
- All retained trees within the working boundary should be checked regularly;
- Control over appearance of hoarding, construction plants / machines;
- Security floodlights should be carefully selected to avoid light pollution.

Monitoring Schedule for the Coming Months

7.5 The tentative schedule for environmental monitoring in February 2009 is provided in Appendix L.

8. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

8.1 The construction phase of the project commenced in April 2008.

8.2 1-hour TSP and 24-hour TSP monitoring was carried out in the reporting month. All monitoring results complied with the action / limit level. No exceedance was recorded.

8.3 All impact daytime noise monitoring results complied with the limit level in the reporting month.

8.4 Environmental site inspections were carried out 3 times in January 2009. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.

8.5 Two landscape and visual audits were carried out in the reporting month. The Contractor was reminded to hose down the fine dust from soil nailing works from trees as soon as possible. The Contractor was also requested to keep rocks and construction materials away from trees to prevent permanent damage to the trees.

8.6 Two ecological audits were carried out in the reporting month. Four individuals of tagged vegetation of conservation interest were lost probably due to the previous incident of grout leakage. The Contractor was reminded to take all necessary actions to prevent the re-occurrence of grout leakage to the surrounding natural environment. All tagged plants of conservation interest in the affected area should be located and fenced off properly with clear sign to avoid any further damage and restrict any unauthorized access of site workers to the area. Proper measures should be taken to avoid excessive muddy runoff from the running down to the natural area near the operation works.

8.7 No environmental complaint, notification of summons and prosecution was received in the reporting month.

Recommendations

8.8 According to the environmental site inspections performed in the reporting month, the following recommendations were provided:

Air Quality Impact
- Soil nail workstations on site should be properly enclosed.

Construction Noise Impact
- Nil

Water Quality Impact
- Sedimentation tanks on site should be properly maintained;
- Site effluent must be collected and treated prior to discharge to public drain;
- U-channels should be kept clear of mud, debris, leaves, construction waste and materials; and
- Soil and exposed earth at all working platforms and slopes should be cleaned up.

Chemical and Waste Management
- Drip trays should be provided to all plants and chemical containers on site;
- Oils and fuels should be stored in designated area;
- Empty chemical containers should be disposed of as chemical waste;
- C&D waste, debris and general refuse on-site should be collected, handled and disposed of properly; and
- Waste skips should be provided to collect general refuse and construction wastes.

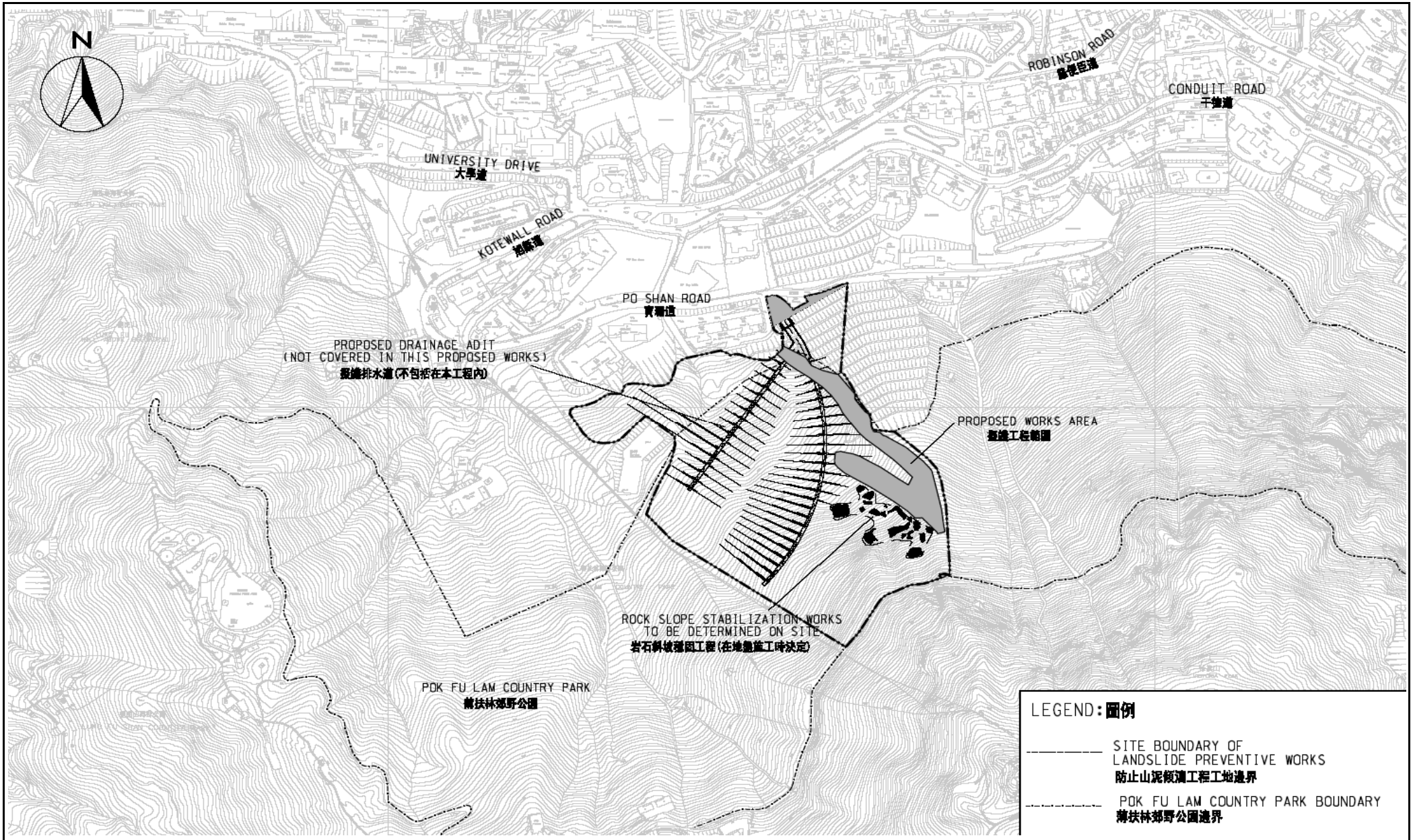
Ecological Impact

- The Contractor was reminded to take all necessary actions to prevent grout leakage to the surrounding natural environment;
- Regular watering should be carried out to wash dust covered on leaves of vegetation;
- All plant species of conservation interest should be fenced off properly with clear sign, especially for those located near major access road and areas likely to be impacted by construction activities; and
- Site runoff should be directed towards regularly cleaned and maintained silt trap facilities to prevent sedimentation impact.

Landscape and Visual Impact

- Dead / rotten trees should be removed from site for safety. The Contractor was also reminded to record and report all dead trees as found on site to the Engineer for record;
- All ineligible tree identification numbers should be rectified for all existing trees;
- The status of missing trees should be clarified as soon as possible;
- Engineer's agreement on the replacement planting for dead tree should be sought;
- Excavated rocks should be kept clear from existing tree and should not be placed against trees in future;
- The pipe stockpile should be kept away from existing tree, and materials and equipment should not be stockpiled against trees on site; and
- Fine dust deposited on trees due to soil nailing works should be hosed down from trees as soon as possible.

FIGURES



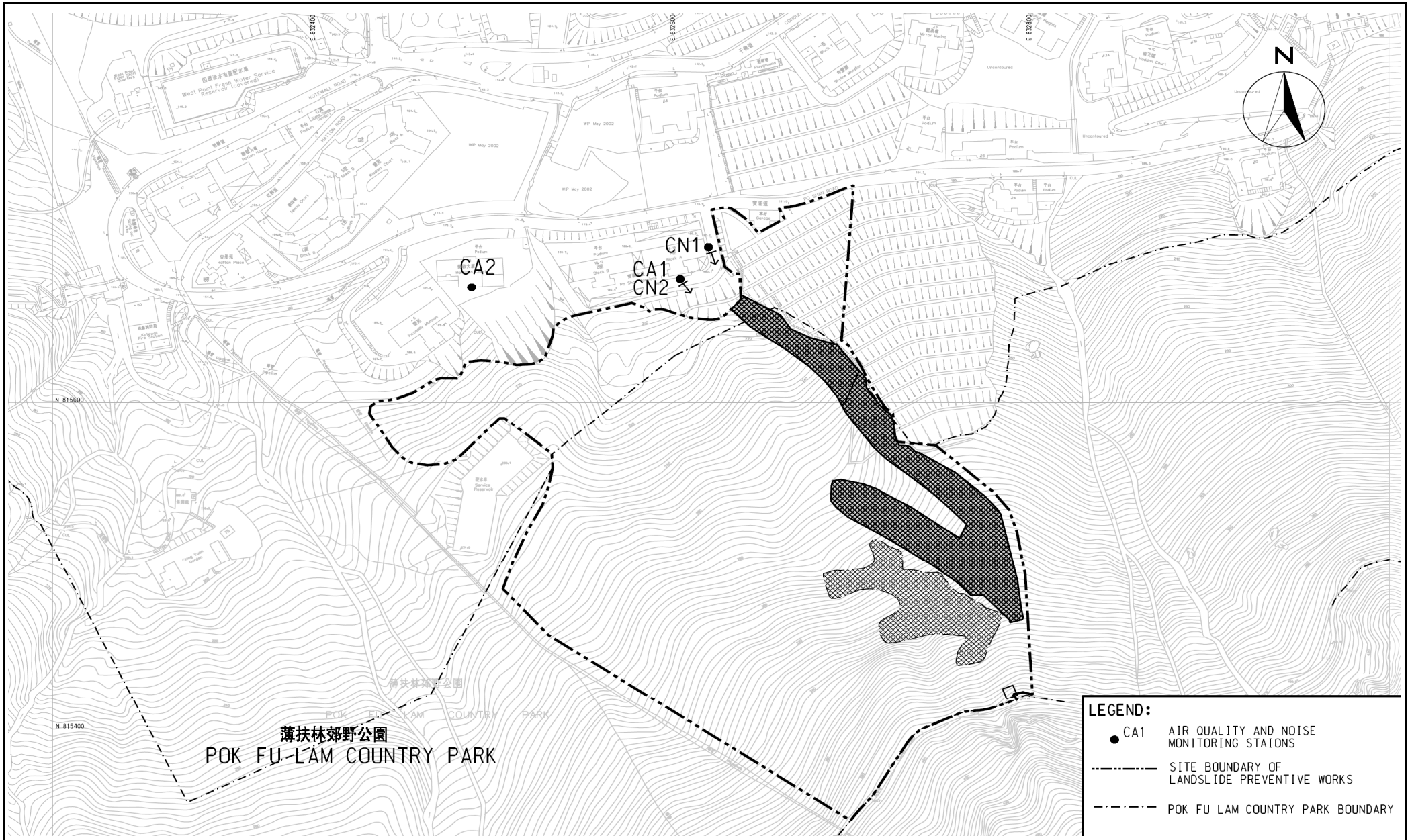
AECOM

ENSR
MAUNSELL
ENSR Asia (HK) Ltd

Agreement NO. CE 28/2004 (GE)
Landslide Preventive Works at Po Shan Road, Mid-Levels
Design and Construction (Natural Terrain Risk Mitigation Works)

Site Layout Plan

SCALE	N.T.S.	DATE	May-08
CHECK	ACYK	DRAWN	FLWY
JOB NO.	60039173	FIGURE No. 1.1	Rev -



AECOM

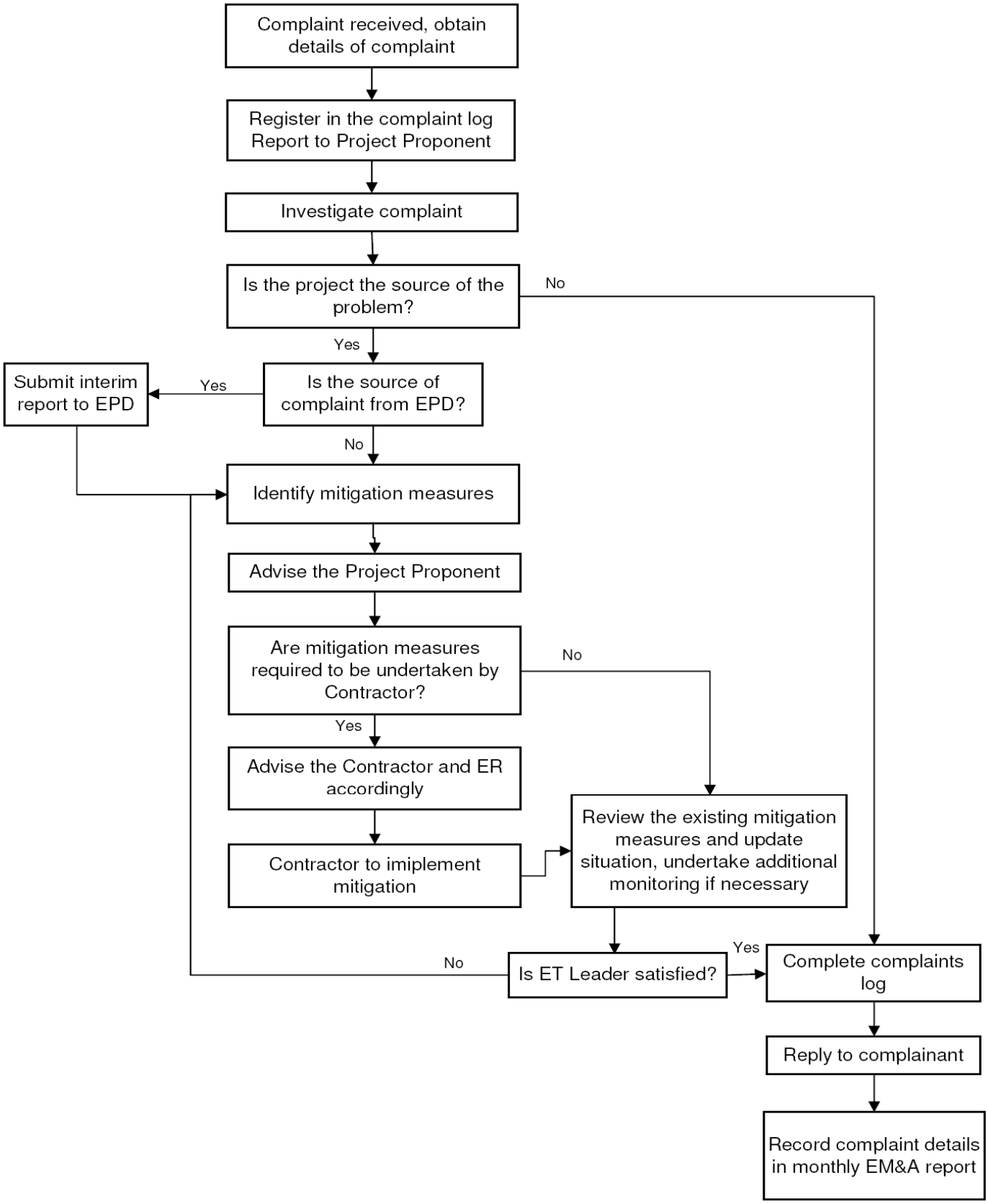
ENSR MAUNSELL

ENSR Asia (HK) Ltd

Agreement NO. CE 28/2004 (GE)
Landslide Preventive Works at Po Shan Road, Mid-Levels
Design and Construction (Natural Terrain Risk Mitigation Works)

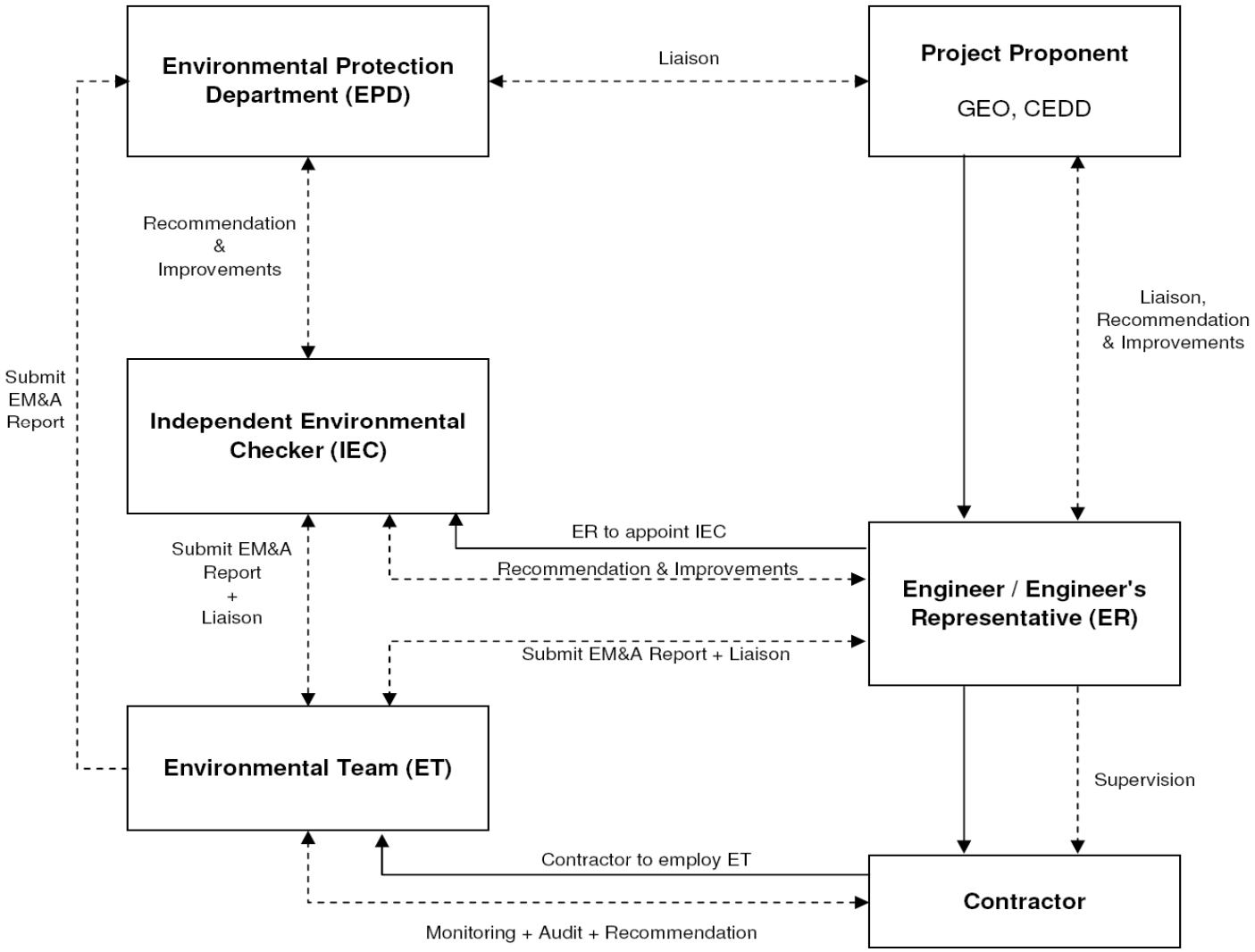
Air Quality and Noise Monitoring Locations

SCALE	N.T.S.	DATE	May-08
CHECK	ACYK	DRAWN	FLWY
JOB NO.	60039173	FIGURE No. 2.1	Rev -



AECOM ENSR MAUNSELL ENSR Asia (HK) Ltd	Contract No. CE 28/2004 (GE) Landslide Preventive Works at Po Shan Road, Mid-Levels - Deisgn and Construction (Natural Terrain Risk Mitigation Works) **Environmental Complaint Handling Procedure**	SCALE	N.T.S.	DATE	2008
		CHECK	ACYK	DRAWN	FLWY
		JOB NO.	60039173	FIGURE 6.1	Rev -

APPENDIX A
PROJECT ORGANIZATION STRUCTURE



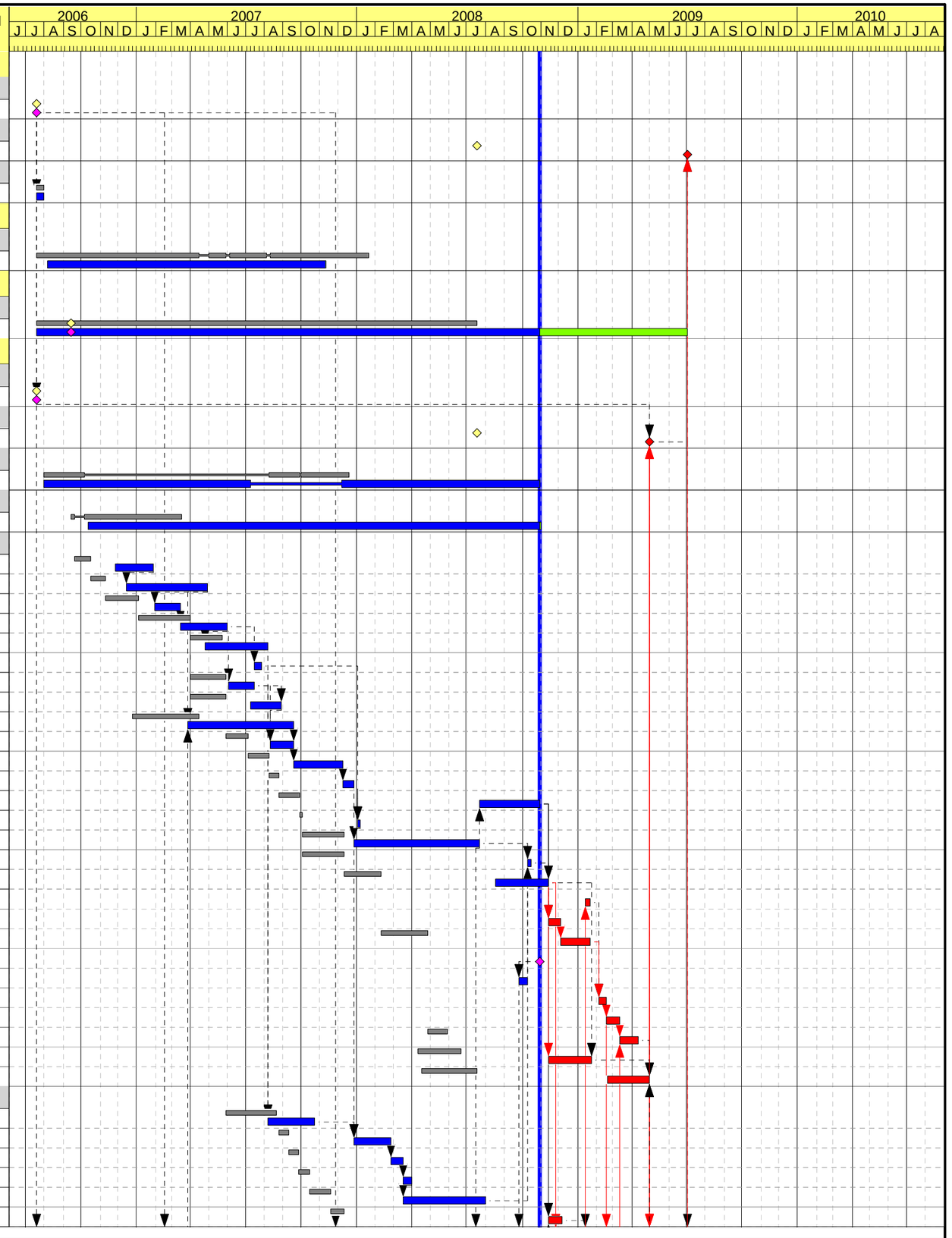
Employment Relationship

Working Relationship

AECOM / ENSR MAUNSELL ENSR Asia (HK) Ltd	Contract No. CE 28/2004 (GE) Landslide Preventive Works at Po Shan Road, Mid-Levels - Deisgn and Construction (Natural Terrain Risk Mitigation Works) **Project Organization Structure**	SCALE	N.T.S.	DATE	2008
		CHECK	ACYK	DRAWN	FLWY
		JOB NO.	60039173	APPENDIX A	Rev -

APPENDIX B
CONSTRUCTION PROGRAMME

Activity ID	Activity Description	Orig Dur	MP1A w 3a Start	MP1A w 3a Finish	Current Start	Current Finish	% Comp	Total Float	Cal ID
General & Preliminary									
Commencement Date									
PRE-1020	Commencement of Works	0	18JUL06A		18JUL06A		100		2
Completion Date									
PRE-1060	Completion of Works	0		10NOV08		02JUL09	0	-192	2
General									
PRE-1040	Site Office Establishment	14	19JUL06A	31JUL06A	19JUL06A	31JUL06A	100		2
Manufacturing & Delivery									
+ General									
		461	07AUG06A	10NOV07A	07AUG06A	10NOV07A	100		2
Instrumentation & Monitoring Works									
+ General									
		899	18JUL06A	10NOV08	18JUL06A	02JUL09	81	505	1
Section 2a - Tunnel & Associated Works									
Commencement Date									
2A-1020	Section Commencement	0	18JUL06A		18JUL06A		100		2
Completion Date									
2A-1040	Section Completion	0		10NOV08		30APR09	0	-129	2
+ Design & Submission									
		822	01AUG06A	14FEB08	01AUG06A		100		2
+ Soil Nail Works									
		628	12OCT06A	26NOV07	12OCT06A	31OCT08	99	44	1
High Tunnel									
HT-C1020	Install Pipe Roof, Grouting & Temp. Soil Nails	21	27NOV06A	27JAN07A	27NOV06A	27JAN07A	100		1
HT-C1040	Construct Temporary Noise Enclosure	21	15DEC06A	28APR07A	15DEC06A	28APR07A	100		1
HT-C1060	Excavate Type A Tunnel (Soft)	45	30JAN07A	13MAR07A	30JAN07A	13MAR07A	100		1
HT-C1080	Excavate Type A Tunnel (Hard)	70	14MAR07A	31MAY07A	14MAR07A	31MAY07A	100		1
HT-C1100	Excavate Low Tunnel Chamber	45	24APR07A	06AUG07A	24APR07A	06AUG07A	100		1
HT-C1110	1st Site Trials of Sub-vert. Drain	2	16JUL07A	27JUL07A	16JUL07A	27JUL07A	100		1
HT-C1120	Excavate Type B2 Starter Tunnel	50	02JUN07A	14JUL07A	02JUN07A	14JUL07A	100		1
HT-C1140	Level & Setup Rail & Track to TBM Excavation	50	09JUL07A	28AUG07A	09JUL07A	28AUG07A	100		1
HT-C1160	Install & T&C of Mucking System	90	26MAR07A	18SEP07A	26MAR07A	18SEP07A	100		1
HT-C1180	Assembly TBM at Portal & Move into High Tunnel	30	10AUG07A	18SEP07A	10AUG07A	18SEP07A	100		1
HT-C1200	Excavate High Tunnel(TBM)(Grouting Allowed)	30	19SEP07A	01DEC07	19SEP07A	08DEC07A	100		1
HT-C1220	Retract TBM & Remove from High Tunnel	14	03DEC07	18DEC07	10DEC07A	27DEC07A	100		1
HT-C1240	Cast Invert of Type B Tunnel (259m)	45	19DEC07	24JAN08	23JUL08A	29OCT08A	100		1
HT-C1260	Remaining Site Trials of Sub-vert. Drains	2	25JAN08	26JAN08	03JAN08A	05JAN08A	100		1
HT-C1280	Install Sub-vert. Drains (99 nos.)	120	28JAN08	07APR08	28DEC07A	22JUL08A	100		1
HT-C1290	Cast Invert of Type A Tunnel (U0+00~U0+22.5)	14	28JAN08	07APR08	10OCT08A	15OCT08A	100		1
HT-C1300	Cast Type B Crown Lining (259m),Drains,etc	60	08APR08	05JUN08	18AUG08A	12NOV08	99	-91	1
HT-C1305	Construct Headwalls at Intersection	6			15JAN09	21JAN09	0	-85	1
HT-C1310	Erection of Type A Crown Lining Formwork	18			13NOV08	03DEC08	0	-91	1
HT-C1320	Cast Type A Crown Lining (U0+00~U0+22.5)	40	06JUN08	22AUG08	04DEC08	21JAN09	0	-91	1
HT-C1325	Lining Design Confirmation (U0+22.5~U0+37.5)	0			31OCT08*		0	505	1
HT-C1330	Cast Invert of Type A Tunnel (U0+22.5~U0+37.5)	18			25SEP08A	09OCT08A	100		1
HT-C1332	Mobilization & Site Trial	10			06FEB09	17FEB09	0	-91	1
HT-C1335	Shotcrete Type A Crown Lining (U0+22.5~U0+37.5)	20			18FEB09	12MAR09	0	-91	1
HT-C1340	Cast Vertical Shaft, Walkway & Drainage	25	23AUG08	23SEP08	13MAR09	10APR09	0	-91	1
HT-C1360	Complete Sub-vert. Drain Connection,Downpipe,etc	60	08AUG08	17OCT08	13NOV08	23JAN09	0	-26	1
HT-C1380	E&M Works & External Works	60	14AUG08	10NOV08	20FEB09	30APR09	0	-102	1
Low Tunnel									
LT-C1020	Excavate Type B2 Starter Tunnel (15m)	70	07AUG07A	22OCT07A	07AUG07A	22OCT07A	100		1
LT-C1040	Reposition TBM for Low Tunnel Excavation	14	19DEC07	05JAN08	28DEC07A	26FEB08A	100		1
LT-C1060	Excavate Low Tunnel(TBM-165m)(Grouting Allowed)	14	07JAN08	22JAN08	26FEB08A	17MAR08A	100		1
LT-C1080	Remove TBM & Track from Low Tunnel	14	23JAN08	07FEB08	18MAR08A	31MAR08A	100		1
LT-C1100	Remove Hopper & Conveyor System	30	08FEB08	13MAR08	18MAR08A	31JUL08A	100		1
LT-C1120	Cast Invert of Type B Tunnel (179m)	20	14MAR08	07APR08	13NOV08	05DEC08	0	-61	1



Start Date	04JUL06
Finish Date	02JUL10
Data Date	31OCT08
Run Date	03NOV08 09:09

?Primavera Systems, Inc.

MP1A
Current
Progress Bar
Critical Activity

MP27

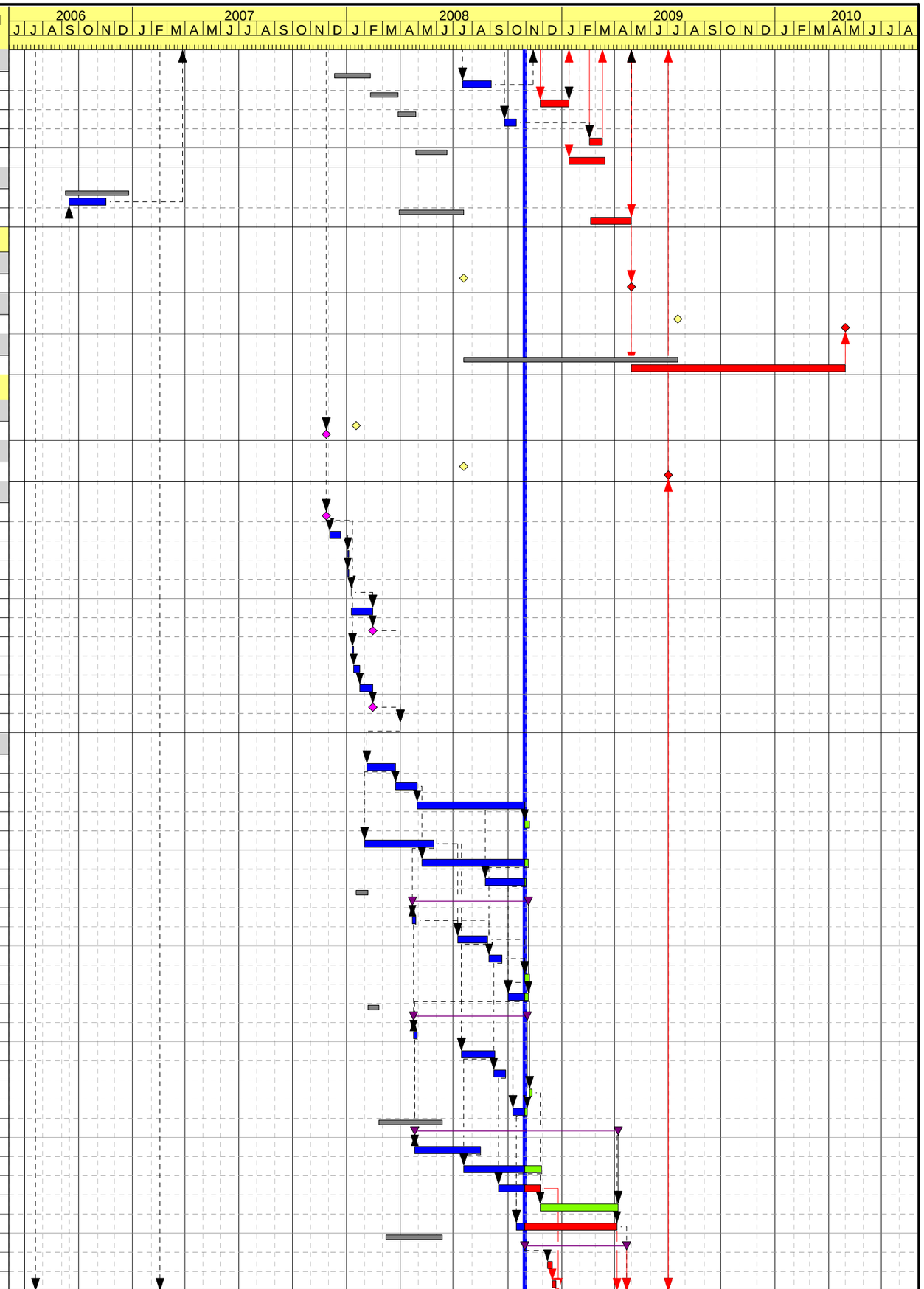
Contract GE/2005/45
Landslide Preventive Works
at Po Shan Road, Mid-Levels
(as at 31 Oct 2008)
Monthly Progress Update

中國建築 — 中國鐵路聯營
CHINA STATE – CHINA RAILWAY JOINT VENTURE

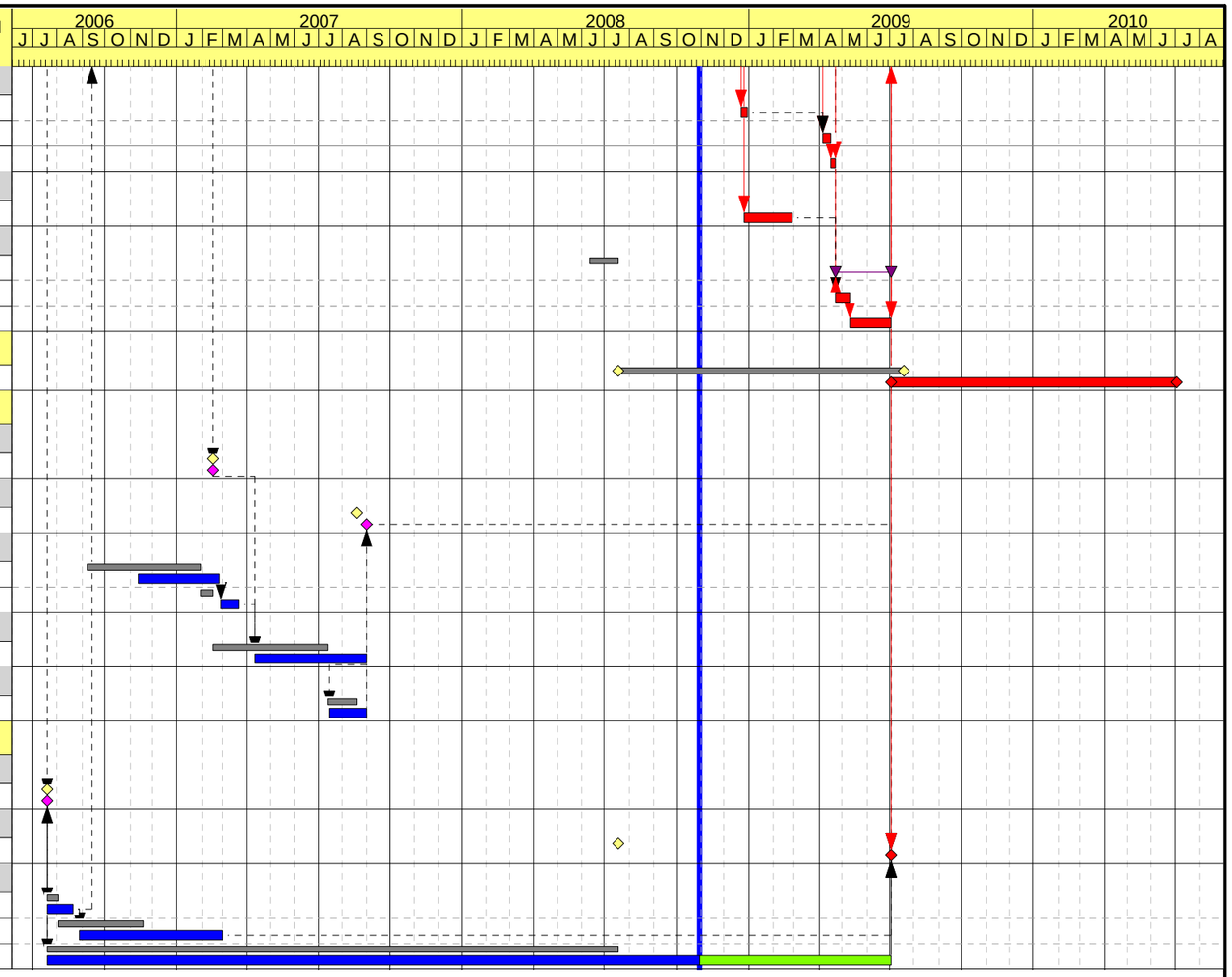
Revisions

Date	Revision	Checked	Approved
31OCT08	For Monthly Progress Report (MP27)	CYM	ET

Activity ID	Activity Description	Orig Dur	MP1A w 3a Start	MP1A w 3a Finish	Current Start	Current Finish	% Comp	Total Float	Cal ID
Low Tunnel									
LT-C1140	Install Sub-vert. Drains (69 nos.)	70	08APR08	05JUN08	17JUL08A	03SEP08A	100		1
LT-C1160	Cast Type B Cown Lining (179m),Drains,etc	40	06JUN08	24JUL08	27NOV08	14JAN09	0	-85	1
LT-C1180	Cast Invert of Type A Tunnel (D0+34~D0+42)	18	25JUL08	22AUG08	25SEP08A	15OCT08A	100		1
LT-C1190	Shotcrete Type A Crown Lining (D0+34~D0+42)	20			18FEB09	12MAR09	0	-91	1
LT-C1200	Complete Sub-vert. Drain Connection,Downpipe,etc	45	23AUG08	15OCT08	15JAN09	16MAR09	0	-63	1
Landscaping Works									
2A-5020	Tree Transplanting (at Portal Entrance)	90	15SEP06A	15NOV06A	15SEP06A	15NOV06A	100		1
2A-5040	Reinstatement & Landscape Works	60	28JUL08	10NOV08	20FEB09	30APR09	0	-102	1
Section 2b - Establishment Works (Tunnel)									
Commencement Date									
2B-1020	Section Commencement	0	11NOV08		01MAY09		0	-129	2
Completion Date									
2B-1040	Section Completion	0		10NOV09		30APR10	0	-129	2
Landscaping Works									
2B-2020	Establishment Works	365	11NOV08	10NOV09	01MAY09	30APR10	0	-129	2
Section 3a - Natural Terrain Risk Mitigation									
Commencement Date									
3A-1020	Section Commencement	0	26NOV07A		26NOV07A		100		2
Completion Date									
3A-1040	Section Completion	0		06APR09		02JUL09	0	-202	2
Vegetation Survey & Baseline Monitoring									
3A-1505	Appointment of Environmental Team (ET)	0	26NOV07A		26NOV07A		100		1
3A-1510	Vegetation Survey - Portion A	18	03DEC07	22DEC07	03DEC07A	20DEC07A	100		1
3A-1515	Vegetation Survey - Portion B	18	24DEC07	15JAN08	03JAN08A	03JAN08A	100		1
3A-1520	Vegetation Survey - Portion C	18	16JAN08	05FEB08	03JAN08A	03JAN08A	100		1
3A-1525	Vegetation Survey - Portion D	18	06FEB08	26FEB08	08JAN08A	08JAN08A	100		1
3A-1530	Preparation of Vegetation Survey Report	20	04FEB08	26FEB08	09JAN08A	13FEB08A	100		1
3A-1535	Submission of Vegetation Survey Report	0		26FEB08		14FEB08A	100		1
3A-1610	Setting up Monitoring Devices	6	17DEC07	22DEC07	11JAN08A	11JAN08A	100		1
3A-1615	Baseline Monitoring	7	23DEC07	29DEC07	12JAN08A	21JAN08A	100		2
3A-1620	Preparation of Baseline Monitoring Report	14	30DEC07	12JAN08	22JAN08A	13FEB08A	100		2
3A-1625	Submission of Baseline Monitoring Report	0		12JAN08		14FEB08A	100		2
3A-1900	EPD Consent on Commencement of Construction	0	27FEB08	11MAR08		31MAR08A	100		2
Soil Nail Works									
3A-2002	Site Clearance/Access Establishment (Portion A)	6	12MAR08	18MAR08	04FEB08A	24MAR08A	100		1
3A-2004	Site Clearance/Access Establishment (Portion B)	6	19MAR08	25MAR08	25MAR08A	28APR08A	100		1
3A-2006	Site Clearance/Access Establishment (Portion C)	6	26MAR08	01APR08	29APR08A	30OCT08	95	505	1
3A-2008	Site Clearance/Access Establishment (Portion D)	6	02APR08	09APR08	31OCT08	06NOV08	0	499	1
3A-2010	Confirmation of Soil Nail Location (Portion A)	6	19MAR08	25MAR08	01FEB08A	27MAY08A	100		1
3A-2012	Confirmation of Soil Nail Location (Portion B)	6	26MAR08	01APR08	09MAY08A	04NOV08	30	501	1
3A-2014	Confirmation of Soil Nail Location (Portion C)	6	02APR08	09APR08	25AUG08A	31OCT08	86	504	1
3A-2020	Installation of Test Nails (21 nos.)	167*	26MAR08	16APR08	21APR08A	05NOV08	97	505	1
3A-2022	Installation of Test Nails (Portion A1)-5 nos.	6	26MAR08	01APR08	21APR08A	26APR08A	100		1
3A-2024	Installation of Test Nails (Portion A2)-5 nos.	6	26MAR08	01APR08	09JUL08A	28AUG08A	100		1
3A-2026	Installation of Test Nails (Portion B1)-2 nos.	6	02APR08	09APR08	30AUG08A	20SEP08A	100		1
3A-2028	Installation of Test Nails (Portion B2)-5 nos.	6	02APR08	09APR08	31OCT08	06NOV08	0	392	1
3A-2030	Installation of Test Nails (Portion C)-4 nos.	6	10APR08	16APR08	02OCT08A	05NOV08	25	500	1
3A-2040	Pull Out Tests for Test Nails (21 nos.)	162*	02APR08	21APR08	24APR08A	03NOV08	98	505	1
3A-2042	Pull Out Test for Test Nails (Portion A1)	4	02APR08	07APR08	24APR08A	29APR08A	100		1
3A-2044	Pull Out Test for Test Nails (Portion A2)	4	02APR08	07APR08	14JUL08A	09SEP08A	100		1
3A-2046	Pull Out Test for Test Nails (Portion B1)	3	10APR08	12APR08	08SEP08A	26SEP08A	100		1
3A-2048	Pull Out Test for Test Nails (Portion B2)	4	10APR08	14APR08	07NOV08	11NOV08	0	392	1
3A-2050	Pull Out Test for Test Nails (Portion C)	4	17APR08	21APR08	10OCT08A	03NOV08	25	502	1
3A-2060	Installation of Permanent Soil Nails (685 nos.)	284*	17APR08	29DEC08	25APR08A	06APR09	56	505	1
3A-2062	Installation of Perm. Nails (Portion A1)-122nos.	70	17APR08	10JUL08	25APR08A	16AUG08A	100		1
3A-2064	Installation of Perm. Nails (Portion A2)-139nos.	80	11JUL08	18SEP08	19JUL08A	27NOV08	70	481	1
3A-2066	Installation of Perm. Nails (Portion B1)-64nos.	58	24OCT08	03DEC08	16SEP08A	26NOV08	61	-115	1
3A-2068	Installation of Perm. Nails (Portion B2)-156nos.	103	19SEP08	29DEC08	27NOV08	06APR09	0	379	1
3A-2070	Installation of Perm. Nails (Portion C)-203nos.	128	20JUN08	23OCT08	16OCT08A	04APR09	2	-162	1
3A-2080	Installation of Raking Drains (51 nos.)	139*	04DEC08	08JAN09	31OCT08	21APR09	0	0	1
3A-2082	Installation of Raking Drains (Portion A1)-13nos	8	04DEC08	12DEC08	08DEC08*	16DEC08	0	-87	1
3A-2084	Installation of Raking Drains (Portion A2)-7nos.	5	13DEC08	18DEC08	17DEC08	22DEC08	0	-87	1



Activity ID	Activity Description	Orig Dur	MP1A w 3a Start	MP1A w 3a Finish	Current Start	Current Finish	% Comp	Total Float	Cal ID
Soil Nail Works									
3A-2086	Installation of Raking Drains (Portion B1)-8nos.	5	19DEC08	24DEC08	23DEC08	29DEC08	0	-87	1
3A-2088	Installation of Raking Drains (Portion B2)-13nos	8	30DEC08	08JAN09	06APR09	14APR09	0	-162	1
3A-2090	Installation of Raking Drains (Portion C)-10nos.	6	26DEC08	02JAN09	15APR09	21APR09	0	-162	1
Rock Slope Stabilization Works									
3A-2095	Rock Slope Stabilization Works	45	10APR08	19JUN08	26DEC08	25FEB09	0	-115	1
Landscaping Works									
3A-2100	Slope Reinstatement Works	60*	09JAN09	06APR09	22APR09	02JUL09	0	-162	1
3A-2105	Assessment & Advise by Ecologist	15	09JAN09	26JAN09	22APR09	09MAY09	0	-162	1
3A-2110	Compensatory Planting	45	27JAN09	06APR09	11MAY09	02JUL09	0	-162	1
+ Section 3b - Establishment Works (Natural Terr.)									
		365	07APR09	06APR10	03JUL09	02JUL10	0	-202	2
Section 4 - Flexible Barrier & Associated Works									
Commencement Date									
04-1020	Section Commencement	0	17FEB07A		17FEB07A		100		2
Completion Date									
04-1040	Section Completion	0		31AUG07A		31AUG07A	100		2
Design & Submission									
04-2020	Design and Submit Proposal for Flexible Barrier	120	13NOV06A	24FEB07A	13NOV06A	24FEB07A	100		1
04-2040	Approval by Engineer (Flexible Barrier)	14	26FEB07A	20MAR07A	26FEB07A	20MAR07A	100		1
Flexible Barrier									
04-3020	Installation of Flexible Barrier	123	10APR07A	31AUG07A	10APR07A	31AUG07A	100		1
Landscaping Works									
04-3040	Slope Reinstatement Works	30	16JUL07A	31AUG07A	16JUL07A	31AUG07A	100		1
Section 5 - Preservation & Protection of Trees									
Commencement Date									
05-1020	Section Commencement	0	18JUL06A		18JUL06A		100		2
Completion Date									
05-1040	Section Completion	0		06APR09		02JUL09	0	-192	2
Landscaping Works									
05-2015	Sub-Contracting for Landscape Works	14	18JUL06A	19AUG06A	18JUL06A	19AUG06A	100		1
05-2020	Carry Out Existing Tree Survey	90	29AUG06A	28FEB07A	29AUG06A	28FEB07A	100		1
05-2040	Regular Preservation and Protection of Trees	1,081*	18JUL06A	06APR09	18JUL06A	02JUL09	77	610	2



APPENDIX C
IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES (EMIS)

Implementation Schedule of Environmental Mitigation Measures

Environmental Mitigation Measures	Location	Implementation Status
Construction Noise Impact		
No more than 6 drill rigs operating at the same time in Works Areas E and F. No more than two drill rigs operating in Works Area E.	Area E and F	V
Noise insulating fabric has to be applied for drill rigs operating in Works Area E.	Area E	V
A number of four air compressors used. Two at Works Area A and two at Works Area G.	Area A and G	V
A number of three grouting machines used. One at Works Area A and two at Works Area G.	Area A and G	V
A number of two generators used. One at Works Area A and one at Works Area G.	Area A and G	V
A number of three concrete mixers used. One at Works Area A and two at Works Area G.	Area A and G	V
Moveable Noise Barrier has to be applied for the concrete mixer operating in Works Area A.	Area A	V
Noise Enclosures have to be applied for the air compressors, grouting machine and generator operating in Works Area A.	Area A	V
Construction Air Quality Impact		
Covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.	All works area	V
Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.	All works area	V
Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	All works area	V
Use of vehicle wheel and body washing facilities at the exit points of the site.	Site exits	N/A
Dusty activities should be re-scheduled if high-wind conditions are encountered.	All works area	N/A
Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All works area	V

Construction Water Quality Impact		
Provision of perimeter drains to intercept storm-runoff from outside the works area. These shall be constructed in advance of site formation works and earthworks. Earth bunds or sand bag barriers should be provided on-site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the Contractor prior to the commencement of construction.	Site drainage system	V
Sand/silt removal facilities such as sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the Technical Memorandum standard under the Water Pollution Control Ordinance. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. The detailed design of the sand/silt traps will be undertaken by the Contractor prior to the commencement of construction.	Site drainage system	V
Air would be used as the flushing medium of the drilling equipment to avoid the groundwater being affected by the flushing medium. In addition, permanent casing may be provided to the drillhole of soil nail within the permeable colluvium layer as instructed by the Engineer to minimize the impact to the groundwater table situated at the permeable soil stratum.	All works area	V
An outlet pipe extending above the slope surface would be installed to facilitate collection of discharge of air, water and grout from the drillhole inserted with soil nail during grouting.	All works area	V
All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	Site drainage system	V

Exposed slope/soil surface should be covered by tarpaulin as soon as possible to reduce the potential of soil erosion. Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. Other measures that need to be implemented before, during and after rainstorms are summarized in ProPECC PN 1/94.	All works area	V
Open stockpiles of construction materials or construction wastes on-site of more than $50m^3$ should be covered with tarpaulin or similar fabric during rainstorms.	All works area	V
Waste Management		
Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	All works area	V
Training of site personnel in proper waste management and chemical waste handling procedures.	All works area	V
Provision of sufficient waste disposal points and regular collection for disposal.	All works area	V
Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	All works area	V
Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	Site Drainage System	N/A
Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	All works area	V
Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.	Designated collection point(s)	V
Any unused chemicals or those with remaining functional capacity shall be recycled.	All works area	V
Proper storage and site practices to minimize the potential for damage or contamination of construction materials.	All works area	@
Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.	All works area	V

Ecological Impact		
The location of the soil nail installation should be carefully selected and adjusted on-site to avoid/minimize the damage of root system to the existing plants on slope surface. No tree felling is required.	All works area	V
Fences should be erected and installed along the boundary of the proposed works area before the commencement of works in order to minimize the disturbance to the natural woodland and shrubland habitats by preventing tipping, vehicle movements and encroachment of personnel onto the adjacent areas.	Boundary of works area	@
A detailed vegetation survey of the affected species of conservation interest should be conducted by a suitably qualified botanist/ecologist with over 7 years relevant experience to identify the affected individuals of the floral species of conservation concern, including but not limited to Small Persimmon, Common Tutcheria, Bird-nest Fern and Chinese Pholidota.	All works area	V
Species of conservation interest should be labeled on site prior to the commencement of works for better protection.	All works area	V
To minimize the indirect impacts to the nearby stream course and drainage culvert. Site runoff control measures mentioned in Section of Construction Water Quality Impact should be implemented. There should be no site runoff and discharge to the nearby stream course and drainage culvert.	All works area	V
Mitigation measures listed in the section Construction Noise Impact should be implemented.	All works area	V
Noise generating construction works should be implemented at daytime only.	All works area	V
Measures such as noise barriers should be used to minimize disturbance to the bat roost identified close to the western side of the works area.	All works area	V
To minimize the construction dust impact to the vegetation within and in vicinity of the proposed works area, the mitigation measures listed in the section Construction Air Quality Impact should be implemented.	All works area	V
Placement of equipment in designated works areas and access routes selected on existing disturbed land to minimize disturbance to natural woodland habitat.	All works area	V

Construction activities would be restricted to the proposed works area that would be clearly demarcated.	All works area	V
The proposed works area should be reinstated immediately after completion of the works.	All works area	N/A
Open burning should be strictly prohibited.	All works area	V
Waste skips should be provided to collect general refuse and construction wastes. The wastes should be disposed of timely and properly off-site.	All works area	V
Any soil contamination with fuel leaked from construction plants should be removed off-site.	All works area	V
Disturbance to existing vegetation should be minimized wherever possible. In particular, adequate protection should be provided for mature trees located within or adjacent to the proposed works area.	All works area	@
Planting of suitable shrubs/herbs, including the Small Persimmon, should be provided within the project area to compensate for the understorey vegetation of the woodland habitats affected by the landslide preventive works.	Designated planting area	N/A
Chinese Fan-palm (*Livistona chinensis*) should be planted near the existing bat roost in the project area to provide suitable habitat for the Short-nosed Fruit Bat after completion of landslide preventive works.	Designated planting area	N/A
For the plant individuals of conservation interest identified within the proposed works area, a specific monitoring programme of the plant individuals of conservation interest identified within the proposed works area during the detailed vegetation survey should be carried out by a suitably qualified local ecologist(s) with over 7 years relevant ecological experience.	All works area	V
Monitoring of the trees, shrubs and herbs should be conducted to check on the health and condition of the plants should be conducted twice a month covering the whole construction period.	All works area	V
Landscape and Visual Impact		
Designate ‘no-intrusion zones’	No-intrusion zone	V
Dust and erosion control for exposed soil	All works area	V
All retained trees should be record photographically at the commencement of Contract, and carefully protected during the construction period.	All works area	V

Allowance for adjustment of soil nails on site for the avoidance of tree trunks and tree roots	All works area	V
Appearance and view consideration: Temporary hoarding barriers shall be sensitively designed, subtle, camouflaged and more 'permeable' so that they fit into the existing country park character	All works area	V
Careful selection of security floodlights to avoid light pollution	All works area	V
Existing topsoil shall be re-used where possible for new planting areas within the project	All works area	V
12 month establishment period for the soft landscape works shall be allowed in the main contract.	All works area	N/A
All excavated area and disturbed area for utilities diversion, temporary road diversion, and pipeline works shall be reinstated to former conditions.	All works area	V
Woodland mix is proposed to screen sensitive views, to match surrounding vegetation, and to provide greenery to the surrounding area.	All works area	V

Legend: V = implemented;

x = not implemented;

@ = partially implemented;

N/A = not applicable

APPENDIX D
ACTION AND LIMIT LEVELS FOR AIR QUALITY AND NOISE

Action and Limit Level

Action and Limit Level for Air Quality Monitoring

Parameter	Monitoring Station	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
1-hour TSP	CA1	309.3	500.0
	CA2	319.6	500.0
24-hour TSP	CA1	166.8	260.0
	CA2	187.0	260.0

Action and Limit Level for Noise Monitoring

Time Period	Action Level	Limit Level
0700 – 1900 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A)
0700 – 2300 hours on public holidays including Sundays and 1900 – 2300 hours on all days		60 dB(A)
2300 – 0700 hours on all days		45 dB(A)

APPENDIX E
CALIBRATION CERTIFICATES

ENSR ASIA (HK) LTD
TSP High Volume Sampler
Field Calibration Report

Station	Access Road to Po Shan Mansions (CA1)	Operator:	Shum Kam Yuen
Cal. Date:	19-Nov-08	Next Due Date:	19-Jan-09
Equipment No.:	A.001.46T	Serial No.	10217

Ambient Condition			
Temperature, Ta (K)	294	Pressure, Pa (mmHg)	766.4

Orifice Transfer Standard Information					
Equipment No.:	1087	Slope, mc	1.6033	Intercept, bc	-0.1734
Last Calibration Date:	20-Sep-08	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	20-Sep-09	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) X - axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	9.8	3.16	2.08	52.0	52.57
13	6.9	2.66	1.76	40.0	40.44
10	5.0	2.26	1.52	34.0	34.37
7	3.8	1.97	1.34	28.0	28.31
5	2.7	1.66	1.14	22.0	22.24

By Linear Regression of Y on X

Slope , mw = 31.7372 **Intercept, bw =** -14.2181

Correlation Coefficient* = 0.9954

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **26.75**

Remarks: _____

QC Reviewer: Joe Fu Signature: Joe Date: 20 Nov 08

ENSR ASIA (HK) LTD
TSP High Volume Sampler
Field Calibration Report

Station	Access Road to Po Shan Mansions (CA1)	Operator:	Shum Kam Yuen
Cal. Date:	16-Jan-09	Next Due Date:	16-Mar-09
Equipment No.:	A.001.46T	Serial No.	10217

Ambient Condition			
Temperature, Ta (K)	291	Pressure, Pa (mmHg)	767.8

Orifice Transfer Standard Information					
Equipment No.:	843	Slope, mc	2.02158	Intercept, bc	-0.02524
Last Calibration Date:	4-Nov-08	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	4-Nov-09	**Qstd = {[DH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) X **- axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	9.9	3.20	1.60	50.0	50.86
13	6.9	2.67	1.33	42.0	42.72
10	5.0	2.27	1.14	34.0	34.58
7	3.8	1.98	0.99	28.0	28.48
5	2.8	1.70	0.85	22.0	22.38

By Linear Regression of Y on X

Slope , mw = **38.6698** **Intercept, bw =** **-9.9425**

Correlation Coefficient* = **0.9946**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

mw x Qstd + bw = IC x [(Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **39.65**

Remarks:

QC Reviewer: Joe Fu Signature: Joe Date: 19 Jan 2009

ENSR ASIA (HK) LTD
TSP High Volume Sampler
Field Calibration Report

Station	Podium oh Hamilton Court (CA2)	Operator:	Shum Kam Yuen
Cal. Date:	19-Nov-08	Next Due Date:	19-Jan-09
Equipment No.:	A.001.15T	Serial No.	10380

Ambient Condition			
Temperature, Ta (K)	294	Pressure, Pa (mmHg)	766.4

Orifice Transfer Standard Information					
Equipment No.:	1087	Slope, mc	1.6033	Intercept, bc	-0.1734
Last Calibration Date:	20-Sep-08	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	20-Sep-09	**Qstd = {[DH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) X - axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	9.8	3.16	2.08	50.0	50.55
13	7.5	2.77	1.84	42.0	42.46
10	5.8	2.43	1.63	34.0	34.37
7	4.2	2.07	1.40	28.0	28.31
5	2.8	1.69	1.16	20.0	20.22

By Linear Regression of Y on X

Slope , mw = **32.9138** **Intercept, bw =** **-18.1886**

Correlation Coefficient* = **0.9978**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

mw x Qstd + bw = IC x [(Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **24.33**

Remarks:

QC Reviewer: Joe Fu Signature: Joe Date: 20 Nov 08

ENSR ASIA (HK) LTD
TSP High Volume Sampler
Field Calibration Report

Station	Podium oh Hamilton Court (CA2)	Operator:	Shum Kam Yuen
Cal. Date:	16-Jan-09	Next Due Date:	16-Mar-09
Equipment No.:	A.001.15T	Serial No.	10380

Ambient Condition			
Temperature, Ta (K)	291	Pressure, Pa (mmHg)	767.8

Orifice Transfer Standard Information					
Equipment No.:	843	Slope, mc	2.02158	Intercept, bc	-0.02524
Last Calibration Date:	4-Nov-08	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	4-Nov-09	**Qstd = {[DH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc**			

Calibration of TSP Sampler

Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	[DH x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) X **- axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	9.8	3.18	1.59	48.0	48.82
13	7.5	2.79	1.39	40.0	40.69
10	5.7	2.43	1.21	34.0	34.58
7	4.2	2.08	1.04	28.0	28.48
5	2.7	1.67	0.84	20.0	20.34

By Linear Regression of Y on X

Slope , mw = 37.5505 **Intercept, bw =** -11.0374

Correlation Coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

mw x Qstd + bw = IC x [(Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]$^{1/2}$= **37.14**

Remarks:

QC Reviewer: Joe Fu Signature: Date: 19 Jan 2009

EQUIPMENT CALIBRATION RECORD

Type: ***Laser Dust Monitor***
Manufacturer/Brand: ***SIBATA***
Model No.: ***LD-3***
Equipment No.: ***A.005.07a***
Sensitivity Adjustment Scale Setting: ***557 CPM***

Operator: *Mike Shek (MSKM)*

Standard Equipment

Equipment: *Rupprecht & Patashnick TEOM®*
Venue: *Cyberport (Pui Ying Secondary School)*
Model No.: *Series 1400AB*
Serial No: Control: *140AB219899803*
Sensor: *1200C143659803* K_o: *12500*
Last Calibration Date*: *12 June 2008*

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *557* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *557* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*14-06-08*	*09:00 - 10:00*	*32.2*	*75*	*0.03113*	*1007*	*16.78*
2	*14-06-08*	*10:00 - 11:00*	*32.4*	*74*	*0.03566*	*1166*	*19.43*
3	*14-06-08*	*11:00 - 12:00*	*32.5*	*74*	*0.03146*	*1025*	*17.08*
4	*14-06-08*	*13:00 - 14:00*	*32.5*	*75*	*0.04583*	*1485*	*24.75*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0018*
Correlation coefficient: *0.9993*

Validity of Calibration Record: *13 June 2009*

Remarks:

QC Reviewer: *Mike Shek* Signature:  Date: 16 June 2008

EQUIPMENT CALIBRATION RECORD

Type: ***Laser Dust Monitor***
Manufacturer/Brand: ***SIBATA***
Model No.: ***LD-3***
Equipment No.: ***A.005.09a***
Sensitivity Adjustment Scale Setting: ***797 CPM***

Operator: *Mike Shek (MSKM)*

Standard Equipment

Equipment: *Rupprecht & Patashnick TEOM®*
Venue: *Cyberport (Pui Ying Secondary School)*
Model No.: *Series 1400AB*
Serial No: Control: *140AB219899803*
Sensor: *1200C143659803* K_o: *12500*
Last Calibration Date*: *12 June 2008*

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *797* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *797* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*15-06-08*	*08:00 - 09:00*	*29.7*	*78*	*0.01928*	*716*	*11.94*
2	*15-06-08*	*09:00 - 10:00*	*29.8*	*79*	*0.02128*	*767*	*12.78*
3	*15-06-08*	*10:00 - 11:00*	*29.8*	*78*	*0.02574*	*885*	*14.75*
4	*15-06-08*	*11:00 - 12:00*	*29.7*	*79*	*0.01953*	*712*	*11.86*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0017*
Correlation coefficient: *0.9359*

Validity of Calibration Record: *14 June 2009*

Remarks:

QC Reviewer: *Mike Shek* Signature: Mike Date: 16 June 2008

EQUIPMENT CALIBRATION RECORD

Type: ***Laser Dust Monitor***
Manufacturer/Brand: ***SIBATA***
Model No.: ***LD-3***
Equipment No.: ***A.005.11a***
Sensitivity Adjustment Scale Setting: ***799 CPM***

Operator: *Mike Shek (MSKM)*

Standard Equipment

Equipment: *Rupprecht & Patashnick TEOM®*
Venue: *Cyberport (Pui Ying Secondary School)*
Model No.: *Series 1400AB*
Serial No: Control: *140AB219899803*
Sensor: *1200C143659803* K_o: *12500*
Last Calibration Date*: *12 June 2008*

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *799* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *799* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*06-07-08*	*10:00 - 11:00*	*29.9*	*81*	*0.01680*	*704*	*11.74*
2	*06-07-08*	*11:00 - 12:00*	*29.8*	*80*	*0.01748*	*738*	*12.30*
3	*06-07-08*	*12:00 - 13:00*	*29.6*	*80*	*0.01537*	*659*	*10.98*
4	*06-07-08*	*13:00 - 14:00*	*29.6*	*80*	*0.01688*	*730*	*12.17*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0014*
Correlation coefficient: *0.9275*

Validity of Calibration Record: *5 July 2009*

Remarks:

QC Reviewer: *Mike Shek* Signature: Mike Date: 7 July 2008

綜合試驗有限公司
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E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533
HKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 08CA0603 01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type I)	,	Microphone
Manufacturer:	RION CO., LTD.	,	RION CO., LTD.
Type/Model No.:	NL-31	,	UC-53A
Serial/Equipment No.:	00320528 / N.007.03A	,	88783
Adaptors used:	-	,	-

Item submitted by

Customer Name:	ENSR ASIA (HK) LTD.
Address of Customer:	Room 1213-1219, Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Rd,Sha Tin, New Territories,HK
Request No.:	-
Date of request:	03-Jun-2008

Date of test: 12-Jun-2008

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	11-Jan-2009	CIGISMEC
Signal generator	DS 360	33873	06-Dec-2008	CEPREI
Signal generator	DS 360	61227	13-Jun-2008	CEPREI

Ambient conditions

Temperature:	(23 ± 2) °C
Relative humidity:	(60 ± 15) %
Air pressure:	(1000 ± 10) hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 12-Jun-2008 **Company Chop:** SOILS AND MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C083543

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Calibrator

Manufacturer : Rion

Model No. : NC-73

Serial No. : 10307223 (N.004.08)

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C083543.

The equipment is supplied by

Co. Name : ENSR Asia (HK) Limited

Address : 11/F., Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Rd., Shatin, N.T.

Date of Issue : 14 July 2008

Certified by : K C Lee

The test equipment used for testing are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

APPENDIX F
AIR QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATION

Impact Air Quality Monitoring Results

1-hour TSP Monitoring Results at Station CA1 (Po Shan Mansions)

Date	Start Time (hh:mm)	1st Hour Conc. (µg/m^3)	2nd Hour Conc. (µg/m^3)	3rd Hour Conc. (µg/m^3)
05-Jan-09	10:15	71.9	66.1	70.3
10-Jan-09	10:45	76.2	77.0	80.1
16-Jan-09	10:02	76.1	76.9	77.4
22-Jan-09	09:24	84.6	84.0	85.5
29-Jan-09	09:31	66.1	65.8	68.1
			Min	65.8
			Max	85.5

1-hour TSP Monitoring Results at Station CA2 (Hamilton Court)

Date	Start Time (hh:mm)	1st Hour Conc. (µg/m^3)	2nd Hour Conc. (µg/m^3)	3rd Hour Conc. (µg/m^3)
05-Jan-09	10:02	62.2	62.7	61.6
10-Jan-09	10:56	75.0	76.5	78.4
16-Jan-09	09:43	67.8	70.7	71.9
22-Jan-09	09:11	79.4	78.7	81.5
29-Jan-09	09:15	66.5	66.0	65.5
			Min	61.6
			Max	81.5

Impact Air Quality Monitoring Results

24-hour TSP Monitoring Results at Station CA1 (Po Shan Mansions)

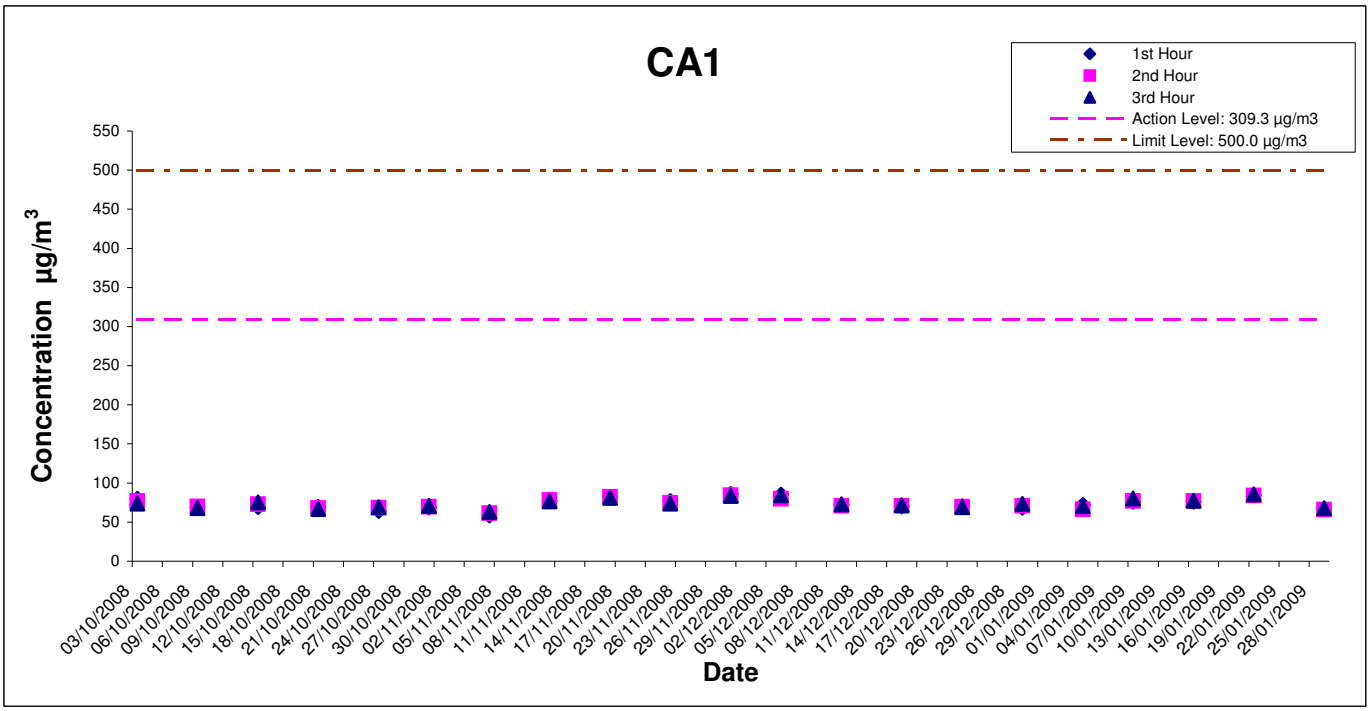
Date	Filter Weight (g)		Flow Rate (m^3/min.)		Elapse Time		Sampling	Conc.	Weather	Air	Atmospheric	Particulate	Av. flow	Total vol.
	Initial	Final	Initial	Final	Initial	Final	Time(hrs.)	($\mu g/m^3$)	Condition	Temp. (^oC)	Pressure(hPa	weight(g)	(m^3/min)	(m^3)
03-Jan-09	3.6211	3.6763	1.31	1.31	13415.28	13439.28	24.00	29.2	Sunny	15.1	1023.2	0.0552	1.31	1890.7
09-Jan-09	3.7583	3.8044	1.37	1.37	13439.28	13463.28	24.00	23.4	Sunny	12.6	1026.0	0.0461	1.37	1972.8
15-Jan-09	3.6684	3.8896	1.34	1.34	13463.28	13487.28	24.00	114.9	Sunny	13.2	1028.2	0.2212	1.34	1925.3
21-Jan-09	3.6153	3.9047	1.33	1.33	13487.28	13511.28	24.00	151.4	Sunny	20.0	1016.9	0.2894	1.33	1910.9
29-Jan-09	3.7640	3.8201	1.31	1.31	13511.28	13535.28	24.00	29.7	Sunny	16.3	1016.5	0.0561	1.31	1890.7

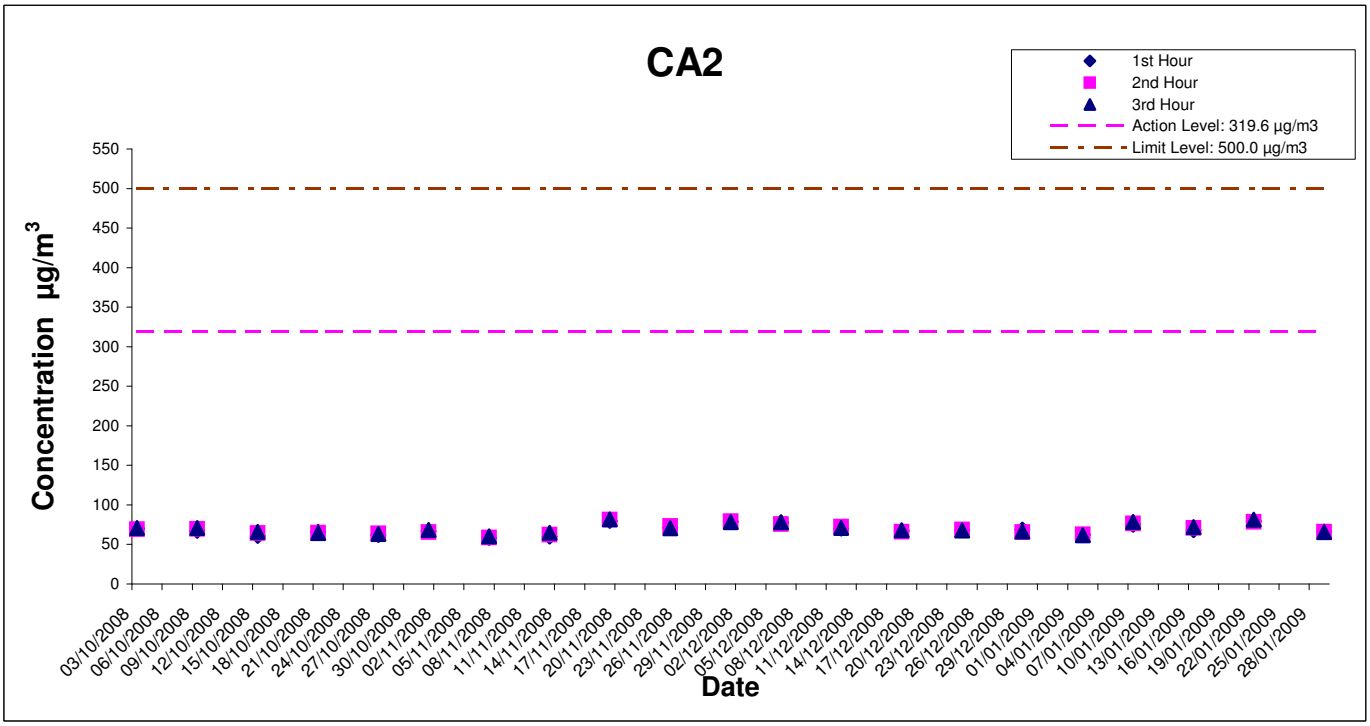
Min	23.4
Max	151.4
Average	69.7

24-hour TSP Monitoring Results at Station CA2 (Hamilton Court)

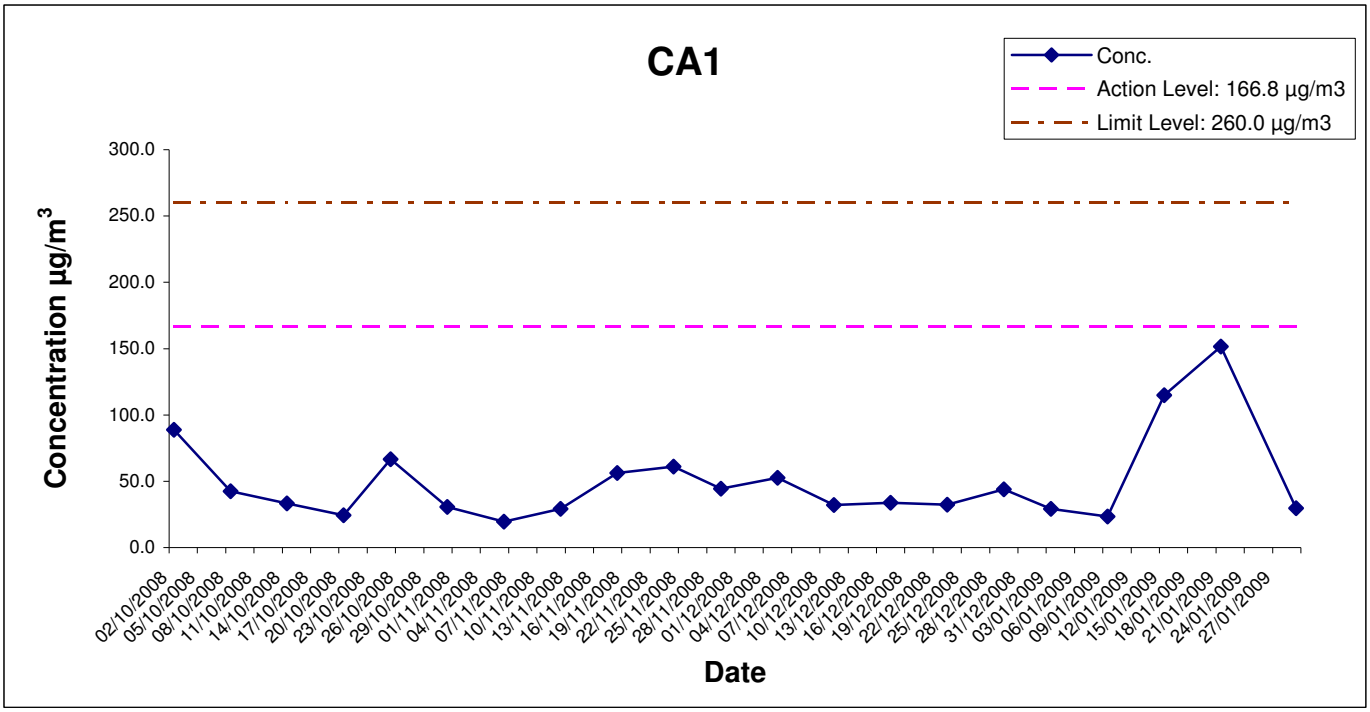
Date	Filter Weight (g)		Flow Rate (m^3/min.)		Elapse Time		Sampling	Conc.	Weather	Air	Atmospheric	Particulate	Av. flow	Total vol.
	Initial	Final	Initial	Final	Initial	Final	Time(hrs.)	($\mu g/m^3$)	Condition	Temp. (^oC)	Pressure(hPa	weight(g)	(m^3/min)	(m^3)
03-Jan-09	3.6182	3.7318	1.30	1.30	13158.90	13182.90	24.00	60.5	Sunny	15.1	1023.2	0.1136	1.30	1876.3
09-Jan-09	3.7513	3.9326	1.31	1.31	13182.90	13206.90	24.00	95.9	Sunny	12.6	1026.0	0.1813	1.31	1890.7
15-Jan-09	3.6667	3.8536	1.31	1.31	13206.90	13230.90	24.00	98.9	Sunny	13.2	1028.2	0.1869	1.31	1890.7
21-Jan-09	3.6131	3.8453	1.31	1.31	13230.90	13254.90	24.00	122.8	Sunny	20.0	1016.9	0.2322	1.31	1890.7
29-Jan-09	3.7664	3.8188	1.30	1.30	13254.90	13278.90	24.00	27.9	Sunny	16.3	1016.5	0.0524	1.30	1876.3

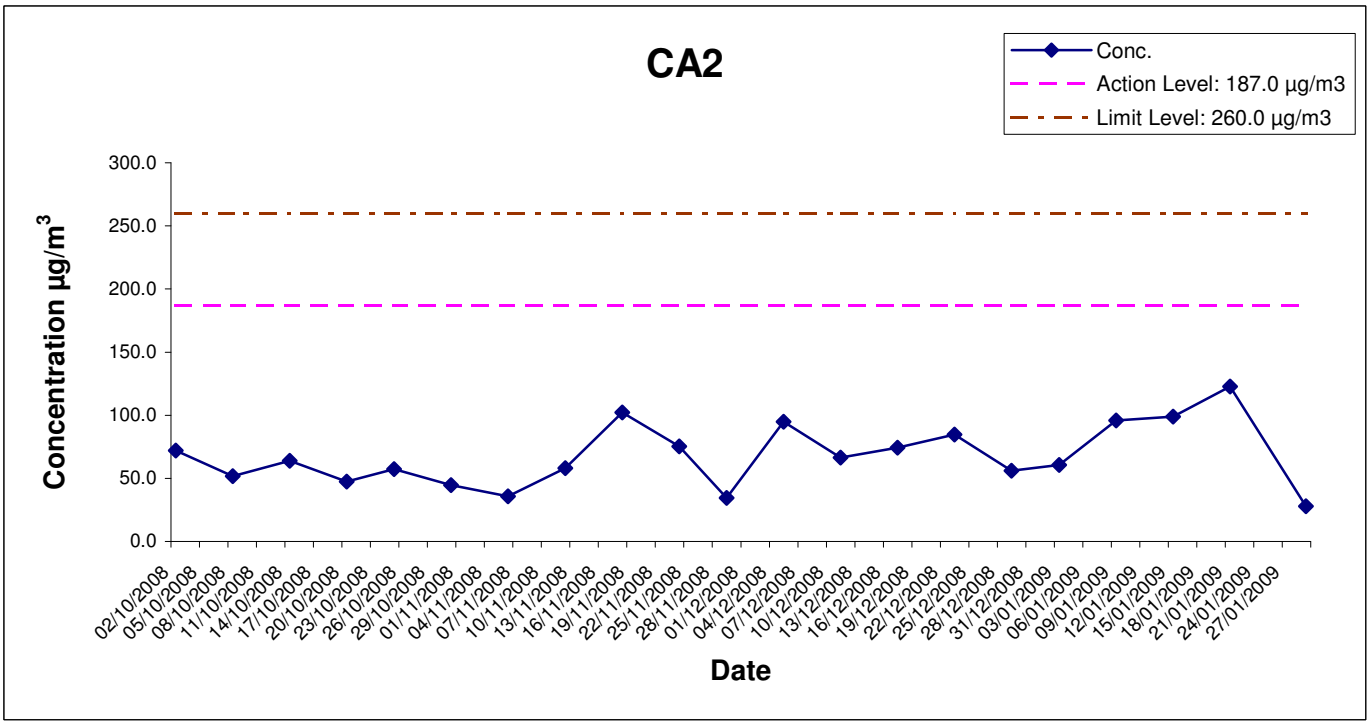
Min	27.9
Max	122.8
Average	81.2





AECOM ENSR MAUNSELL ENSR Asia (HK) Ltd	Impact Monitoring for Landslide Preventive Works at Po Shan Road, Mid-levels Design and Construction (Natural Terrain Risk Mitigation Works) **Graphical Presentation of 1-hour TSP Monitoring Results**	SCALE	N.T.S.	DATE	Feb-09
		CHECK	ENFL	DRAWN	RWHW
		JOB NO.	60039173	APPENDIX F	Rev -





AECOM ENSR MAUNSELL ENSR Asia (HK) Ltd	Impact Monitoring for Landslide Preventive Works at Po Shan Road, Mid-levels Design and Construction (Natural Terrain Risk Mitigation Works) **Graphical Presentation of 24-hour TSP Monitoring Results**	SCALE	N.T.S.	DATE	Feb-09
		CHECK	ENFL	DRAWN	RWHW
		JOB NO.	60039173	APPENDIX F	Rev -

APPENDIX G
EVENT ACTION PLAN

Appendix G – Event Action Plan

Event	Action			
	ET	**Contractor**	**ER**	**IEC**
Action Level	1. Identify source. 2. Notify IEC, ER and Contractor. 3. Conduct additional noise monitoring to investigate the causes. 4. Report the investigation results to the IEC, ER and Contractor. 5. Discuss with Contractor for their formulation of remedial measures if the exceedance is related to construction works. 6. Conduct additional monitoring to check mitigation effectiveness.	1. Take immediate action to avoid further exceedance. 2. Submit noise mitigation proposals to ET, ER and IEC. 3. Implement noise mitigation proposals.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Review the analysed results submitted by the ET. 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly. 3. Supervise and confirm in writing the implementation of remedial measures
Limit Level	1. Identify source. 2. Notify EPD, IEC, ER and Contractor. 3. Conduct additional noise monitoring and analyse Contractor's working procedures to determine possible cause of exceedance. 4. Provide interim report to EPD, IEC and ER on the causes and proposed actions to be taken for the exceedances if exceedance is related to construction works 5. Assess effectiveness by additional monitoring and report to EPD, IEC, ER and Contractor the results. 6. If exceedance stops, cease additional monitoring.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to ET, ER and IEC 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.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. 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. Discuss amongst ER, ET and Contractor on the potential remedial actions. 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 3. Supervise and confirm in writing the implementation of remedial measures.

Event Action Level	Action			
	ET	**Contractor**	**ER**	**IEC**
Exceedance for one sample	1. Identify source 2. Notify IEC, ER and Contractor 3. Conduct additional monitoring to investigate the causes. 4. Report the investigation results and if exceedance is due to contractor's construction works to the IEC, ER and Contractor. 5. Increase monitoring frequency to once per 2 days for 24-hour TSP and daily for 1-hour TSP until exceedance stops if exceedances are considered related to contractor's construction works and report the results to IEC, ER and Contractor.	1. Take immediate action to avoid further exceedance and rectify any unacceptable practice. 2. Submit air mitigation proposal to IEC and ER for agreement if ET indicated that exceedance is related to the construction works 3. Implement agreed proposal within a time scale agreed with ER and IEC.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to submit air mitigation proposal. 4. Ensure remedial measures are properly implemented.	1. Review monitoring data and investigation report submitted by ET. 2. Review Contractor's air mitigation proposal and advise the ER accordingly. 3. Supervise and confirm in writing the implementation of remedial measures.
Exceedance for two or more consecutive samples	1. Identify source 2. Notify EPD, IEC, ER and Contractor 3. Conduct additional monitoring to investigate the causes. 4. Report the investigation results and if exceedances are due to contractor's construction works to EPD, IEC, ER and Contractor within 3 working days after additional monitoring. 5. Increase monitoring frequency to daily for 24-hour TSP and 1-hour TSP if exceedances are considered related to contractor's construction works until exceedance stops, and report the results to EPD, IEC, ER and Contractor. 6. If exceedances continue after 1-week monitoring events, request ER to arrange meeting with ER, IEC and contractor to discuss remedial actions.	1. Take immediate action to avoid further exceedance and rectify any unacceptable practice 2. In consultation with the IEC, submit air mitigation proposal to IEC and ER for agreement within 3 working days of notification if ET indicated that exceedances are related to construction works 3. Implement agreed proposal within a time scale agreed with ER and IEC. 4. Amend working methods if appropriate.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to submit air mitigation proposal. 4. Ensure remedial measures are properly implemented.	1. Review monitoring data and investigation report submitted by ET. 2. Discuss amongst ER, ET and Contractor in order to formulate air mitigation proposal. 3. Review Contractor's air mitigation proposal and advise the ER accordingly. 4. Supervise and confirm in writing the implementation of remedial measures.

Event Limit Level	Action			
	ET	**Contractor**	**ER**	**IEC**
Exceedance for one sample	1. Identify source 2. Notify EPD, IEC, ER and Contractor 3. Conduct additional monitoring to investigate the causes. 4. Report the investigation results and if exceedances are due to contractor's construction works to EPD, IEC, ER and Contractor within 3 working days after additional monitoring. 5. Increase monitoring frequency to daily if exceedances are considered related to contractor's construction works until exceedance stops, and report the results to EPD, IEC, ER and Contractor.	1. Take immediate action to avoid further exceedance and rectify any unacceptable practice 2. In consultation with the IEC, submit air mitigation proposal to IEC and ER for agreement within 3 working days of notification if ET indicated that exceedances are related to construction works 3. Implement agreed proposal within a time scale agreed with ER and IEC. 4. Amend working methods if appropriate.	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to submit air mitigation proposal. 4. Ensure remedial measures are properly implemented.	1. Review monitoring data and investigation report submitted by ET. 2. Discuss amongst ER, ET and Contractor in order to formulate air mitigation proposal. 3. Review Contractor's air mitigation proposal and advise the ER accordingly. 4. Supervise and confirm in writing the implementation of remedial measures.
Exceedance for two or more consecutive samples	1. Identify source 2. Notify EPD, IEC, ER and Contractor 3. Conduct additional monitoring to investigate the causes. 4. Report the investigation results and if exceedances are due to contractor's construction works to EPD, IEC, ER and Contractor within 3 working days after additional monitoring. 5. Increase monitoring frequency to daily if exceedances are considered related to contractor's construction works until exceedance stops, and report the results to EPD, IEC, ER and Contractor. 6. If exceedances continue after 2 consecutive monitoring events, request ER to arrange meeting with IEC and contractor to discuss remedial actions.	1. Take immediate action to avoid further exceedance and rectify any unacceptable practice 2. In consultation with the IEC, submit air mitigation proposal to IEC and ER for agreement within 3 working days of notification if ET indicated that exceedances are related to construction works 3. Implement agreed proposal within a time scale agreed with ER and IEC. 4. Amend working methods and proposal if appropriate. 5. Stop relevant portion(s) of works as required by ER, ET and IEC	1. Confirm receipt of notification of failure in writing. 2. Notify Contractor. 3. Require Contractor to submit air mitigation proposal. 4. Ensure remedial measures are properly implemented. 5. If exceedances continue arrange meeting with Contractor, IEC and ET and to consider what portion(s) of works should be further mitigated or have to stop.	1. Review monitoring data and investigation report submitted by ET. 2. Discuss amongst ER, ET and Contractor in order to formulate air mitigation proposal. 3. Review Contractor's air mitigation proposal and advise the ER accordingly. 4. Supervise and confirm in writing the implementation of remedial measures.

APPENDIX H
WEATHER DATA

Extract of Meteorological Observations for Victoria Peak Automatic Weather Station, January 2009

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Jan-01	******	16.3	11.6	8.4	****	***	***	***
Jan-02	******	15.8	11.1	8.6	****	***	***	***
Jan-03	******	14.6	12	9.4	****	***	***	***
Jan-04	******	19.1	14.4	12.1	****	***	***	***
Jan-05	******	17.8	14.5	12.5	****	***	***	***
Jan-06	******	18.3	14.5	12.3	****	***	***	***
Jan-07	******	18.4	14.7	12.4	****	***	***	***
Jan-08	******	17.7	12.6	9.6	****	***	***	***
Jan-09	******	13.2	9.7	6.6	****	***	***	***
Jan-10	******	13.7	9.4	6.3	****	***	***	***
Jan-11	******	15.6	10.2	7.3	****	***	***	***
Jan-12	******	16.1	11.5	8.3	****	***	***	***
Jan-13	******	14.8	10.2	6.9	****	***	***	***
Jan-14	******	14.8	10	7.4	****	***	***	***
Jan-15	******	14.6	10.6	8.3	****	***	***	***
Jan-16	******	15.9	12.2	9.6	****	***	***	***
Jan-17	******	18.1	14.3	11.2	****	***	***	***
Jan-18	******	23.2	17.5	14.2	****	***	***	***
Jan-19	******	20.3	17.1	13.7	****	***	***	***
Jan-20	******	18.1	15.4	13.3	****	***	***	***
Jan-21	******	23.6	18.4	15.3	****	***	***	***
Jan-22	******	22.4	17.8	14.3	****	***	***	***
Jan-23	******	17.1	14.4	10.8	****	***	***	***
Jan-24	******	10.8	8.1	7.2	****	***	***	***
Jan-25	******	12.6	9.9	7.7	****	***	***	***
Jan-26	******	13.4	11.5	9.8	****	***	***	***
Jan-27	******	10.4	9.3	8.3	****	***	***	***
Jan-28	******	17.8	12.2	9.7	****	***	***	***
Jan-29	******	19.7	14.6	12.4	****	***	***	***
Jan-30	******	19.1	14.3	11	****	***	***	***
Jan-31	******	17.1	13.8	11.7	****	***	***	***
Mean	******	16.8	12.8	10.2	****	***	***	***
Maximum	******	23.6	18.4	15.3	****	***	***	***
Minimum	******	10.4	8.1	6.3	****	***	***	***

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Jan-01	0.0	***	*****
Jan-02	0.0	***	*****
Jan-03	0.0	***	*****
Jan-04	0.0	***	*****
Jan-05	0.0	***	*****
Jan-06	0.0	***	*****
Jan-07	0.0	***	*****
Jan-08	0.0	***	*****
Jan-09	0.0	***	*****
Jan-10	0.0	***	*****
Jan-11	0.0	***	*****
Jan-12	0.0	***	*****
Jan-13	0.0	***	*****
Jan-14	0.0	***	*****
Jan-15	0.0	***	*****
Jan-16	0.0	***	*****
Jan-17	0.0	***	*****
Jan-18	0.0	***	*****
Jan-19	0.0	***	*****
Jan-20	0.0	***	*****
Jan-21	0.0	***	*****
Jan-22	0.0	***	*****
Jan-23	0.0	***	*****
Jan-24	0.0	***	*****
Jan-25	0.0	***	*****
Jan-26	0.0	***	*****
Jan-27	0.0	***	*****
Jan-28	0.0	***	*****
Jan-29	0.0	***	*****
Jan-30	0.0	***	*****
Jan-31	0.0	***	*****
Mean	-----	***	*****
Total	0.0	---	-----
Maximum	0.0	---	*****
Minimum	0.0	---	*****

*** unavailable

missing (less than 24 hourly observations a day)

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

APPENDIX I
NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix I Noise Monitoring Results

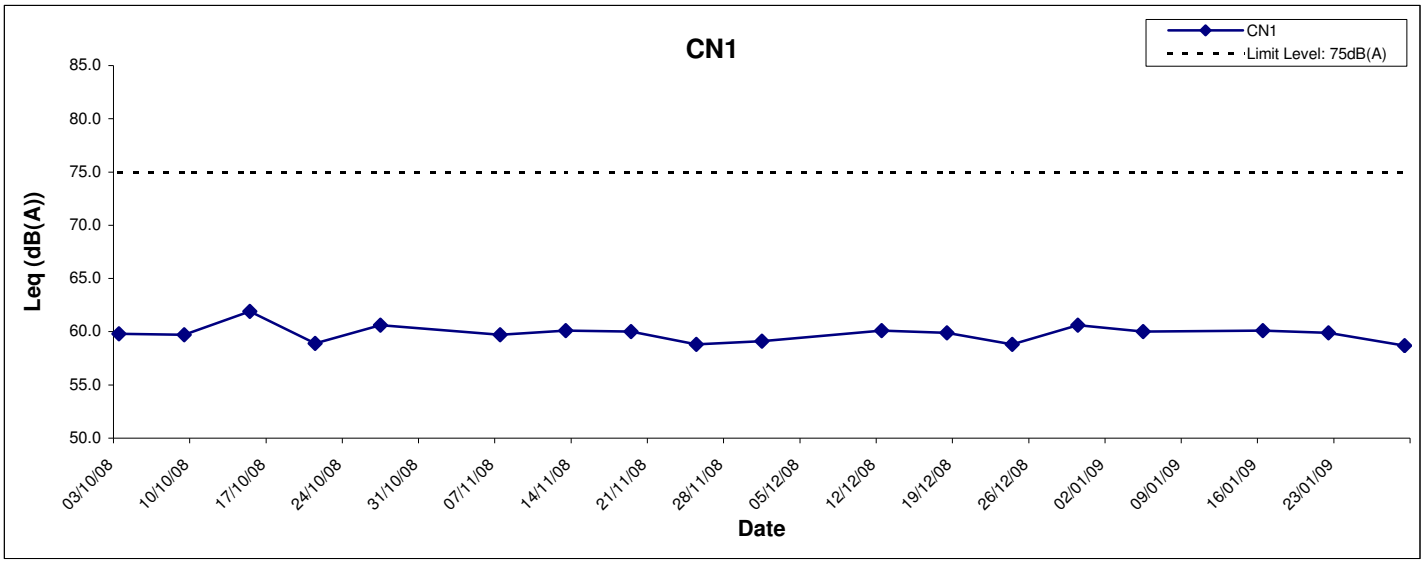
Daytime Noise Monitoring Results at Station CN1

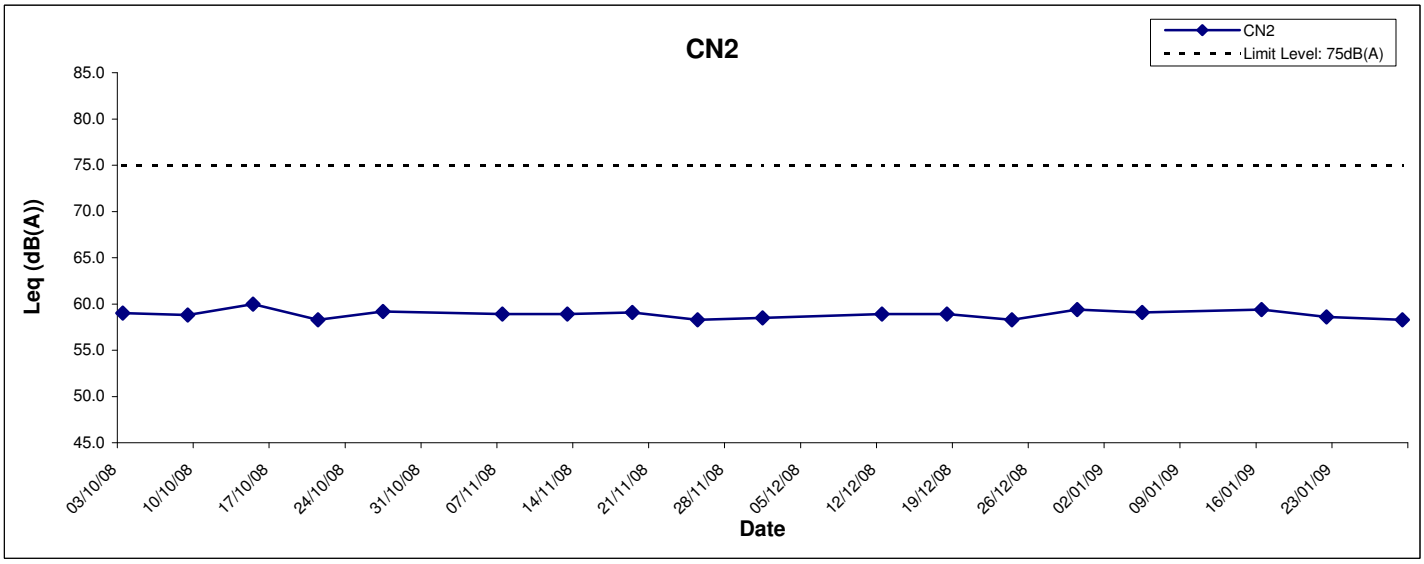
Date	Weather Condition	Noise Level for 30-min, dB(A)+				Baseline Noise Level, dB(A)	Calculated Construction Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
05-Jan-09	Sunny	10:56	57.8	61.9	60.0	72.9	*Note	75	N
16-Jan-09	Sunny	10:08	56.9	62.3	60.1	72.9	*Note	75	N
22-Jan-09	Sunny	09:31	55.6	62.8	59.9	72.9	*Note	75	N
29-Jan-09	Sunny	09:38	55.9	60.1	58.7	72.9	*Note	75	N
		Min	55.6	60.1	58.7				
		Max	57.8	62.8	60.1				
		Average	56.6	61.9	59.7				

Daytime Noise Monitoring Results at Station CN2

Date	Weather Condition	Noise Level for 30-min, dB(A)+				Baseline Noise Level, dB(A)	Calculated Construction Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
05-Jan-09	Sunny	10:21	56.4	60.7	59.1	67.6	*Note	70	N
16-Jan-09	Sunny	10:56	55.7	61.5	59.4	67.6	*Note	70	N
22-Jan-09	Sunny	10:04	54.8	61.7	58.6	67.6	*Note	70	N
29-Jan-09	Sunny	10:10	54.2	59.7	58.3	67.6	*Note	70	N
		Min	54.2	59.7	58.3				
		Max	56.4	61.7	59.4				
		Average	54.3	60.8	58.9				

+ - Façade measurement
Bold & Italic value indicated an Limit level exceedance
Note: Measured noise level is less than the baseline noise level.





AECOM ENSR MAUNSELL ENSR Asia (HK) Ltd	Impact Monitoring for Landslide Preventive Works at Po Shan Road, Mid-levels Design and Construction (Natural Terrain Risk Mitigation Works) **Graphical Presentation of Noise Monitoring Results for Location CN1 and CN2**	SCALE	N.T.S.	DATE	Feb-09
		CHECK	ENFL	DRAWN	RWHW
		JOB NO.	60039173	APPENDIX I	Rev -

APPENDIX J
DETAILED LANDSCAPE AND VISUAL MONITORING REPORT

Agreement No. CE 28/2004 (GE)
Landslide Preventive Works at Po Shan, Mid-Levels
Design and Construction
(Natural Terrain Risk Mitigation Works)

Landscape & Visual Audit and Monitoring

Monthly Inspection Report No. 10

(January 2009)

Prepared by

URBIS LIMITED

Prepared by :	*Tran Tuan Huy*	6th February 2009
Approved by :	*Alexander Dingle*	6th February 2009

1.0 INTRODUCTION

The Landscape and Visual Audit & Monitoring are conducted to fulfill the requirements of the EIA Report during the Construction and Operational Phases of the project, and are based on the procedures and requirements as set out in the Agreement No. CE 28/2004 (GE) Landslide Preventive Works at Po Shan, Mid-Levels – Design and Construction (Natural Terrain Risk Mitigation Works) - Environmental Monitoring and Audit Manual.

As stated in section 3.5 and 3.6 of the EM&A Manual, all landscape and visual mitigation measures undertaken by the Contractor during the construction phase and the first 12 months of the operational phase shall be audited on a bi-weekly and monthly basis respectively to ensure compliance with the intended aims of the mitigation measures.

2.0 SCOPE OF AUDIT and MONITORING

The broad scope of landscape and visual monitoring and audit on mitigation measures is as detailed below:

2.1 Construction Phase

Indentify any potential conflicts between the proposed landscape measures and any other project works or operation requirements, and recorded for the contractor to resolve in early stage, without compromising the intention of the mitigation measures. Also, the followings shall be monitored:

- designation of 'no-intrusion zones', and to record any trespass by the contractor, including damage to existing vegetation;
- allowance for adjustment of soil nails on site for the avoidance of tree trunks and tree roots;
- dust and erosion control for exposed soil;
- tree planting operations, checking method statement against specification requirements;
- all retained trees within the working boundary shall be regularly checked and reported to the engineer, including damage to the tree canopy edge.

Considerations shall also be made to address the appearance and view by public through:

- control over the appearance of construction workers, hoarding, construction plants / machines
- careful selection of security floodlights to avoid light pollution

2.2 Operation Phase

Ensure the compensatory planting and horticultural maintenance operations are properly carried out during the 12 months establishment period, including:

- Inspection for fungal / viral attacks and pest infestations
- Litter collection
- Watering
- Weeding removal
- Replacement of defective planting material
- Grass cutting / groundcover trimming and removal of arisings
- Fertilizing application as required in specification
- Aeration / mulching application

3.0 INSPECTIONS

3.1 Summary of Inspection – 13th January 2009

3.1.1 Matters Arising from Previous Inspections

- The Contractor had removed the pipe sleeves previously stockpiled against the existing tree on site.
- It was still observed that the Contractor had not removed the dead trees, including a tree with rotten trunk at the base located near existing tree T534. The Contractor was recommended to remove all the dead and rotten trees away from the footpath area for safety.
- It was still observed that rectification of many of the tree identification numbers for the existing retained trees were outstanding. The Contractor was reminded to re-instate the tree numbers on existing trees for ease of reference as soon as possible.
- It was noted that compensatory planting proposal for the replacement of dead tree T611 was outstanding. The Contractor was recommended to seek Engineer's agreement on the replacement planting as soon as possible.
- It was noted that the Contractor's clarification of the status of existing trees T516, T517, T666, and T698 located immediately outside of the works boundary was outstanding. The Contractor was reminded to provide necessary information as soon as possible.

3.1.2 Protection of Existing Trees

- It was observed that rocks from broken-up boulders were placed against an existing tree on slope. The Contractor was requested to urgently remove the rocks away from the tree to prevent permanent damage.

3.1.3 Recommendations

- The Contractor was recommended to clear and remove dead / rotten trees from site for safety.
- The Contractor was reminded to rectify all ineligible tree identification numbers for all existing trees.
- The Contractor was recommended to clarify the status of missing trees as soon as possible.
- The Contractor was recommended to seek Engineer's agreement on the replacement planting for dead tree.
- The Contractor was recommended to clear the rocks away from existing tree and not to pile rocks against trees in future.

3.2 Summary of Inspection – 20th January 2009

3.2.1 Matters Arising from Previous Inspections

- The Contractor had cleared away the rocks previously found placed against existing tree.
- It was still observed that the Contractor had not removed the dead trees, including a tree with rotten trunk at the base located near existing tree T534. The Contractor was recommended to remove all the dead and rotten trees away from the footpath area for safety.
- It was still observed that rectification of many of the tree identification numbers for the existing retained trees were outstanding. The Contractor was reminded to re-instate the tree numbers on existing trees for ease of reference as soon as possible.
- It was noted that compensatory planting proposal for the replacement of dead tree T611 was outstanding. The Contractor was recommended to seek Engineer's agreement on the replacement planting as soon as possible.
- It was noted that the Contractor's clarification of the status of existing trees T516, T517, T666, and T698 located immediately outside of the works boundary was outstanding. The Contractor was reminded to provide necessary information as soon as possible.

3.2.2 Protection of Existing Trees

- It was observed fine dust from the soil nail drillings works had been deposited on trees. The Contractor was reminded to hose down the trees on a regular basis to prevent adverse affects on tree growth in future.

3.2.3 Recommendations

- The Contractor was reminded to hose down the fine dust from trees as soon as possible.
- The Contractor was reminded to rectify all ineligible tree identification numbers for all existing trees.
- The Contractor was recommended to remove dead / rotten trees from site for safety. The Contractor was also reminded to record and report all dead trees as found on site to the Engineer for record.
- The Contractor was recommended to clarify the status of missing trees as soon as possible.
- The Contractor was recommended to seek Engineer's agreement on the replacement planting for dead tree.

4.0 AUDIT SCHEULE

4.1 Audit Schedule for February 2009

The next audits are scheduled to be conduct on 10th and 24th February 2009.

APPENDIX K
ET'S SITE INSPECTION SUMMARIES

Site Inspection Summary

Inspection Information

Date:	6 January 2009
Time:	15:00
Inspection No.:	041

Non-compliance

Nil

Observations

Follow Up Observation

1. Chemical containers at Row AN, Row AS and Row AT had been provided with drip trays. However, a soil nail installation controller at Row K was observed placed on ground without drip tray. The Contractor was reminded to provide drip tray to all plants on site.

New Observation

Nil

Remarks

Nil

Site Inspection Summary

Inspection Information

Date:	13 January 2009
Time:	15:00
Inspection No.:	042

Non-compliance

Nil

Observations

Follow Up Observation

1. A soil nail installation controller at Row AR was still observed placed on ground without drip tray. The Contractor was reminded to provide drip tray to all plants on site.

New Observation

2. Some cement slurry was observed on the platform of Pullout 16 and observed dripping to the slope below. The Contractor was requested to properly clean up the slurry.

Remarks

Nil

Site Inspection Summary

Inspection Information

Date:	20 January 2009
Time:	15:00
Inspection No.:	043

Non-compliance

Nil

Observations

Follow Up Observations

1. The cement slurry on the platform of Pullout 16 had been cleared. (Closed)
2. A chemical container at Row AQ and a soil nail installation controller at Row AR were observed placed on ground without drip tray. The Contractor was reminded to provide drip tray to all chemical containers and plants on site.

New Observation

3. Muddy water was observed running down the slope at BA11. The Contractor was advised to provide sand bag bundings as primary desilting facility at the slope.

Remarks

Nil

APPENDIX L
MONITORING SCHEDULES

Landslip Preventive Works at Po Shan, Mid-Levels - Design and Construction (Natural Terrain Risk Mitigation Works)
Impact Monitoring and Audit Schedule for January 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				01-Jan	02-Jan	03-Jan
						24-hour TSP
04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan
	1-hour TSP & Noise	Site Inspection			24-hour TSP	1-hour TSP
11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan
		Site Inspection L & V Audit Ecology Monitoring		24-hour TSP	1-hour TSP & Noise	
18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan
		Site Inspection Ecology Monitoring L & V Audit	24-hour TSP	1-hour TSP & Noise		
25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
				24-hour TSP 1-hour TSP & Noise		

Landslip Preventive Works at Po Shan, Mid-Levels - Design and Construction (Natural Terrain Risk Mitigation Works)
Tentative Impact Monitoring and Audit Schedule for February 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb	07-Feb
	24-hour TSP	1-hour TSP & Noise Site Inspection				24-hour TSP
08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb
	1-hour TSP & Noise	Site Inspection L & V Audit Ecology Monitoring			24-hour TSP	1-hour TSP
15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb
		Site Inspection		24-hour TSP	1-hour TSP & Noise	
22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb
		Site Inspection Ecology Monitoring L & V Audit	24-hour TSP	1-hour TSP & Noise		

The schedule is subject to change due to unforeseeable circumstances (adverse weather, etc)