東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Kaden Construction Limited

CONTRACT NO. DC/2007/18

YUNG SHUE WAN AND SOK KWU WAN VILLAGE SEWERAGE, STAGE 1 WORKS

QUARTERLY EM&A SUMMARY REPORT NO.5

(JUNE TO AUGUST 2009)

Prepared by: _____
LAW, Sau Yee
Senior Environmental Officer

Checked by: _____
LAU, Chi Leung
Environmental Team Leader

Issue Date: 19 September 2009 *Report No.: ENA90703*

Scott Wilson CDM Joint Venture

Chief Engineer/Harbour Area Treatment Scheme
Drainage Services Department
5/F Western Magistracy
2A Pok Fu Lam Road
Hong Kong

Your reference:

Our reference: 05117/6/10/328551

Date: 24 September 2009

Attention: Mr. C K Au

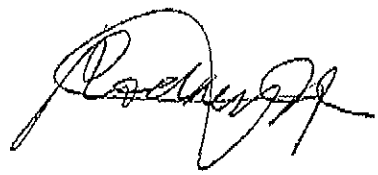
BY FAX ONLY

Dear Sir

Agreement No. CE20/2005 (DS)
Outlying Islands Sewerage Stage 1 Phase 1 Part 2 and Phase 2
Yung Shue Wan and Sok Kwu Wan Sewerage, Sewage Treatment and Disposal – Design and Construction
Quarterly EM&A Summary Report No. 5 (June 2009 to August 2009)

I refer to the Environmental Permit (EP-281/2007) and the email from the environmental team, ETS-Testconsult Limited with the revised report, dated 24 September 2009. I do not have further comment and have verified the captioned report.

Yours faithfully
SCOTT WILSON CDM JOINT VENTURE



Rodney Ip

ANCP/ancp

cc Kaden Construction Ltd (Attn: Mr Stephen Leung)
ETS-Testconsult (Attn: Ms Linda Law)
ER/LAMMA (Attn: Mr Ian Jones)
CDM (Attn: Mr Mark Sin)

TABLE OF CONTENTS

Figures

Tables

EXECUTIVE SUMMARY

This is the fifth Quarterly Environmental Monitoring and Audit (EM&A) Summary Report prepared by ETS-Testconsult Ltd (ET) for the"Contract No. DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works" (the Project) under the requirements and specifications of "the Environmental Permit (Application No. AEP-281/2007)" (the EP) and "the Final EM&A Manual – Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" (the EM&A Manual).

This report documents the findings of EM&A Works conducted during the construction phase of the Project from June to August 2009.

Construction Progress

The major construction works in this quarter were as below:

June 2009	• *Sewer drainage pipe & manhole construction (include open cut & trenchless method); and* • *Road reinstatement work.*
July 2009	• *Sewer drainage pipe & manhole construction (include open cut & trenchless method); and* • *Road reinstatement work.*
August 2009	• *Sewer drainage pipe & manhole construction (include open cut & trenchless method); and* • *Road reinstatement work.*

Environmental Monitoring Progress

The summary of the monitoring activities in this quarter is listed below:

- *Noise Monitoring (Day-time): 14 Occasions at 4 designated locations;*
- *24-hour TSP Monitoring: 17 Occasions at 3 designated locations;*
- *1-hour TSP Monitoring: 51 Occasions at 3 designated locations.*

Impact Air Quality Monitoring

No exceedances of Action and Limit levels were recorded for 24-hr and 1-hr TSP monitoring in the quarter.

Impact Noise Monitoring

No exceedance of Action and Limit Level were recorded in this quarter.

Environmental Complaints, Notifications of Summons and Successful Prosecutions

No environmental complaints, notifications of summons and successful prosecutions were received in this quarter.

Internet Website

This Quarterly EM&A Summary Report can be accessed on the web at http://www.skwsewer.com..

1.0 INTRODUCTION

The Customer, Kaden Construction Limited (Kaden), appointed Environmental Team of ETS-Testconsult Limited to undertake the environmental impact monitoring for "Contract No. DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works" (the Project) under the requirements and specifications of "the Environmental Permit (Application No. AEP-281/2007)" (the EP) and "the Final EM&A Manual – Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" (the EM&A Manual).

This Quarterly EM&A Summary Report documented the findings of EM&A Works conducted during the construction phase of the Project in June to August 2009.

2.0 PROJECT INFORMATION

2.1 Background

Under this Project, Kaden is required to construct village sewerage in Yung Shue Wan and Sok Kwu Wan, Lamma Island.

Village sewage works will undertake in this Project. These will comprise laying approximately 1.4km of sewerage pipes from 220mm to 350mm diameter in Sok Kwu Wan Village.

As the main Contractor of the captioned project contracted by, Kaden will follow the environmental monitoring recommendation stated in the EM&A Manual that was prepared with reference to the EIA Report (Register No.: AEIAR-075/2003).

According to the EP and the EM&A Manual, the environmental programme is mainly focused on the construction activities of this Project in Sok Kwu Wan. At the same time, all air quality and noise monitoring stations proposed in the EM&A Manual are located in Sok Kwu Wan. The baseline report is prepared in accordance with EP (No. EP-281/2007) for the Designated Project "Outlying Islands Sewerage Stage 1 Phase 2 – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" and the EM&A Manual.

2.2 Site Description

The general layout plan of the project in Sok Kwu Wan is shown in Drawing No. 2005/C1/2004, 2005/C1/2005 and 2005/C1/2006.

Surrounding the construction site, there are air and noise sensitive receivers at Chung Mei Village, Sok Kwu Wan and Ta Shui Wan.

2.3 Construction Programme

The construction programme is shown in Appendix F.

2.4 Project Organization and Management Structure

The organization chart with respect to the on-site environmental management and monitoring program are shown in Appendix A.

2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers, and construction programme are shown in table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	*Project Role*	*Key Staff*	*Tel. No.*	*Fax No.*
Scott Wilson CDM JV	*Engineer Representative*	*Ir Ian J Jones*	*2982 0240*	*2982 4129*
Scott Wilson CDM JV	*Independent Environmental Checker*	*Mr. Rodney Ip*	*2410 3750*	*2428 9922*
Kaden Construction Ltd	*Contractor*	*Ir Stephen Leung*	*2454 9102*	*2465 1207*
ETS-Testconsult Ltd	*Environmental Team*	*Mr. C L Lau*	*2946 7791*	*2695 3944*

3.0 SUMMARY OF EM&A REQUIREMENTS

3.1 EM&A Programme

In accordance with Section 5 of the EP, EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the EM&A Manual, environmental monitoring of air quality and noise are required for the Project. The EM&A requirement for each parameter are described in details in subsequent sections, including:

- *All monitoring parameters;*
- *Action and Limit levels for all environmental parameters;*
- *Event-Action Plans;*
- *Environmental mitigation measures, as recommended in the project EIA study report;*
- *Environmental requirements in contract documents.*

The implementation status of environmental mitigation measures is summarized in Section 5.2 of the Report.

3.2 Monitoring Stations and Parameters

The EM&A Manual designates several locations to monitor environmental impacts in terms of air quality and noise due to the Project. The description and detailed locations of monitoring stations for air quality and noise are shown in Figures 2005/C1/2004, 2005/C1/2005 and 2005/C1/2006 and relevant sections of this Report.

3.3 Monitoring Methodology and Calibration Details

All monitoring works were conducted and monitoring equipment was calibrated in accordance with the EM&A Manual.

3.4 Environmental Quality Performance Limits (Action/Limit Levels)

The environmental quality performance limits, i.e. Action/Limit Levels (AL Levels) were derived from the baseline monitoring results. If the measured environmental quality parameters exceed the AL Levels, the respective action plan will be implemented. The AL Levels for each monitoring parameter are given in Appendix D. The event action plan is given in Appendix E.

3.5 Environmental Mitigation Measures

Relevant mitigation measures were recommended in the EM&A Manual for the Contractor to implement. A list of mitigation measures is given in Appendix G.

4.0 MONITORING RESULTS

4.1 Air Quality

In accordance with the EM&A Manual, 1-hr and 24-hr TSP air quality monitoring are to be conducted three times and one time per six days correspondingly. In the reporting quarter, all the 1-hr and 24-hr TSP monitoring results complied with the AL Levels. The monitoring trends of air quality during the reporting quarter are given in Appendix B2.

Major dust sources in the Project were excavation works and vehicle used for moving sand, aggregates and construction waste.

Table 4.1 presents the number of exceedances recorded in each month of the reporting quarter.

Table 4.1 Summary of Number of Exceedances for 1-hr and 24-hr TSP Monitoring

Monitoring Parameter	*Level of Exceedance*	*June 2009*	*July 2009*	*August 2009*
24-hr TSP	*No of monitoring events*	*6*	*5*	*6*
	Action Level	*0*	*0*	*0*
	Limit Level	*0*	*0*	*0*
	Total	*0*	*0*	*0*
1-hr TSP	*No of monitoring events*	*18*	*15*	*18*
	Action Level	*0*	*0*	*0*
	Limit Level	*0*	*0*	*0*
	Total	*0*	*0*	*0*

4.2 Noise

Noise monitoring is required to be conducted at least once per week. Only daytime noise was monitored in the reporting quarter. All recorded noise levels complied with the AL Levels. The registered noise levels in the past three months are plotted in Appendix C2.

Table 4.2 presents the number of exceedances recorded in each month of the reporting quarter.

Table 4.2 Summary of Impact Monitoring results of Noise Daytime Monitoring

Level of Exceedance	*June 2009*	*July 2009*	*August 2009*
No of monitoring events	*5*	*4*	*5*
Action Level	*0*	*0*	*0*
Limit Level	*0*	*0*	*0*
Total	*0*	*0*	*0*

The major noise sources in the reporting quarter were excavation works and vehicle used for moving sand, aggregates and construction waste near the site egress.

In this quarter, no exceedances of Action Level were recorded in this quarter. Besides, no exceedances in Limit Level were recorded according to the results from Day-time noise monitoring.

5.0 INSPECTION RESULTS

5.1 Summary of site inspection findings and Action(s) taken by Kaden and ET in this quarter

ET conducted weekly site inspections to monitor the Contractor's implementation of environmental mitigation measures. After each site inspection, the Contractor was notified of ET's observations and recommendations and then the Contractor will arrange related remedial works.

Summary of the site inspection findings in this quarter is shown in Table 5.1.

Table 5.1 Summary of Site Inspection Findings and Action(s) taken by Kaden and ET

Item	*Aspect*	*Finding*	*Action(s) to be taken by the Contractor*	*ET Verification*
		June 2009		
1	*Air*	*A village vehicle transporting construction material was found without cover during the weekly site inspection on 24/06/09.*	*The Contractor replied to provide tarpaulin sheets to cover the construction material during transportation.*	*During the subsequent weekly site inspection on 30/06/09, construction material insides the village vehicle was found covered properly.*

Item	Aspect	Finding	Action(s) to be taken by the Contractor	ET Verification
June 2009				
2	Water	Follow up action to the outstanding finding in the previous month, the inlet pipe was pointed to the primal part of the sedimentation tank at S63 during the weekly site inspection on 08/06/09.	Since the finding was improved, no further action is required to be taken by the Contractor.	Since the finding was improved, no further verification is required to be taken by ET.
3	Water	During the weekly site inspection on 08/06/09, wastewater was found leaked out from a broken pipline at S147 to the road surface and hence rusty water was noted on the road.	The Contractor replied to clean up the rusty water and repair the broken pipeline.	During the subsequent weekly site inspection on 18/06/09, no wastewater was leaked from the pipeline and the rusty water had been cleaned up.
4	Water	Stagnant water was found inside the sedimentation tank at S70 during the weekly site inspections on 08/06/09 and 18/06/09.	The Contractor replied to drained the stagnant water out or apply pesticide to avoid mosquito breeding.	During the subsequent weekly site inspection on 24/06/09, the sedimentation tank was found covered properly.
5	Water	Wigglers were found in stagnant water of a sedimentation tank at S143 during the weekly site inspection on 18/06/09.	The Contractor replied to drain the stagnant water or apply pesticide to avoid mosquito breeding.	During the next weekly site inspection on 24/06/09, the sedimentation was found operating and no wigglers were noted.
6	Water	The desilting performance of a sedimentation tank at S143 was found unsatisfactory since the discharge water was found muddy during the weekly site inspections on 24/06/06 and 30/06/09.	The Contractor replied to improve the design of the sedimentation tank to improve its performance.	Since the finding was still observed during the last weekly site inspection in this reporting month, it will be verified in the coming month.
7	Water	The pump rate of wastewater to the sedimentation tank at S165 was found too large during the weekly site inspection 24/06/09.	The Contractor replied to control the pump rate to an acceptable level.	During the next weekly site inspection on 30/06/09, the sedimentation tank at S165 was found not-in-use.
8	Chemical	Follow up action to the outstanding finding in the previous month, drip tray and labels were found proved for the chemicals at storage area during the weekly site inspections on 02/06/09 and 08/06/09.	Since the finding was improved, no further action is required to be taken by the Contractor.	Since the finding was improved, no further verification is required to be taken by ET.
9	Chemical	Some fuel drums at S64 were found without drip tray and cover during the weekly site inspections on 02/06/09 and 08/06/09.	The Contractor replied to provide appropriate drip tray and cover for all chemicals.	During the subsequent weekly site inspection on 18/06/09, some fuel drums were covered properly and other were relocated to an appropriate storage area.
10	Chemical	An air compressor and some oil drums were found without drip tray at S147 during the weekly inspections on 08/06/09 and 18/06/09.	The Contractor replied to provide the drip tray for all chemicals and air compressors.	During the next two weekly site inspections on 18/06/09 and 24/06/09, air compressor was removed and oil drums were covered properly.

Item	Aspect	Finding	Action(s) to be taken by the Contractor	ET Verification
		July 2009		
1	Air	A village vehicle containing C&D materials was found without cover during transportation during the weekly site inspection on 22/07/09.	The Contractor replied to cover the C&D materials during the transportation by using village vehicle.	During the subsequent weekly site inspection on 28/07/09, cover was found provided for the village vehicle.
2	Air	White smoke with dust or mist like matters was observed from drilling works at an open manhole S73 although water spraying was provided during the weekly site inspection on 22/07/09.	The Contractor replied to provide mitigation measures, such as apply a enclosure to prevent any dust / mist like matters from escaping to the nearby environment.	During the subsequent weekly site inspection on 28/07/09, no dust or mist was observed at S73. However, the Contractor was still reminded that dust or moist should not be observed during the drilling works.
3	Water	Follow up action to the outstanding finding in the previous month, no muddy water was noted discharged from the sedimentation tank at S143 during the weekly site inspection on 06/07/09.	Since the finding was improved, no further action is required to be taken by the Contractor.	Since the finding was improved, no further verification is required to be taken by ET.
4	Water	Debris and refuse were found accumulated inside the u-channel along the slope at S58-S59 during the weekly site inspection on 06/07/09.	The Contractor replied to collect the debris and refuse in the u-channel immediately.	During the subsequent weekly site inspection on 16/07/09, the debris and refuse accumulated inside the u-channel at S58-S59 were cleaned up.
5	Water	Stagnant water was observed inside the drip tray at S165 during the weekly site inspection on 16/07/09.	The Contractor replied to drain the stagnant water out from the drip tray.	During the subsequent weekly site inspection on 22/07/09, no water was noted inside the drip tray.
6	Water	The capability of temporary sedimentation facility at S146 was found insufficient to treat the waste water during the weekly site inspection on 22/07/09.	The Contractor replied to improve the design of the sedimentation facilities.	During the subsequent weekly site inspection on 28/07/09, the sedimentation facility at S146 was re-designed (by using two sedimentation tanks) so as to improve the capacity of sedimentation.
7	Water	Stagnant water was noted inside an idle sedimentation tank at S144-146 during the weekly site inspection on 22/07/09.	The Contractor replied to pump the stagnant water out of the tank in order to avoid mosquito breeding.	During the subsequent weekly site inspection on 28/07/09, no stagnant water was noted inside the sedimentation tank.
8	Water	During the weekly site inspection on 22/07/09, the sedimentation tank made by an used oil drum at S86 was found not suitable for treating site runoff because of its incorrect design (the outlet point is located at the lower part of the tank but the inlet pipe is at the top)	The Contractor replied to provide adequate sedimentation tanks in order to improve the treatment of wastewater.	During the subsequent weekly site inspection on 28/07/09, an adequate sedimentation tank was used.

Item	Aspect	Finding	Action(s) to be taken by the Contractor	ET Verification
		July 2009		
9	Chemical	A drip tray was noted place on the top of the air compressor at S151-S165 during weekly site inspection on 22/07/09.	The Contractor replied to re-place the drip tray under the air-compressor.	During the subsequent weekly site inspection on 28/07/09, the drip tray was noted placed under the air-compressor.
		August 2009		
1	Air	Stockpiles of fill materials at S135 were found without cover during weekly site inspections on 13/08/09 and 19/08/09.	The Contractor replied to cover all stockpiles properly.	During the next weekly site inspection on 25/08/09, the stockpiles were found covered.
2	Noise	Noise label of an air compressor at S102 was found damaged during the weekly site inspection on 13/08/09.	The Contractor replied to provide new noise label immediately.	During the subsequent weekly site inspection on 19/08/09, the air compressor was removed for maintenance.
3	Noise	The construction works at S162 outside RE site office was found noisy during the weekly site inspection on 19/08/09.	The Contractor replied to provide more mitigation measures to reduce the noise impact.	During the subsequent weekly site inspection on 25/08/09, portable noise barrier was found provided during the construction work.
4	Water	The sedimentation tank at S81 was found too small during the weekly site inspection on 19/08/09.	The Contractor replied to provide a larger sedimentation tank.	During the subsequent weekly site inspection on 25/08/09, the sedimentation tank was replaced by a larger one.
5	Water	The drainage at S135 was found full of sands and debris during the weekly site inspection on 19/08/09.	The Contractor replied to clean up the sand and debris inside the drainage.	During the subsequent weekly site inspection on 25/08/09, the sands and debris inside the drainage were cleaned up.
6	Water	Rocks and soil were noted accumulated inside the sedimentation tank at S64 during the weekly site inspection on 19/08/09.	The Contractor replied to clean up the rocks and soil inside the sedimentation tank.	During the subsequent weekly site inspection on 25/08/09, the rocks and soil were cleaned up.
7	Chemical	Oil stain was noted on the ground at S73-S75 during the weekly site inspection on 03/08/09.	The Contractor replied to clean up the oil stain as chemical waste.	During the subsequent weekly site inspection on 13/08/09, no oil stain was noted on the ground.
8	Chemical	An oil drum at S73-S75 was found without drip tray during the weekly site inspection on 03/08/09.	The Contractor replied to provide drip tray for all chemicals.	During the subsequent weekly site inspection on 13/08/09, no oil drum was found at S73-S75.
9	Chemical	A diesel drum and chemical containers at S73-S75 were found without drip tray during the weekly site inspection on 31/08/09	The Contractor replied to provide drip trays for all chemicals.	Since the finding was observed in the last weekly site inspection, it will be verified in the coming month.
10	Site Inspection	C&D materials were noted accumulated at S147 without cover during the weekly site inspection on 19/08/09.	The Contractor replied to collect the C&D materials and store them properly.	During the same inspection, the C&D materials were collected and no further action was required.

5.2 Implementation Status of Environmental Mitigation Measures

According to the summary of the weekly site inspections carried out in this quarter, it indicated that site practices of the Kaden were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory.

Excavation works and vehicle used for moving sand, aggregates and construction waste were the major dust sources in the Project. Generally, the Contractor implemented adequate dust mitigation measures in this quarter, such as dampening of unpaved areas and fill material prior to handling or delivery and well maintenance of plant and equipment to avoid black smoke emission.

Vehicle traffic and construction activities near the site egress were the major noise sources. The powered mechanical equipment were generally operated and maintained properly.

5.3 Status of Environmental Licensing and Permitting

The status of licences and permits is summarized in Table 5.2.

Table 5.2 Summary of environmental licensing and permit status

Description	*Permit No.*	*Valid Period*		*Section*
		From	*To*	
Environmental Permit	*EP-281/2007*	*29/06/07*	*End of Project*	*Valid*
Water Discharge Licence	*EP890/W2/XD 026*	*23/05/08*	*31/03/12*	*Valid* *Discharge of Industrial Trade Effluent arising from Construction Site to communal storm water drain*
Notification under APCO	*Application had been submitted to EPD on 15 April 2008*			

5.4 Advice on Solids and Liquid Waste Management Status

The Contractor usually disposed of non-inert wastes such as general refuses and materials segregated to Sok Kwu Wan Re-fill Transfer Station (SKWRTS).

Table 5.3 summarizes data on offsite waste disposal in this quarter.

Table 5.3 Offsite Waste Disposal in this Quarter

Type of Waste		*Quantity*	*Disposal Location*	*Cumulative Quantity*
Inert C&D Materials	*Total Quantity Generated (in '000m^3)*	*0.6545*		*1.1438*
	Broken Concrete (in '000m^3)	*0.015*	*SKWRTS*	*0.0358*
	Reused in the Contract (in '000m^3)	*0.3355*	*For Stockpile / Reuse*	*0.4955*
	Reused in other Projects (in '000m^3)	*0.118*	*N/A*	*0.208*
	Disposal as Public Fill (in '000m^3)	*0.2009*	*SKWRTS*	*0.3692*
C&D Waste	*Metals (in '000kg)*	*0*	*N/A*	*0*
	Paper/Cardboard Packaging (in '000kg)	*0*	*N/A*	*0*
	Plastics (in '000kg)	*0*	*N/A*	*0*
	Chemical Waste (in '000kg)	*0*	*N/A*	*0*
	Other, e.g. General Refuse (tonne)	*1.64*	*SKWRTS*	*5.38*

The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials used for this cleaning works as chemical waste.

The Contractor was reminded to increase the frequency of inspection and cleaning of the site drainage system and desilting facilities. Moreover, the Contractor should apply approved pesticides in the stagnant water ponds.

The Contractor should use suitable containers with proper labels to store chemical wastes in accordance with Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The Contractor should also advise their workers of the proper procedures in handling the chemical waste. All the trip tickets for chemical waste disposal were properly kept in the site office. No chemical waste disposal was undertaken in this quarter.

All the runoff should be pumped to the desilting facilities to remove suspended solids prior to discharge.

6.0 ECOLOGY

A comprehensive tree survey was carried out by Kaden in mid 2008. The two uncommon tree species (Celtis timorensis and Celtis biondii) could not be identified on site as per the Figure 4 of the EP.

A joint visit amongst EPD. AFCD, Kaden, DSD and RE was subsequently held on 24 March 2009 and some immature Celtic timorensis plants were identified at certain locations at Chung Mei. It was agreed that a full vegetation survey (in addition to the previous tree survey) should be conducted to identify the immature uncommon species.

Kaden had employed a landscape subcontractor "Bluet" and carried out a vegetation survey on 17 April 2009. Some immature uncommon species had been identified at Chung Mei near the Works Area. Regarding the comments from EPD, an updated vegetation survey report prepared on 07 August 2009.

The uncommon plants have been labelled and fenced off with safety net and notices have been posted for warning the site personnel of the presence of the uncommon tree species. Photos attached in Appendix I present the fencing and protection provided for those uncommon species.

7.0 ARCHAEOLOGY AND CULTURAL HERITAGE

Refer to the Section 9 of EM&A Manual, watching brief works were conducted in Chung Mei, Sok Kwu Wan by Archaeological Assessments Limited on 01 September 2008 and 12 June 2009.

The watching brief works took place along approximately 50m long alignment in two segments, MHS52 to MHS54 on 1st September 2008 and MHS50 to MHS52 on 12th June 2009. In overview, the steep lower hill slope area traversed by the MHS50 and MHS54 has seen little or no human activity prior to the 20th century and in contrast to the valley to the west, can be considered to have no archaeological potential. Details of the watching brief works present in Appendix H.

8.0 NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

8.1 Summary of Non-compliance

No exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting period.

No exceedance of Action Level of noise monitoring was recorded in this quarter since no complaint on noise issue was received. Besides, no exceedances in Limit Level were recorded according to the results from Day-time noise monitoring..

No evening-time, night-time and holiday noise monitoring were required since no construction works were processed during these periods.

8.2 Review of the Reasons for and the Implications of Non-compliance

Since there were no exceedances on air quality and noise monitoring parameters recorded in this monitoring quarter, the review of the reasons for the non-compliance was not required.

8.3 Summary of Actions Taken

Since no exceedances were recorded, no further actions were required.

8.4 Summary of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No environmental complaints, notifications of summons and successful prosecutions were received in this quarter.

A summary of environmental complaints and prosecutions was given in Table 6.1.

Table 8.1 Summary of Environmental Complaints and Prosecutions

Period	*Complaints logged*	*Summon served*	*Successful Prosecution*
June 2009	*0*	*0*	*0*
July 2009	*0*	*0*	*0*
August 2009	*0*	*0*	*0*
Cumulative	*1*	*0*	*0*

9.0 COMMENTS, CONCLUSIONS AND RECOMMENDATION

In this quarter, major site activities were excavation and pipe-laying works. Noise and air quality were the major environmental issues in the Project. Generally, the Contractor implemented most of the mitigation measures to minimize the dust impact.

No exceedances of Action and Limit Level of air quality and noise monitoring were recorded in this quarter.

No environmental complaints, notification of summons and prosecutions with respect to environmental issues were received in this quarter.

According to the ET weekly site inspections carried out in this quarter, it was indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was up to standard. The Contractor generally implemented sufficient dust mitigation measures.

According to the environmental site inspections performed in this quarter, the following recommendations were provided:

Air Quality

- Ensure the frequency of water spraying on unpaved/unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Undertake water spraying on stockpiling area;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit; and
- Implement the dust mitigation measures for the construction activities.

Noise

- Conduct noisy activities at a farther location from the NSRs.

Water Quality

- Provide proper treatment for the wastewater discharged; and
- Remove the stagnant water or provide pesticide for the stagnant water in the permanent desilting chambers, if any.

Chemical and Waste Management

- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain good housekeeping; and
- Avoid oil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.

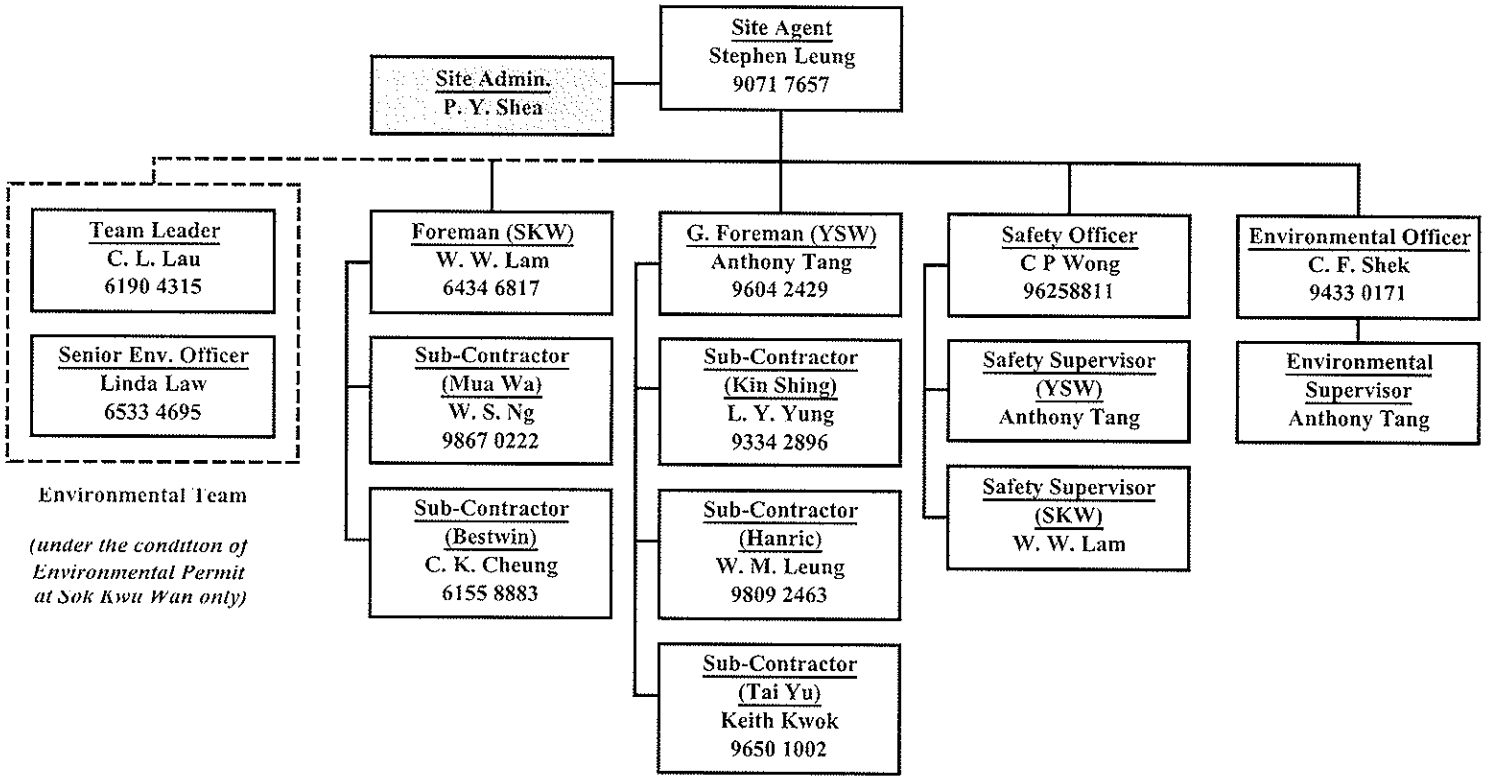
Appendix A

Organization Chart and Lines of Communication

Kaden Construction Limited

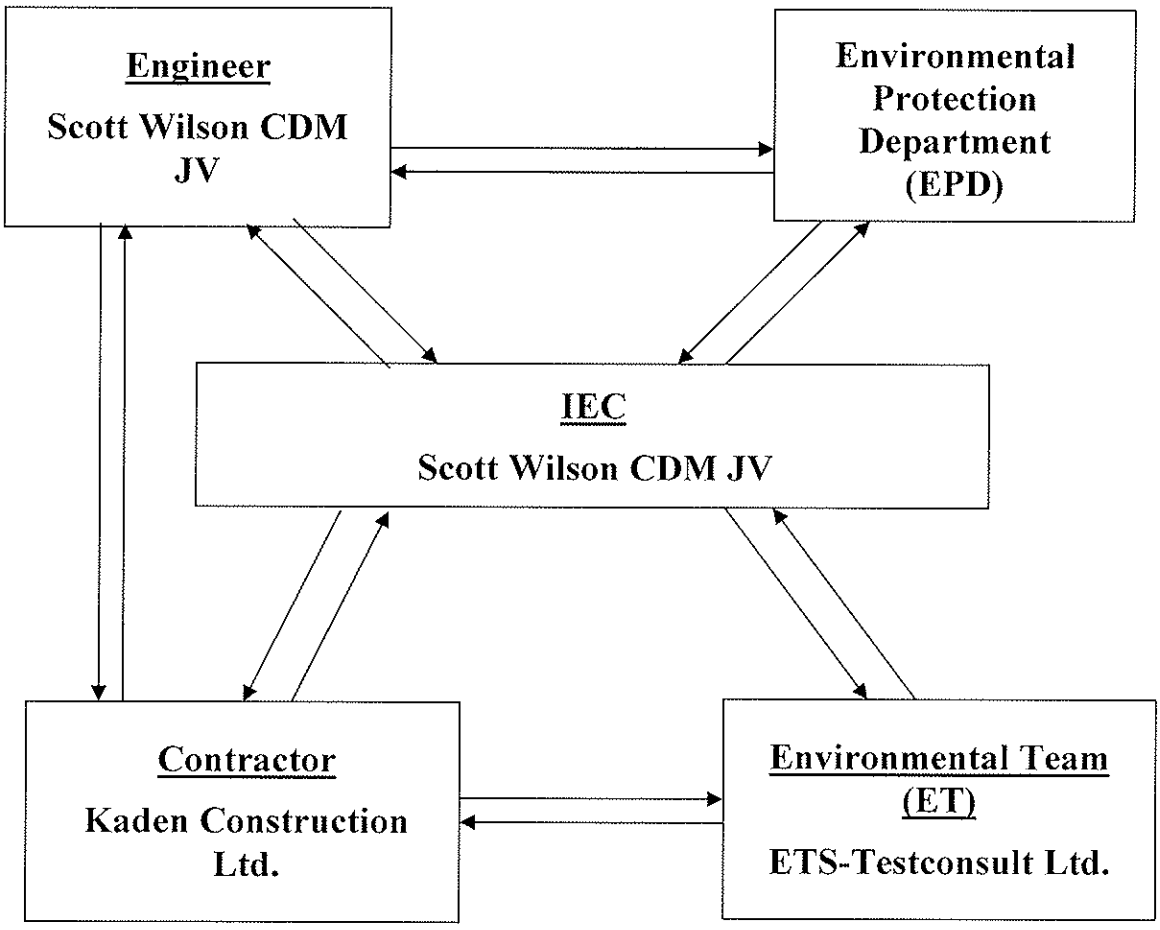
DSD Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works

Organization Structure for Environmental Management (EMP Rev. 18.00)



Updated on 01/05/2009
Printed on 2009/9/4

Lines of Communication



Appendix B1

Impact Air Quality Monitoring Results in this Quarter

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/06/09	12:01	03/06/09	12:01	14231.25	14255.25	24.00	1.0304	1.0304	1.0304	2.8605	2.9334	49	Fine
08/06/09	12:10	09/06/09	12:10	14255.25	14279.25	24.00	1.0304	1.0304	1.0304	2.8781	2.9347	38	Cloudy
12/06/09	09:50	13/06/09	09:50	14279.25	14303.25	24.00	1.1052	1.1052	1.1052	2.9054	2.9593	34	Cloudy
18/06/09	10:19	19/06/09	10:25	14303.25	14327.35	24.10	0.9780	0.9780	0.9780	2.7511	2.8163	46	Sunny
24/06/09	12:00	25/06/09	12:00	14327.35	14351.35	24.00	0.9287	0.9287	0.9287	2.7442	2.7924	36	Fine
30/06/09	09:25	01/07/09	09:25	14351.35	14375.35	24.00	1.0274	1.0274	1.0274	2.8248	2.8675	29	Sunny
06/07/09	18:00	07/07/09	18:00	14375.35	14399.35	24.00	1.0274	1.0274	1.0274	2.8012	2.8389	25	Sunny
10/07/09	12:00	11/07/09	12:00	14399.35	14423.35	24.00	1.0520	1.0520	1.0520	2.8174	2.8959	52	Sunny
16/07/09	14:00	17/07/09	14:00	14423.35	14474.35	24.00	1.0274	1.0274	1.0274	2.8325	2.8775	30	Sunny
22/07/09	13:03	23/07/09	13:03	14447.35	14471.35	24.00	1.0520	1.0520	1.0520	2.7914	2.8330	27	Fine
28/07/09	11:48	29/07/09	11:48	14471.35	17795.35	24.00	1.0274	1.0274	1.0274	2.8196	2.8800	41	Sunny
03/08/09	09:25	04/08/09	09:25	14495.35	14519.35	24.00	1.0274	1.0274	1.0274	2.8332	2.9109	53	Cloudy
07/08/09	13:00	08/08/09	13:00	14519.35	14543.35	24.00	1.0027	1.0027	1.0027	2.8521	2.9164	45	Sunny
13/08/09	13:00	14/08/09	13:00	14543.35	14567.35	24.00	1.0643	1.0643	1.0643	2.8257	2.8719	30	Rainy
19/08/09	13:00	20/08/09	13:00	14567.35	14591.35	24.00	1.3078	1.3078	1.3078	2.7912	2.8573	43	Sunny
25/08/09	12:20	26/08/09	12:20	14591.35	14615.35	24.00	1.0907	1.0907	1.0907	2.8568	2.9206	41	Sunny
31/08/09	10:44	01/09/09	10:44	14615.35	14639.35	24.00	1.0907	1.0907	1.0907	2.8571	2.9598	65	Fine

Monitoring Station : AM2

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/06/09	12:05	03/06/09	12:05	18267.24	18291.24	24.00	1.2005	1.2005	1.2005	2.8429	2.9204	45	Fine
08/06/09	12:15	09/06/09	12:15	18291.24	18315.24	24.00	1.2303	1.2303	1.2303	2.8832	2.9642	46	Cloudy
12/06/09	09:45	13/06/09	09:45	18315.24	18339.24	24.00	1.2602	1.2602	1.2602	2.8804	2.9305	28	Cloudy
18/06/09	10:28	19/06/09	10:28	18339.24	18363.24	24.00	1.2707	1.2707	1.2707	2.7576	2.8157	32	Sunny
24/06/09	12:10	25/06/09	12:10	18363.24	18387.24	24.00	1.1816	1.1816	1.1816	2.7428	2.7905	28	Fine
30/06/09	09:18	01/07/09	09:18	18387.24	18411.24	24.00	1.2113	1.2113	1.2113	2.7924	2.8357	25	Sunny
06/07/09	18:00	07/07/09	18:00	18411.24	18435.24	24.00	1.1816	1.1816	1.1816	2.7733	2.8214	28	Sunny
10/07/09	12:00	11/07/09	12:00	18435.24	18459.24	24.00	1.2113	1.2113	1.2113	2.8143	2.8984	48	Sunny
16/07/09	14:02	17/07/09	14:02	18459.24	18483.24	24.00	1.1816	1.1816	1.1816	2.7899	2.8432	31	Sunny
22/07/09	12:56	23/07/09	12:56	18483.24	18507.24	24.00	1.1816	1.1816	1.1816	2.8056	2.8553	29	Fine
28/07/09	11:56	29/07/09	11:56	18507.24	18531.24	24.00	1.1816	1.1816	1.1816	2.8203	2.8995	47	Sunny
03/08/09	09:33	04/08/09	09:33	18531.24	18555.24	24.00	1.1816	1.1816	1.1816	2.8123	2.8801	40	Cloudy
07/08/09	13:00	08/08/09	13:00	18555.24	18579.24	24.00	1.0628	1.0628	1.0628	2.8647	2.9359	47	Sunny
13/08/09	13:00	14/08/09	13:00	18579.24	18603.24	24.00	1.3716	1.3716	1.3716	2.8226	2.8682	23	Rainy
19/08/09	13:00	20/08/09	13:00	18603.24	18627.24	24.00	1.3078	1.3078	1.3078	2.8045	2.8850	43	Sunny
25/08/09	12:35	26/08/09	12:35	18627.24	18651.24	24.00	1.2440	1.2440	1.2440	2.8716	2.9473	42	Sunny
31/08/09	10:47	01/09/09	10:47	18651.24	18675.24	24.00	1.2759	1.2759	1.2759	2.8486	2.9510	56	Fine

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM3

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
02/06/09	11:44	03/06/09	11:44	2327.51	2351.51	24.00	1.2888	1.2888	1.2888	2.8577	3.0380	97	Fine
08/06/09	13:00	09/06/09	13:00	2351.51	2375.51	24.00	1.1368	1.1368	1.1368	2.8721	2.9467	46	Cloudy
12/06/09	13:50	13/06/09	13:50	2375.51	2399.51	24.00	1.1368	1.1368	1.1368	2.8860	2.9496	39	Cloudy
18/06/09	10:49	19/06/09	10:49	2399.51	2423.51	24.00	1.0998	1.0998	1.0998	2.7624	2.8473	54	Sunny
24/06/09	14:45	25/06/09	14:45	2423.51	2447.51	24.00	1.1280	1.1280	1.1280	2.7498	2.8098	37	Fine
30/06/09	13:00	01/07/09	13:00	2447.51	2471.51	24.00	1.2127	1.2127	1.2127	2.8030	2.8468	25	Sunny
06/07/09	11:06	07/07/09	11:06	2471.51	2495.51	24.00	1.0998	1.0998	1.0998	2.7908	2.8372	29	Sunny
10/07/09	16:00	11/07/09	16:00	2495.51	2519.51	24.00	0.9868	0.9868	0.9868	2.8036	2.9393	95	Sunny
16/07/09	11:29	17/07/09	11:29	2519.51	2543.51	24.00	1.0151	1.0151	1.0151	2.7844	2.8965	77	Sunny
22/07/09	14:27	23/07/09	14:27	2543.51	2567.51	24.00	1.0151	1.0151	1.0151	2.7819	2.8087	18	Fine
28/07/09	12:06	29/07/09	12:06	2567.51	2591.51	24.00	1.0151	1.0151	1.0151	2.7893	2.8582	47	Sunny
03/08/09	09:08	04/08/09	09:08	2591.51	2615.51	24.00	0.9021	0.9021	0.9021	2.8271	2.9271	77	Cloudy
07/08/09	13:00	08/08/09	13:00	2615.51	2639.51	24.00	1.1280	1.1280	1.1280	2.8249	2.8802	34	Sunny
13/08/09	09:58	14/08/09	09:58	2639.51	2663.51	24.00	1.2800	1.2800	1.2800	2.8432	2.8825	21	Rainy
19/08/09	13:00	20/08/09	13:00	2663.51	2687.51	24.00	1.1890	1.1890	1.1890	2.8471	2.8982	30	Sunny
25/08/09	17:04	26/08/09	17:04	2687.51	2711.51	24.00	1.2194	1.2194	1.2194	2.8351	2.8858	29	Sunny
31/08/09	09:25	01/09/09	09:25	2711.51	2735.51	24.00	1.1890	1.1890	1.1890	2.8312	2.9594	75	Fine

Summary of 1-hr TSP Monitoring Results

Monitoring Station: AM1

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/06/09	08:48	09:48	48	298	83	Fine
02/06/09	09:48	10:48	46	276	81	Fine
02/06/09	10:48	11:48	42	314	96	Fine
08/06/09	09:15	10:15	98	372	129	Cloudy
08/06/09	10:15	11:15	112	356	142	Cloudy
08/06/09	11:15	12:15	106	324	122	Cloudy
12/06/09	09:13	10:13	102	419	157	Cloudy
12/06/09	10:13	11:13	98	436	171	Cloudy
12/06/09	11:13	12:13	100	404	163	Cloudy
18/06/09	13:05	14:05	58	356	96	Sunny
18/06/09	14:05	15:05	56	409	101	Sunny
18/06/09	15:05	16:05	60	430	105	Sunny
24/06/09	13:00	14:00	106	372	172	Cloudy
24/06/09	14:00	15:00	97	416	159	Cloudy
24/06/09	15:00	16:00	95	407	166	Cloudy
30/06/09	09:20	10:20	67	416	171	Fine
30/06/09	10:20	11:20	72	472	211	Fine
30/06/09	11:20	12:20	88	361	175	Fine
06/07/09	13:30	14:30	92	529	216	Sunny
06/07/09	14:30	15:30	73	453	201	Sunny
06/07/09	15:30	16:30	65	376	195	Sunny
10/07/09	09:15	10:15	92	413	118	Sunny
10/07/09	10:15	11:15	116	467	132	Sunny
10/07/09	11:15	12:15	83	384	125	Sunny
16/07/09	09:08	10:08	41	378	84	Fine
16/07/09	10:08	11:08	42	400	86	Fine
16/07/09	11:08	12:08	54	479	99	Fine
22/07/09	13:00	14:00	82	392	115	Sunny
22/07/09	14:00	15:00	90	361	135	Sunny
22/07/09	15:00	16:00	87	326	124	Sunny
28/07/09	09:20	10:20	72	369	104	Overcast
28/07/09	10:20	11:20	85	378	123	Overcast
28/07/09	13:05	14:05	94	422	134	Overcast
03/08/09	09:15	10:15	82	427	163	Sunny
03/08/09	10:15	11:15	97	456	193	Sunny
03/08/09	11:15	12:15	106	382	182	Sunny
07/08/09	09:20	10:20	92	462	166	Sunny
07/08/09	10:20	11:20	89	423	178	Sunny
07/08/09	11:20	12:20	100	500	146	Sunny
13/08/09	09:22	10:22	62	326	163	Rainy
13/08/09	10:22	11:22	70	317	161	Rainy
13/08/09	11:22	12:22	82	289	142	Rainy
19/08/09	13:00	14:00	102	587	183	Fine
19/08/09	14:00	15:00	97	524	198	Fine
19/08/09	15:00	16:00	85	480	155	Fine
25/08/09	09:18	10:18	86	419	156	Sunny
25/08/09	10:18	11:18	104	435	184	Sunny
25/08/09	11:18	12:18	121	568	216	Sunny
31/08/09	13:00	14:00	100	422	180	Sunny
31/08/09	14:00	15:00	97	447	190	Sunny
31/08/09	15:00	16:00	92	416	151	Sunny

Summary of 1-hr TSP Monitoring Results

Monitoring Station: AM2

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/06/09	09:05	10:05	53	308	85	Fine
02/06/09	10:05	11:05	60	329	94	Fine
02/06/09	11:05	12:05	55	340	97	Fine
08/06/09	09:18	10:18	102	391	128	Cloudy
08/06/09	10:18	11:18	97	360	141	Cloudy
08/06/09	11:18	12:18	106	317	121	Cloudy
12/06/09	09:16	10:16	104	440	156	Cloudy
12/06/09	10:16	11:16	95	422	171	Cloudy
12/06/09	11:16	12:16	90	385	159	Cloudy
18/06/09	13:12	14:12	55	417	86	Sunny
18/06/09	14:12	15:12	63	453	101	Sunny
18/06/09	15:12	16:12	57	500	109	Sunny
24/06/09	13:00	14:00	110	402	156	Cloudy
24/06/09	14:00	15:00	99	447	149	Cloudy
24/06/09	15:00	16:00	102	428	136	Cloudy
30/06/09	09:24	10:24	71	432	173	Fine
30/06/09	10:24	11:24	82	516	197	Fine
30/06/09	11:24	12:24	75	380	151	Fine
06/07/09	13:40	14:40	84	584	201	Sunny
06/07/09	14:40	15:40	79	519	187	Sunny
06/07/09	15:40	16:40	62	433	175	Sunny
10/07/09	09:18	10:18	98	409	117	Sunny
10/07/09	10:18	11:18	131	487	135	Sunny
10/07/09	11:18	12:18	86	376	123	Sunny
16/07/09	09:13	10:13	50	419	97	Fine
16/07/09	10:13	11:13	55	509	108	Fine
16/07/09	11:13	12:13	54	504	104	Fine
22/07/09	13:06	14:06	91	417	113	Sunny
22/07/09	14:06	15:06	95	395	127	Sunny
22/07/09	15:06	16:06	86	360	122	Sunny
28/07/09	09:30	10:30	82	385	104	Overcast
28/07/09	10:30	11:30	89	393	117	Overcast
28/07/09	13:12	14:12	99	463	129	Overcast
03/08/09	09:20	10:20	96	429	141	Sunny
03/08/09	10:20	11:20	85	472	163	Sunny
03/08/09	11:20	12:20	89	396	171	Sunny
07/08/09	09:24	10:24	86	469	161	Sunny
07/08/09	10:24	11:24	92	512	170	Sunny
07/08/09	11:24	12:24	87	482	142	Sunny
13/08/09	09:27	10:27	65	335	159	Rainy
13/08/09	10:27	11:27	75	328	146	Rainy
13/08/09	11:27	12:27	86	316	130	Rainy
19/08/09	13:06	14:06	110	592	170	Fine
19/08/09	14:06	15:06	106	581	185	Fine
19/08/09	15:06	16:06	95	521	151	Fine
25/08/09	09:30	10:30	95	472	146	Sunny
25/08/09	10:30	11:30	138	615	197	Sunny
25/08/09	11:30	12:30	124	543	171	Sunny
31/08/09	13:00	14:00	107	436	176	Sunny
31/08/09	14:00	15:00	92	459	190	Sunny
31/08/09	15:00	16:00	87	397	160	Sunny

Summary of 1-hr TSP Monitoring Results

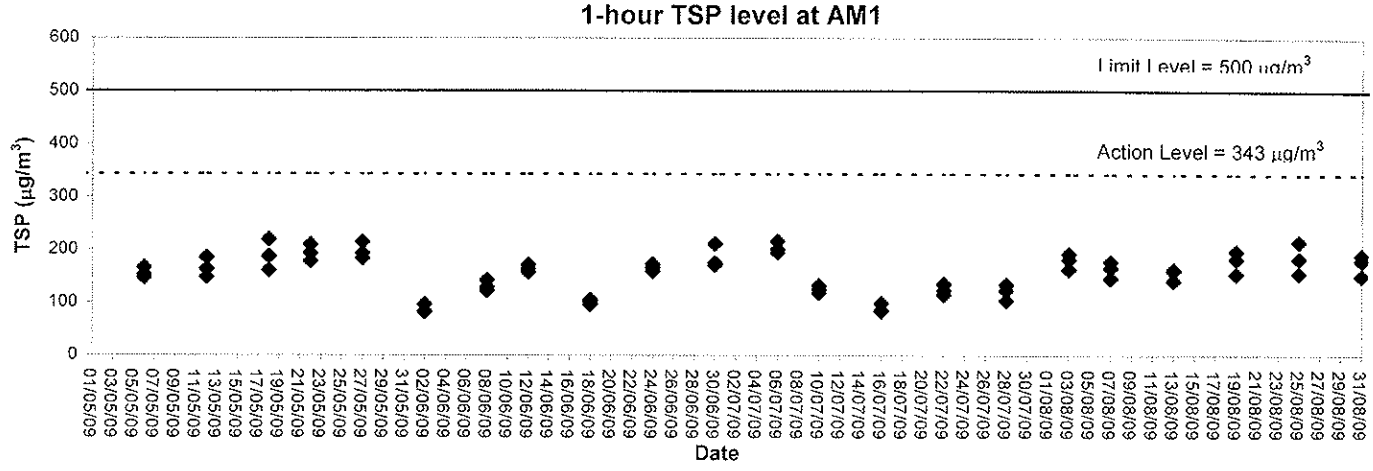
Monitoring Station: AM3

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
02/06/09	13:00	14:00	65	434	99	Fine
02/06/09	14:00	15:00	58	418	116	Fine
02/06/09	15:00	16:00	53	405	105	Fine
08/06/09	13:00	14:00	89	392	161	Cloudy
08/06/09	14:00	15:00	95	386	158	Cloudy
08/06/09	15:00	16:00	100	345	170	Cloudy
12/06/09	13:00	14:00	97	422	191	Cloudy
12/06/09	14:00	15:00	92	382	167	Cloudy
12/06/09	15:00	16:00	101	417	155	Cloudy
18/06/09	09:10	10:10	76	574	140	Sunny
18/06/09	10:10	11:10	72	603	145	Sunny
18/06/09	11:10	12:10	78	621	149	Sunny
24/06/09	09:16	10:16	98	398	171	Cloudy
24/06/09	10:16	11:16	112	412	169	Cloudy
24/06/09	11:16	12:16	105	405	160	Cloudy
30/06/09	13:00	14:00	86	414	163	Fine
30/06/09	14:00	15:00	79	432	184	Fine
30/06/09	15:00	16:00	72	376	146	Fine
06/07/09	09:15	10:15	83	429	168	Sunny
06/07/09	10:15	11:15	94	561	199	Sunny
06/07/09	11:15	12:15	75	415	156	Sunny
10/07/09	13:00	14:00	87	406	119	Sunny
10/07/09	14:00	15:00	96	436	152	Sunny
10/07/09	15:00	16:00	106	421	138	Sunny
16/07/09	13:00	14:00	66	559	120	Fine
16/07/09	14:00	15:00	69	584	124	Fine
16/07/09	15:00	16:00	60	566	113	Fine
22/07/09	09:12	10:12	102	406	144	Sunny
22/07/09	10:12	11:12	89	382	139	Sunny
22/07/09	11:12	12:12	95	324	116	Sunny
28/07/09	14:38	15:38	96	504	155	Sunny
28/07/09	15:38	16:38	88	426	148	Sunny
28/07/09	16:38	17:38	103	415	130	Sunny
03/08/09	13:00	14:00	106	506	157	Sunny
03/08/09	14:00	15:00	116	452	185	Sunny
03/08/09	15:00	16:00	107	418	178	Sunny
07/08/09	13:00	14:00	86	416	163	Sunny
07/08/09	14:00	15:00	104	428	184	Sunny
07/08/09	15:00	16:00	97	378	148	Sunny
13/08/09	13:00	14:00	72	327	172	Rainy
13/08/09	14:00	15:00	83	316	135	Rainy
13/08/09	15:00	16:00	80	330	145	Rainy
19/08/09	09:15	10:15	89	417	154	Fine
19/08/09	10:15	11:15	92	472	144	Fine
19/08/09	11:15	12:15	78	398	131	Fine
25/08/09	14:00	15:00	92	396	158	Sunny
25/08/09	15:00	16:00	97	359	163	Sunny
25/08/09	16:00	17:00	86	313	148	Sunny
31/08/09	09:20	10:20	106	406	168	Sunny
31/08/09	10:20	11:20	112	318	180	Sunny
31/08/09	11:20	12:20	99	305	148	Sunny

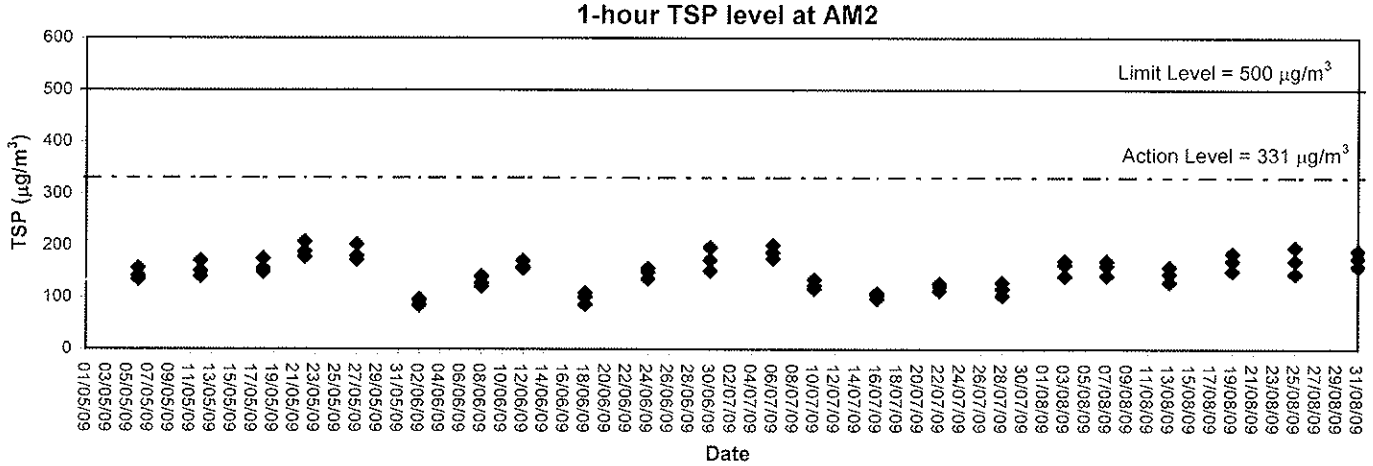
Appendix B2

Graphical Plots of Impact Air Quality Monitoring Data in this Quarter

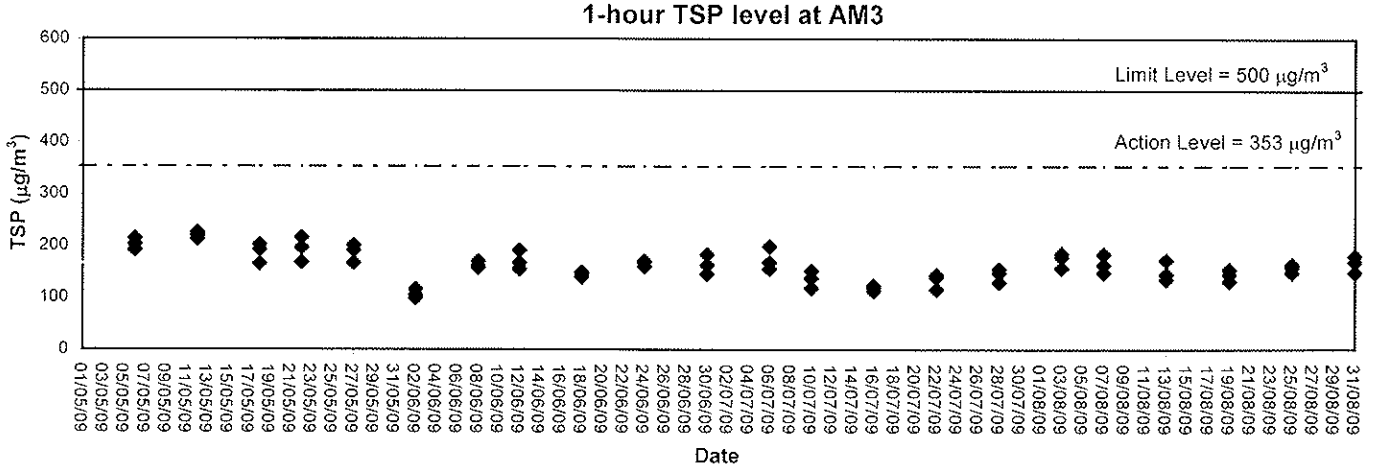
1-hour TSP level at AM1

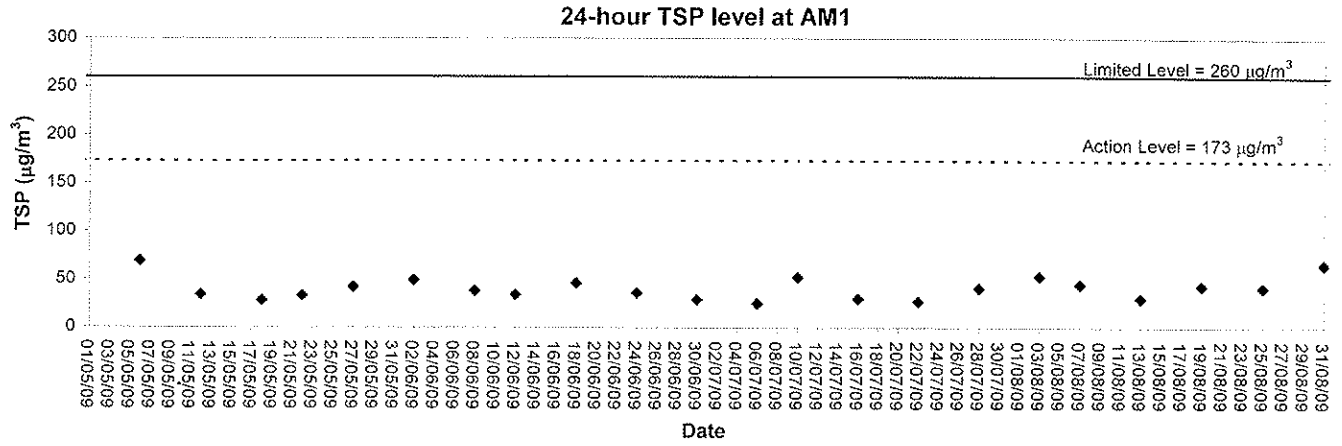


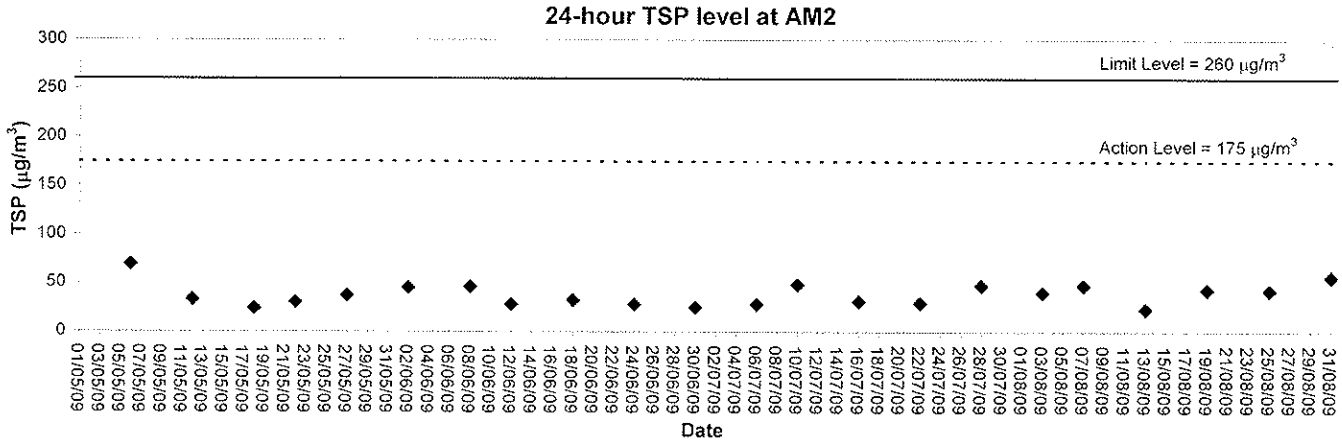
1-hour TSP level at AM2

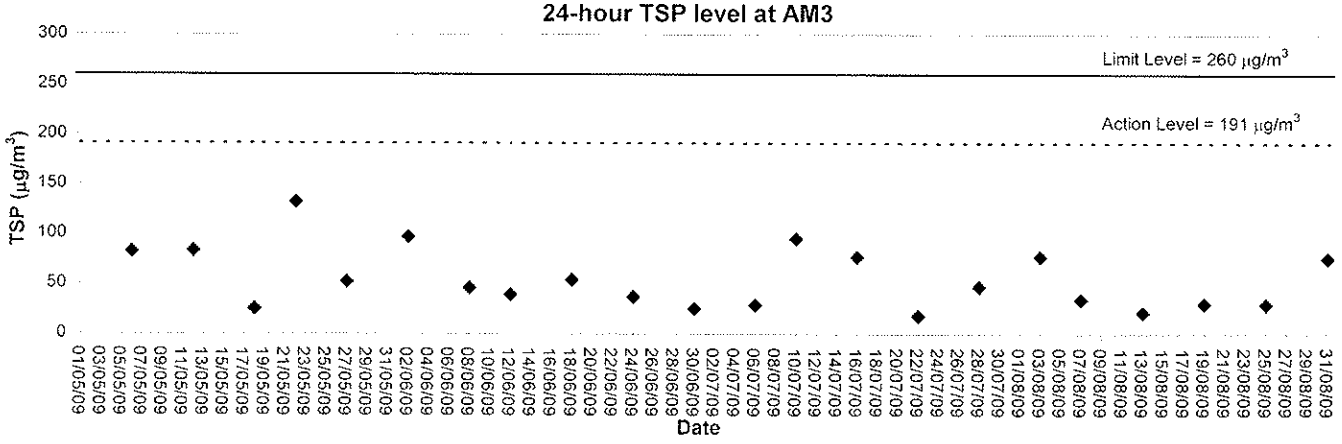


1-hour TSP level at AM3




24-hour TSP level at AM1
Limited Level = 260 μg/m3
Action Level = 173 μg/m3
TSP (μg/m3)
Date


24-hour TSP level at AM2
Limit Level = 260 μg/m3
Action Level = 175 μg/m3
TSP (μg/m3)
Date


24-hour TSP level at AM3
Limit Level = 260 μg/m3
Action Level = 191 μg/m3
TSP (μg/m3)
Date

Appendix C1

Impact Noise Monitoring Results in this Quarter

Day-time Noise Monitoring

Monitoring Station: NM1

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/06/09	Fine	09:14	09:44	52.7	55.8	47.0	1.2
08/06/09	Cloudy	09:33	10:03	65.8	68.8	58.5	0.8
18/06/09	Sunny	13:25	13:55	53.6	58.9	50.2	1.0
24/06/09	Fine	11:25	11:55	55.2	57.1	46.5	0.2
30/06/09	Fine	09:34	10:04	73.8	77.6	70.4	0.5
06/07/09	Sunny	13:52	14:22	69.4	74.0	66.8	1.4
16/07/09	Fine	09:15	09:45	55.6	58.4	51.8	1.8
22/07/09	Sunny	15:09	15:39	75.0	78.1	67.2	0.4
28/07/09	Overcast	09:40	10:10	71.2	76.4	67.5	0.6
03/08/09	Cloudy	14:16	14:46	75.0	77.8	69.7	0.8
13/08/09	Cloudy	15:20	15:50	74.7	78.0	58.4	0.6
19/08/09	Fine	13:32	14:02	74.9	76.8	68.7	0.2
25/08/09	Sunny	16:10	16:40	71.8	74.1	67.0	1.2
31/08/09	Fine	10:53	11:23	60.5	60.9	47.2	0.5

Monitoring Station: NM2

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/06/09	Fine	09:55	10:25	63.4	68.9	56.8	0.9
08/06/09	Cloudy	10:08	10:38	66.2	66.8	59.7	1.0
18/06/09	Sunny	10:10	10:40	57.8	65.9	55.2	0.8
24/06/09	Fine	13:40	14:10	64.1	65.9	60.1	0.2
30/06/09	Fine	10:08	10:38	67.5	69.3	58.0	0.7
06/07/09	Sunny	15:30	16:00	72.5	76.1	67.9	0.6
16/07/09	Fine	10:00	10:30	65.9	73.1	62.5	1.1
22/07/09	Sunny	13:45	14:15	66.2	69.5	62.6	0.6
28/07/09	Overcast	10:20	10:50	67.9	70.0	65.3	0.9
03/08/09	Cloudy	10:22	10:52	72.1	74.5	64.0	0.7
13/08/09	Cloudy	16:00	16:30	68.4	69.8	58.9	0.5
19/08/09	Fine	14:10	14:40	64.1	65.8	59.6	0.2
25/08/09	Sunny	15:30	16:00	65.6	68.4	61.9	1.0
31/08/09	Fine	13:00	13:30	60.7	61.2	58.0	0.4

Monitoring Station: RNM3

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/06/09	Fine	10:40	11:10	64.3	69.3	60.7	0.7
08/06/09	Cloudy	10:42	11:12	62.5	64.5	55.2	0.5
18/06/09	Sunny	10:50	11:20	63.6	70.5	59.1	1.2
24/06/09	Fine	13:06	13:36	66.8	67.9	57.9	0.4
30/06/09	Fine	11:26	11:56	62.3	63.5	59.7	0.3
06/07/09	Sunny	10:05	10:35	65.3	69.2	62.4	0.9
16/07/09	Fine	10:43	11:13	66.8	72.5	63.6	1.4
22/07/09	Sunny	14:30	15:00	64.2	66.1	60.7	0.5
28/07/09	Sunny	13:50	14:20	63.8	65.9	60.9	1.2
03/08/09	Cloudy	15:10	15:40	68.7	70.6	62.4	0.5
13/08/09	Cloudy	14:35	15:05	65.0	67.2	59.2	1.0
19/08/09	Fine	11:33	12:03	61.8	63.6	56.6	0.0
25/08/09	Sunny	14:52	15:22	58.9	59.9	56.3	0.4
31/08/09	Fine	10:06	10:36	62.6	63.2	59.2	0.5

Monitoring Station: NM4

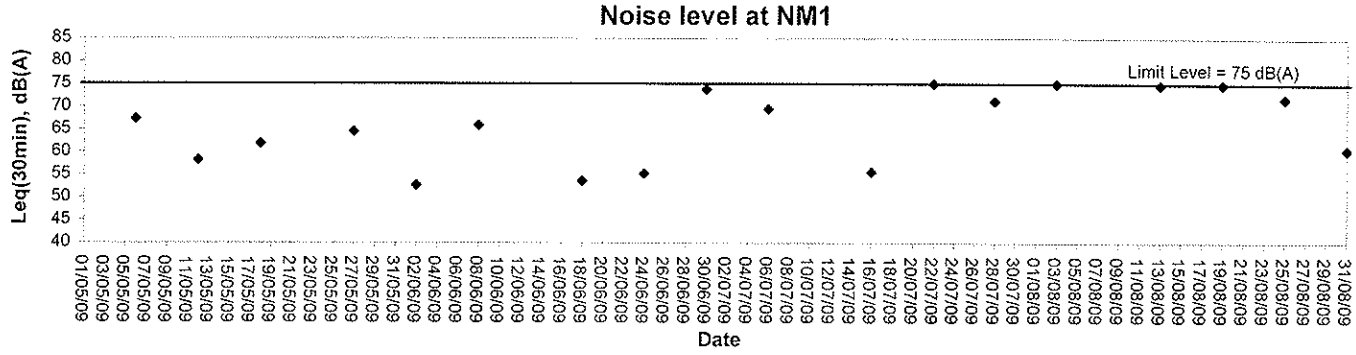
Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
02/06/09	Fine	11:26	11:56	58.8	64.1	53.6	1.4
08/06/09	Cloudy	11:18	11:48	60.8	61.4	47.1	0.5
18/06/09	Sunny	11:30	12:00	53.9	56.8	49.5	1.6
24/06/09	Fine	14:18	14:48	53.3	58.0	40.2	0.3
30/06/09	Fine	10:48	11:18	59.2	61.1	55.7	0.5
06/07/09	Sunny	09:25	09:55	60.4	65.5	57.0	1.3
16/07/09	Fine	11:25	11:55	54.8	57.1	51.2	1.9
22/07/09	Sunny	15:55	16:25	59.2	62.2	54.6	0.5
28/07/09	Sunny	14:45	15:15	58.7	62.2	56.4	1.7
03/08/09	Cloudy	11:13	11:43	75.0	78.2	68.6	0.8
13/08/09	Cloudy	16:45	17:15	58.1	59.5	52.1	0.7
19/08/09	Fine	11:00	11:30	58.1	60.3	50.2	0.0
25/08/09	Sunny	14:10	14:40	63.3	67.2	59.8	0.6\
31/08/09	Fine	09:29	09:59	67.2	69.1	49.3	0.7

Appendix C2

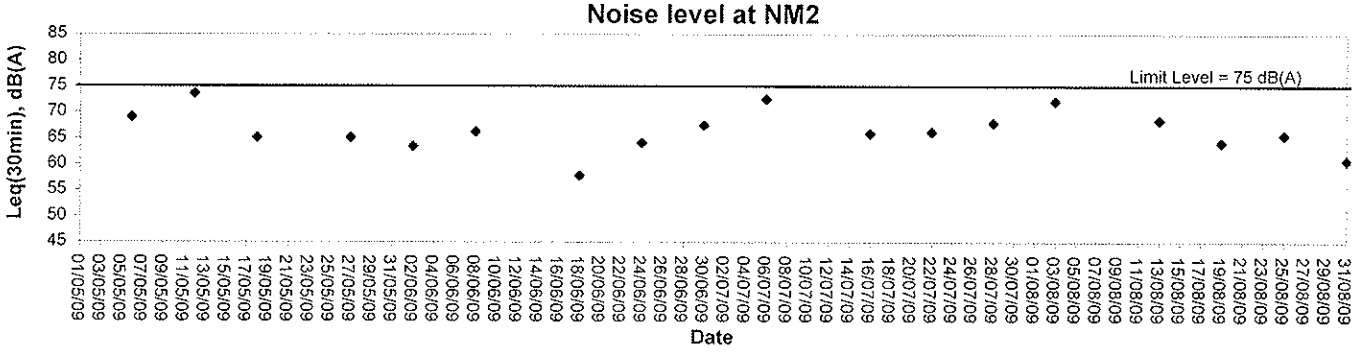
Graphical Plots of Impact Noise Monitoring Data in this Quarter

Noise Monitoring (Day-time)

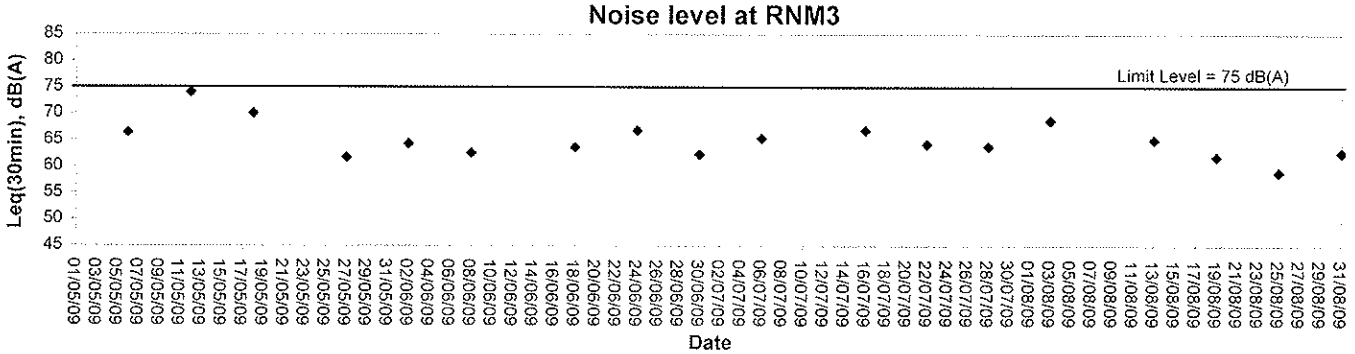
Noise level at NM1



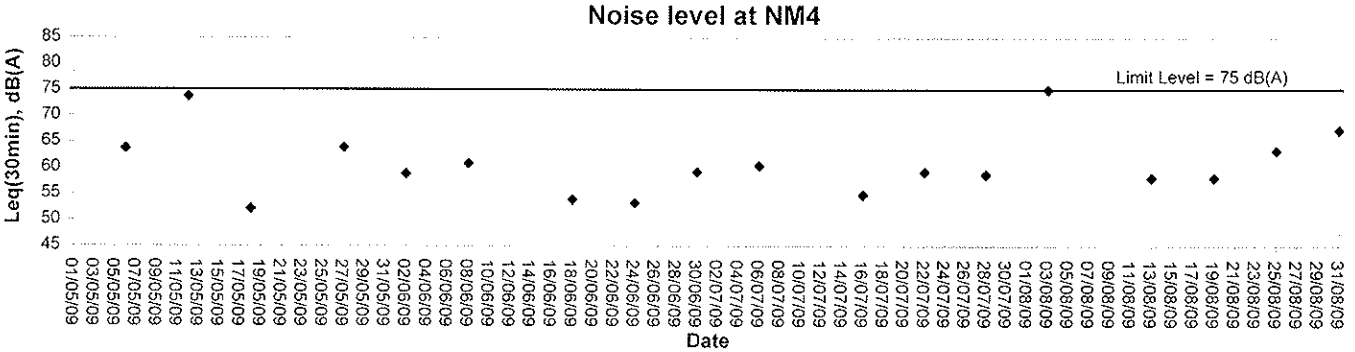
Noise level at NM2



Noise level at RNM3



Noise level at NM4



Appendix D

Environmental Quality Performance (Action / Limit Levels)

Action and Limit levels for 24-hr TSP and 1-hr TSP

Monitoring Station	*24-hr TSP ($\mu g/m^3$)*		*1-hr TSP ($\mu g/m^3$)*	
	Action Level	*Limit Level*	*Action Level*	*Limit Level*
AM1	*173*	*260*	*343*	*500*
AM2	*175*	*260*	*331*	*500*
AM3	*191*	*260*	*353*	*500*

Action and Limit Levels for Noise Monitoring

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

Appendix E

Event-Action Plans

Event / Action Plan for Air Quality

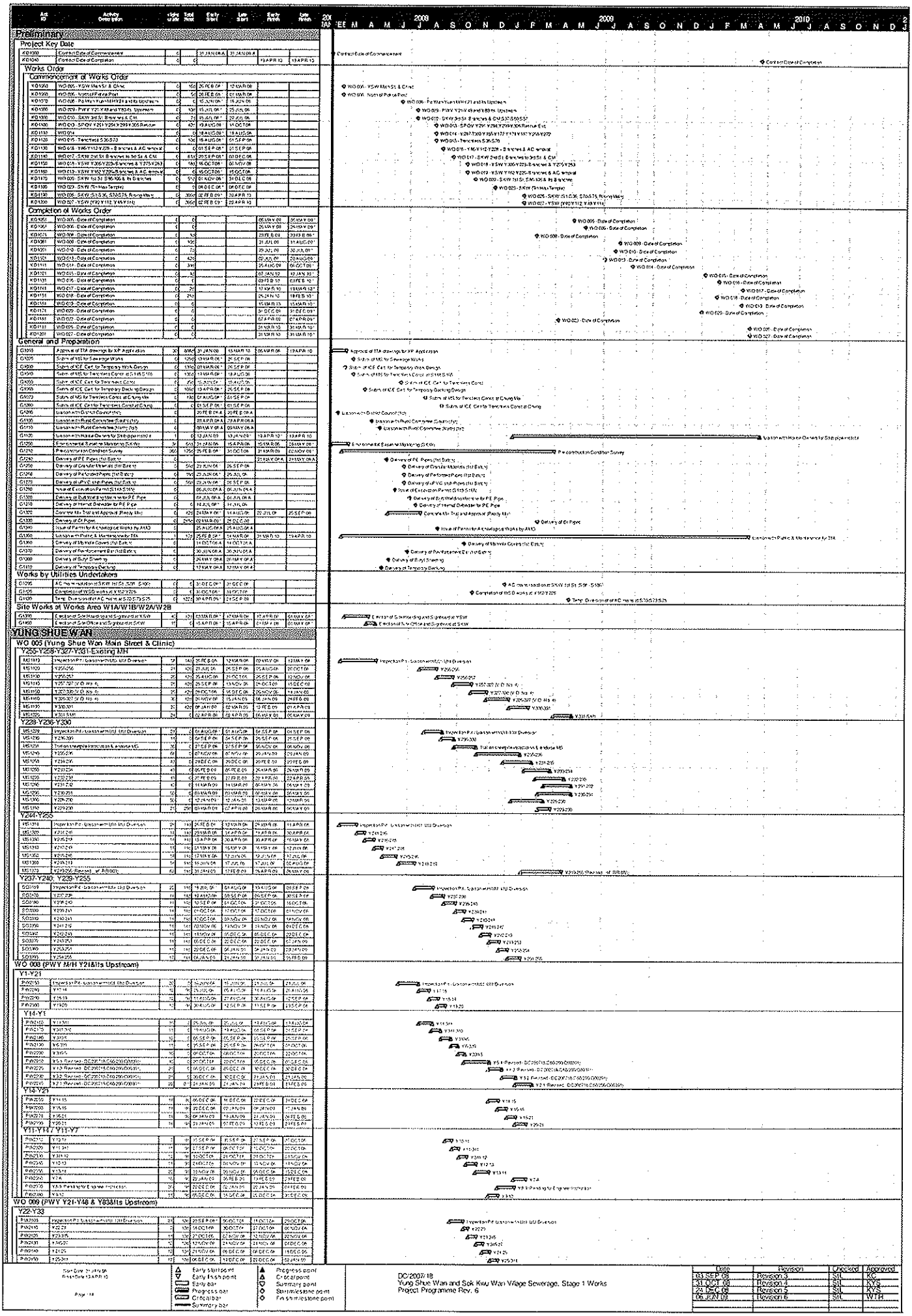
EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Action Level				
Action Level being exceeded for one sample	1. Identify source, investigate the causes of Exceedance and propose remedial measures; 2. Inform IC(E) and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded for two or more consecutive samples	1. Same as the above; 2. Advise the ER on the effectiveness of te proposed remedial measures; 3. Discuss with IC(E) and Contractor on remedial actions required; 4. If exceedance continues, arrange meeting with IC(E) and ER; 5. If exceedance stops, cease additional monitoring.	1. Same as the above; 2. Discuss with ET and Contractor on possible remedial measures; 3. Advise the ET on the effectiveness of the proposed remedial measures; 4. Supervise implementation of remedial measures.	1. Same as the above; 2. Confirm receipt of notification of failure in writing; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
Limit Level				
Limit Level being exceeded for one sample	1. Identify source; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results.	1. Checking monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on the possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial actions properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded for two or more consecutive samples	1. Same as the above; 2. Carry our analysis of Contractor's working procedures to determine possible mitigation to be implemented; 3. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken; 4. If exceedance stops, cease additional monitoring.	1. Discuss with ER, ET and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assume their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Same as the above; 2. In consolidation with the IC(E), agree with the Contractor on the remedial measures to be implemented; 3. 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. Same as the above; 2. Resubmit proposals if problem still not under control; 3. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Construction Noise

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Action level	1. Notify IC(E) and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IC(E), ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures ; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review and investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	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 proper implementation of remedial measures.	1. Submit noise mitigation proposal to IC(E); 2. Implement noise mitigation proposals.
Limit level	1. Identify source; 2. Inform IC(E), ER, EPD and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IC(E), ER and EPD the causes and actions taken for the exceedances; 7. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions to ensure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Same as above; 2. If exceedances continue, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E); 3. Implement the agreed proposals; 4. Resubmit proposals if problem still out of control; 5. Stop the relevant portion of works as determined by ER, until the exceedance is abated.

Appendix F

Construction Programme



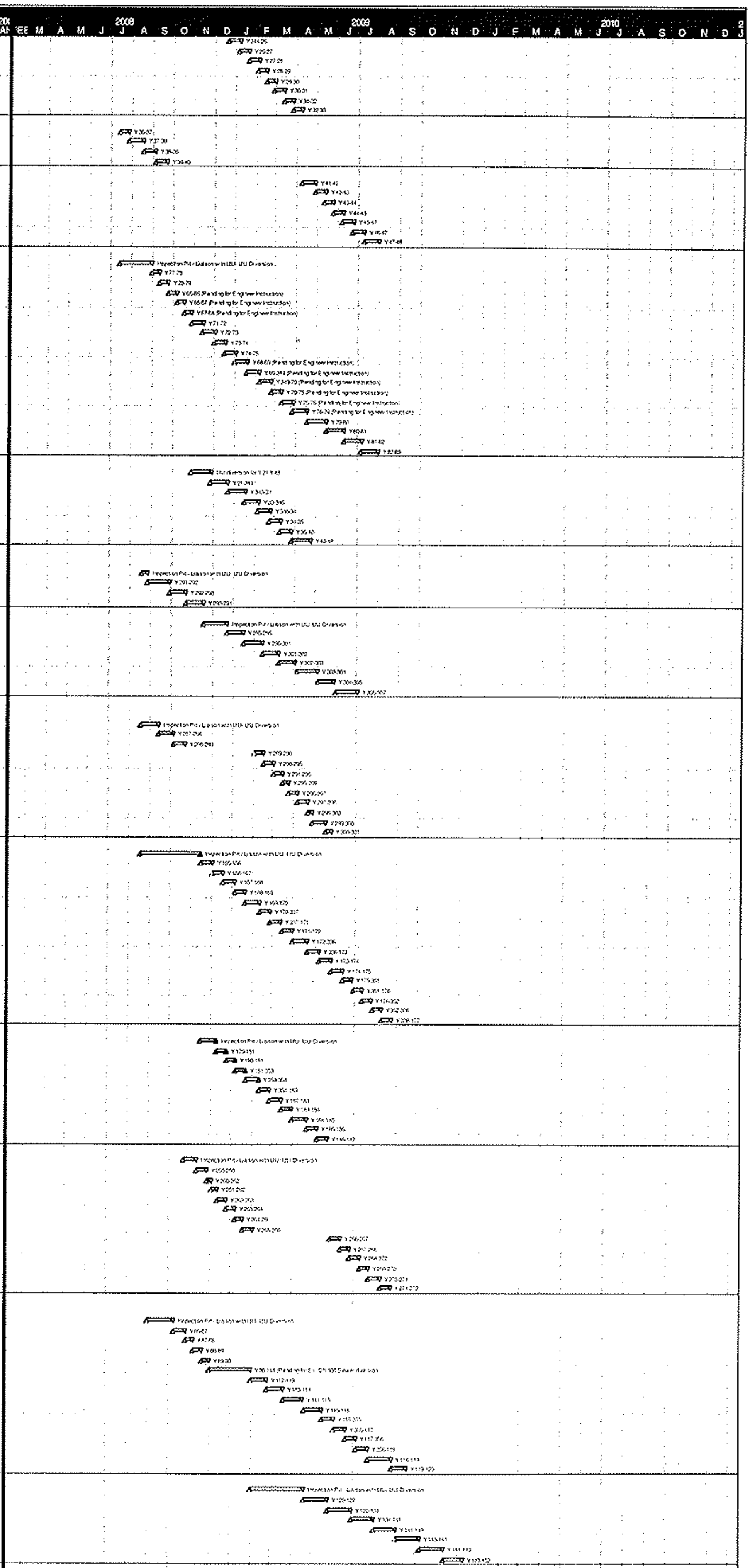
Date	Revision	Checked	Approved
03 SEP 08	Revision 3	SIL	KC
31 OCT 08	Revision 4	SIL	WYK
21 DEC 08	Revision 5	SIL	WYK
06 JAN 09	Revision 6	SIL	WTH

Early start point
Early finish point
Early bar
Progress bar
Critical bar
Summary bar

Progress point
Critical point
Summary point
Start milestone point
Finish milestone point

DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 6

Act ID	Activity Description	Orig Dur	Total Float	Early Start	Late Start	Early Finish	Late Finish
PW2450	Y24-25	12	10d	22DEC08	07JAN09	06JAN09	15JAN09
PW2470	Y25-27	12	10d	06JAN09	17JAN09	20JAN09	03FEB09
PW2480	Y27-28	10	10d	23JAN09	04FEB09	04FEB09	14FEB09
PW2490	Y28-29	10	10d	04FEB09	16FEB09	16FEB09	26FEB09
PW2500	Y29-30	11	10d	16FEB09	27FEB09	28FEB09	11MAR09
PW2510	Y30-31	12	10d	28FEB09	12MAR09	14MAR09	25MAR09
PW2520	Y31-32	11	10d	14MAR09	25MAR09	27MAR09	06APR09
PW2530	Y32-33	12	10d	27MAR09	09APR09	09APR09	22APR09
Y36-Y40							
PW2540	Y36-37	12	10d	15JUL08	25JUL08	29JUL08	14AUG08
PW2550	Y37-38	12	10d	29JUL08	15AUG08	14AUG08	30AUG08
PW2560	Y38-39	12	10d	14AUG08	01SEP08	04SEP08	17SEP08
PW2570	Y39-40	11	10d	06SEP08	20SEP08	22SEP08	04OCT08
Y41-Y48							
PW2580	Y41-42	14	10d	02APR09	24APR09	29APR09	12MAY09
PW2590	Y42-43	12	10d	29APR09	13MAY09	13MAY09	23MAY09
PW2600	Y43-44	10	10d	13MAY09	25MAY09	25MAY09	06JUN09
PW2610	Y44-45	12	10d	25MAY09	08JUN09	08JUN09	18JUN09
PW2620	Y45-47	14	10d	08JUN09	17JUN09	24JUN09	04JUL09
PW2630	Y46-47	15	10d	24JUN09	05JUL09	10JUL09	21JUL09
PW2640	Y47-48	16	10d	12JUL09	22JUL09	31JUL09	11AUG09
Y65-Y83							
PW2921	Inspection Pit - Liaison with U/U U/U Diversion	36	10d	15JUL08	25JUL08	01SEP08	13SEP08
PW2922	Y77-78	7	10d	01SEP08	15SEP08	11SEP08	22SEP08
PW2923	Y78-79	7	10d	12SEP08	22SEP08	25SEP08	06OCT08
PW2930	Y65-66 (Pending for Engineer Instruction)	10	10d	25SEP08	07OCT08	07OCT08	17OCT08
PW2940	Y66-67 (Pending for Engineer Instruction)	12	10d	07OCT08	18OCT08	18OCT08	29OCT08
PW2950	Y67-68 (Pending for Engineer Instruction)	10	10d	18OCT08	30OCT08	30OCT08	10NOV08
PW2951	Y71-72	11	10d	20OCT08	11NOV08	15NOV08	26NOV08
PW2952	Y72-73	11	10d	15NOV08	27NOV08	02DEC08	12DEC08
PW2953	Y73-74	11	10d	02DEC08	13DEC08	18DEC08	29DEC08
PW2954	Y74-75	12	10d	18DEC08	30DEC08	02JAN09	13JAN09
PW2960	Y68-69 (Pending for Engineer Instruction)	10	10d	02JAN09	13JAN09	13JAN09	02FEB09
PW3040	Y69-70 (Pending for Engineer Instruction)	11	10d	13JAN09	03FEB09	07FEB09	14FEB09
PW3050	Y70-73 (Pending for Engineer Instruction)	11	10d	07FEB09	19FEB09	24FEB09	06MAR09
PW3060	Y73-75 (Pending for Engineer Instruction)	14	10d	21FEB09	07MAR09	12MAR09	23MAR09
PW3061	Y75-76 (Pending for Engineer Instruction)	14	10d	12MAR09	24MAR09	29MAR09	09APR09
PW3070	Y76-79 (Pending for Engineer Instruction)	11	10d	29MAR09	14APR09	15APR09	29APR09
PW3080	Y79-80	22	10d	15APR09	30APR09	16MAY09	27MAY09
PW3090	Y80-81	21	10d	16MAY09	29MAY09	12JUN09	23JUN09
PW3100	Y81-82	21	10d	12JUN09	24JUN09	07JUL09	17JUL09
PW3110	Y82-83	21	10d	07JUL09	18JUL09	31JUL09	11AUG09
Y21-Y48							
PW2310	DU diversion for Y21-Y48	25	89d	30OCT08	15FEB09	29NOV08	15MAR09
PW2400	Y21-303	21	89d	29NOV08	12MAR09	23DEC08	11APR09
PW2500	Y30-33	21	89d	22DEC08	15APR09	12JAN09	11MAY09
PW2520	Y33-36	18	89d	17JAN09	12MAY09	05FEB09	22MAY09
PW2550	Y36-31	24	89d	06FEB09	29MAY09	28FEB09	15JUN09
PW2600	Y34-35	21	89d	23FEB09	15JUN09	11MAR09	01JUL09
PW2700	Y35-42	24	89d	11MAR09	02JUL09	27MAR09	17JUL09
PW2710	Y42-45	21	89d	27MAR09	15JUL09	25APR09	11AUG09
WO 013 (SPOV Y291-Y294, Y299-Y305)							
Y291-Y294							
RE1550	Inspection Pit - Liaison with U/U U/U Diversion	3	42d	19AUG08	15OCT08	27AUG08	23OCT08
RE1560	Y291-292	21	42d	25AUG08	21OCT08	20SEP08	17NOV08
RE1570	Y292-293	21	42d	20SEP08	19NOV08	23OCT08	11DEC08
RE1580	Y293-294	21	42d	24OCT08	12DEC08	17NOV08	08JAN09
Y294-Y305							
RE1620	Inspection Pit - Liaison with U/U U/U Diversion	20	42d	14NOV08	07JAN09	27DEC08	13FEB09
RE1630	Y295-296	21	42d	23DEC08	11FEB09	15JAN09	12MAR09
RE1640	Y299-301	21	42d	17JAN09	11MAR09	13FEB09	11APR09
RE1650	Y301-302	21	42d	14FEB09	06APR09	10MAR09	05MAY09
RE1660	Y302-303	21	42d	11MAR09	06MAY09	03APR09	30MAY09
RE1670	Y303-304	21	42d	06APR09	02JUN09	05MAY09	25JUN09
RE1680	Y304-305	21	42d	06MAY09	25JUN09	30MAY09	20JUL09
RE1700	Y305-307	22	42d	02JUN09	21JUL09	02JUL09	20AUG09
WO 014 (SPOV,SPNV & KL)							
Y287 - Y301							
SO1190	Inspection Pit - Liaison with U/U U/U Diversion	13	34d	14AUG08	07OCT08	13SEP08	28OCT08
SO1195	Y287-288	11	34d	13SEP08	29OCT08	01OCT08	13NOV08
SO1200	Y288-290	13	34d	06OCT08	11NOV08	23OCT08	02DEC08
SO1210	Y289-290	13	34d	09FEB09	21MAR09	16FEB09	27MAR09
SO1220	Y290-295	12	34d	12FEB09	25MAR09	02MAR09	15APR09
SO1250	Y294-295	12	34d	07MAR09	15APR09	15MAR09	29APR09
SO1270	Y295-296	7	34d	12MAR09	30APR09	24MAR09	09MAY09
SO1280	Y296-297	12	34d	25MAR09	11MAY09	06APR09	21MAY09
SO1290	Y297-298	12	34d	07APR09	22MAY09	21APR09	04JUN09
SO1300	Y298-300	7	34d	22APR09	06JUN09	29APR09	12JUN09
SO1315	Y299-300	14	34d	30APR09	13JUN09	18MAY09	29JUN09
SO1320	Y300-301	7	34d	19MAY09	30JUN09	26MAY09	07JUL09
Y165 - Y177							
SN3191	Inspection Pit - Liaison with U/U U/U Diversion	69	0	18AUG08	18AUG08	15NOV08	15NOV08
SN3200	Y165-166	14	34d	17NOV08	26DEC08	02DEC08	12JAN09
SN3210	Y166-167	14	34d	03DEC08	13JAN09	19DEC08	31JAN09
SN3220	Y167-168	14	34d	19DEC08	02FEB09	06JAN09	17FEB09
SN3230	Y168-169	14	34d	06JAN09	19FEB09	21JAN09	06MAR09
SN3240	Y169-170	14	34d	22JAN09	06MAR09	10FEB09	21MAR09
SN3250	Y170-337	14	34d	11FEB09	23MAR09	26FEB09	08APR09
SN3260	Y337-171	14	34d	27FEB09	09APR09	14MAR09	29APR09
SN3270	Y171-172	14	34d	16MAR09	29APR09	31MAR09	15MAY09
SN3280	Y172-206	14	34d	01APR09	18MAY09	21APR09	04JUN09
SN3290	Y206-173	14	34d	22APR09	05JUN09	09MAY09	20JUN09
SN3300	Y173-174	14	34d	11MAY09	22JUN09	26MAY09	07JUL09
SN3305	Y174-175	14	34d	27MAY09	08JUL09	13JUN09	23JUL09
SN3310	Y175-351	12	34d	15JUN09	24JUL09	27JUN09	06AUG09
SN3320	Y351-176	12	34d	29JUN09	07AUG09	11JUL09	20AUG09
SN3330	Y176-352	12	34d	13JUL09	21AUG09	25JUL09	03SEP09
SN3340	Y352-206	12	34d	27JUL09	04SEP09	08AUG09	17SEP09
SN3350	Y206-177	11	34d	10AUG09	18SEP09	24AUG09	06OCT09
Y179 - Y187							
SN3060	Inspection Pit - Liaison with U/U U/U Diversion	21	0	17NOV08	17NOV08	10DEC08	10DEC08
SN3070	Y179-181	12	0	11DEC08	11DEC08	24DEC08	24DEC08
SN3080	Y180-181	12	0	25DEC08	25DEC08	08JAN09	08JAN09
SN3090	Y181-353	12	0	09JAN09	09JAN09	22JAN09	22JAN09
SN3100	Y353-354	18	0	23JAN09	23JAN09	11FEB09	11FEB09
SN3110	Y354-183	18	113d	12FEB09	08JUN09	27FEB09	18JUN09
SN3120	Y183-184	18	113d	28FEB09	20JUN09	16MAR09	04AUG09
SN3130	Y184-185	24	113d	17MAR09	06AUG09	01APR09	20AUG09
SN3140	Y185-186	24	113d	02APR09	24AUG09	22APR09	06SEP09
SN3150	Y186-187	12	113d	23APR09	07SEP09	08MAY09	19SEP09
SN3160	Y186-187	12	113d	09MAY09	21SEP09	22MAY09	06OCT09
Y259 - Y272							
KL2010	Inspection Pit - Liaison with U/U U/U Diversion	15	34d	24OCT08	03DEC08	13NOV08	19DEC08
KL2020	Y259-260	14	34d	14NOV08	20DEC08	29NOV08	06JAN09
KL2030	Y260-262	5	34d	27NOV08	07JAN09	04DEC08	13JAN09
KL2040	Y261-262	5	34d	06DEC08	15JAN09	12DEC08	22JAN09
KL2050	Y262-263	12	34d	13DEC08	23JAN09	24DEC08	06FEB09
KL2060	Y263-264	12	34d	25DEC08	07FEB09	09JAN09	19FEB09
KL2070	Y264-265	12	34d	07JAN09	11FEB09	17JAN09	02MAR09
KL2080	Y265-266	12	34d	13JAN09	03MAR09	02FEB09	13MAR09
KL2090	Y266-267	12	34d	27MAY09	04JUL09	11JUN09	21JUL09
KL2100	Y267-268	12	34d	12JUN09	22JUL09	26JUN09	04AUG09
KL2110	Y268-272	12	34d	29JUN09	05AUG09	09JUL09	18AUG09
KL2120	Y269-270	12	34d	10JUL09	19AUG09	23JUL09	01SEP09
KL2130	Y270-271	11	34d	24JUL09	02SEP09	06AUG09	17SEP09
KL2140	Y271-272	11	34d	12AUG09	18SEP09	25AUG09	05OCT09
WO 016 (YSWMSt. Y86-Y112-Y228)							
Y86-Y90-Y114, Y112-Y120							
MS1400	Inspection Pit - Liaison with U/U U/U Diversion	25	46d	01SEP08	01NOV08	10OCT08	01DEC08
MS1390	Y86-87	11	46d	11OCT08	29DEC08	27OCT08	19DEC08
MS1400	Y87-88	10	46d	28OCT08	20DEC08	07NOV08	31DEC08
MS1410	Y88-89	10	46d	08NOV08	02JAN09	19NOV08	13JAN09
MS1500	Y89-90	10	46d	20NOV08	14JAN09	01DEC08	24JAN09
MS1510	Y90-114 (Pending for Ex. DN100 Sewer diversion)	9	46d	02DEC08	29JAN09	30JAN09	25MAR09
MS1600	Y112-113	25	113d	31JAN09	22JUN09	24FEB09	15JUL09
MS1610	Y113-114	25	113d	25FEB09	16JUL09	20MAR09	08AUG09
MS1620	Y114-115	25	113d	21MAR09	10AUG09	15APR09	02SEP09
MS1630	Y115-116	21	113d	20APR09	03SEP09	15MAY09	05SEP09
MS1640	Y116-205	19	113d	16MAY09	25SEP09	03JUN09	13OCT09
MS1650	Y205-117	19	113d	04JUN09	16OCT09	12JUN09	02NOV09
MS1700	Y117-206	11	113d	20JUN09	01NOV09	06JUL09	11NOV09
MS1710	Y206-119	14	113d	07JUL09	12NOV09	22JUL09	01DEC09
MS1720	Y118-119	30	113d	23JUL09	09DEC09	26AUG09	11JAN10
MS1730	Y119-120	22	113d	27AUG09	12JAN10	18SEP09	03FEB10
Y120-Y152 incl removal of AC pipes							
MS1730	Inspection Pit - Liaison with U/U U/U Diversion	51	46d	31JAN09	26MAR09	22APR09	17JUN09
MS1740	Y120-122	29	46d	21APR09	18JUN09	25MAY09	20JUL09
MS1750	Y122-134	29	46d	26MAY09	21JUL09	29JUN09	24AUG09
MS1760	Y134-141	25	46d	30JUN09	22AUG09	31JUL09	21SEP09
MS1770	Y141-149	29	46d	01AUG09	21SEP09	02SEP09	20OCT09
MS1780	Y149-151	29	46d	03SEP09	20OCT09	07OCT09	01DEC09
MS1790	Y151-152	29	46d	08OCT09	02DEC09	10NOV09	05JAN10
MS1800	Y152-152	29	46d	11NOV09	06JAN10	09DEC09	03FEB10
Branches of Y120-Y152 (seaside)							
MS1900	Inspection Pit - Liaison with U/U U/U Diversion	17	21d	01SEP08	09OCT08	27SEP08	22OCT08
MS1910	Y121-122	18	21d	29SEP08	23OCT08	11OCT08	07NOV08
MS1925	Y123-131	21	21d	15OCT08	06NOV08	07NOV08	07DEC08

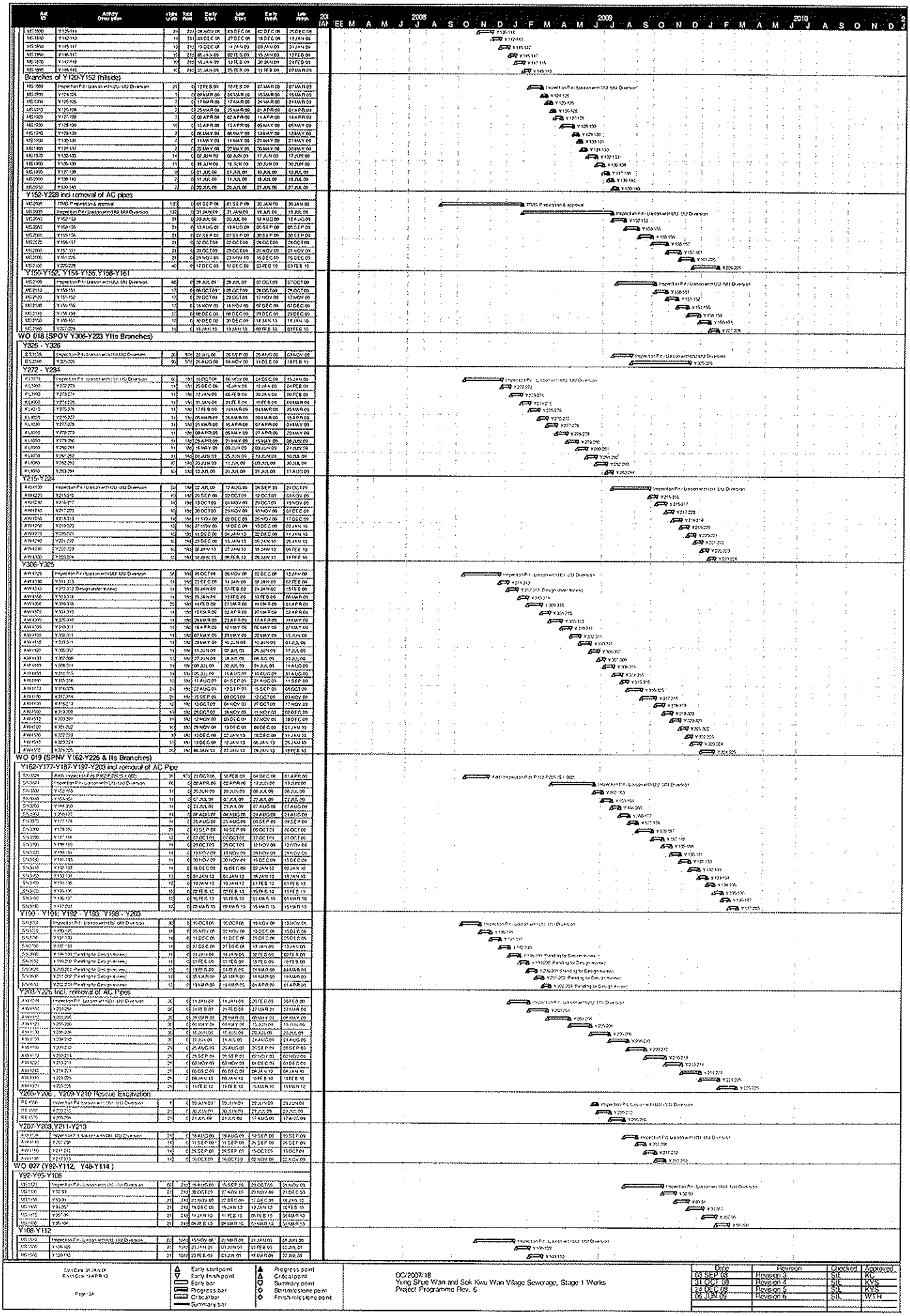


Start Date 01JAN08
Finish Date 13APR10

Symbol	Meaning
△	Early start point
▽	Early finish point
▭	Early bar
▬	Progress bar
▭	Critical bar
—	Summary bar
▲	Progress point
△	Critical point
▽	Summary point
◇	Start milestone point
◇	Finish milestone point

DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 6

Date	Revision	Checked	Approved
03 SEP 08	Revision 3	SIL	KC
31 OCT 08	Revision 4	SIL	KYS
24 DEC 08	Revision 5	SIL	KYS
05 JUN 09	Revision 6	SIL	WTH



Start Date 31 JAN 08
Print Date 14 APR 09

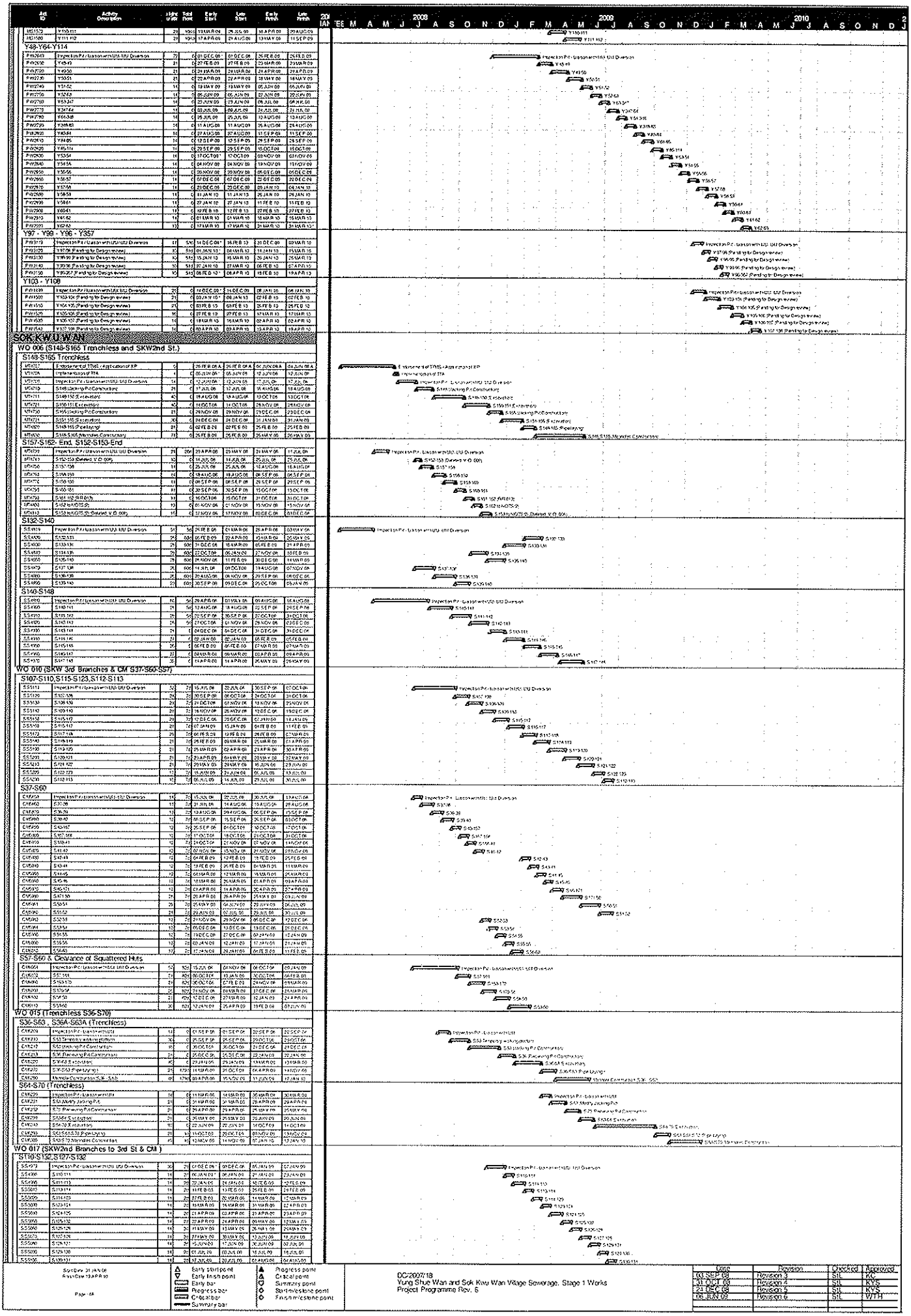
Page 3A

Early start point
Early finish point
Early bar
Progress bar
Critical bar
Summary bar

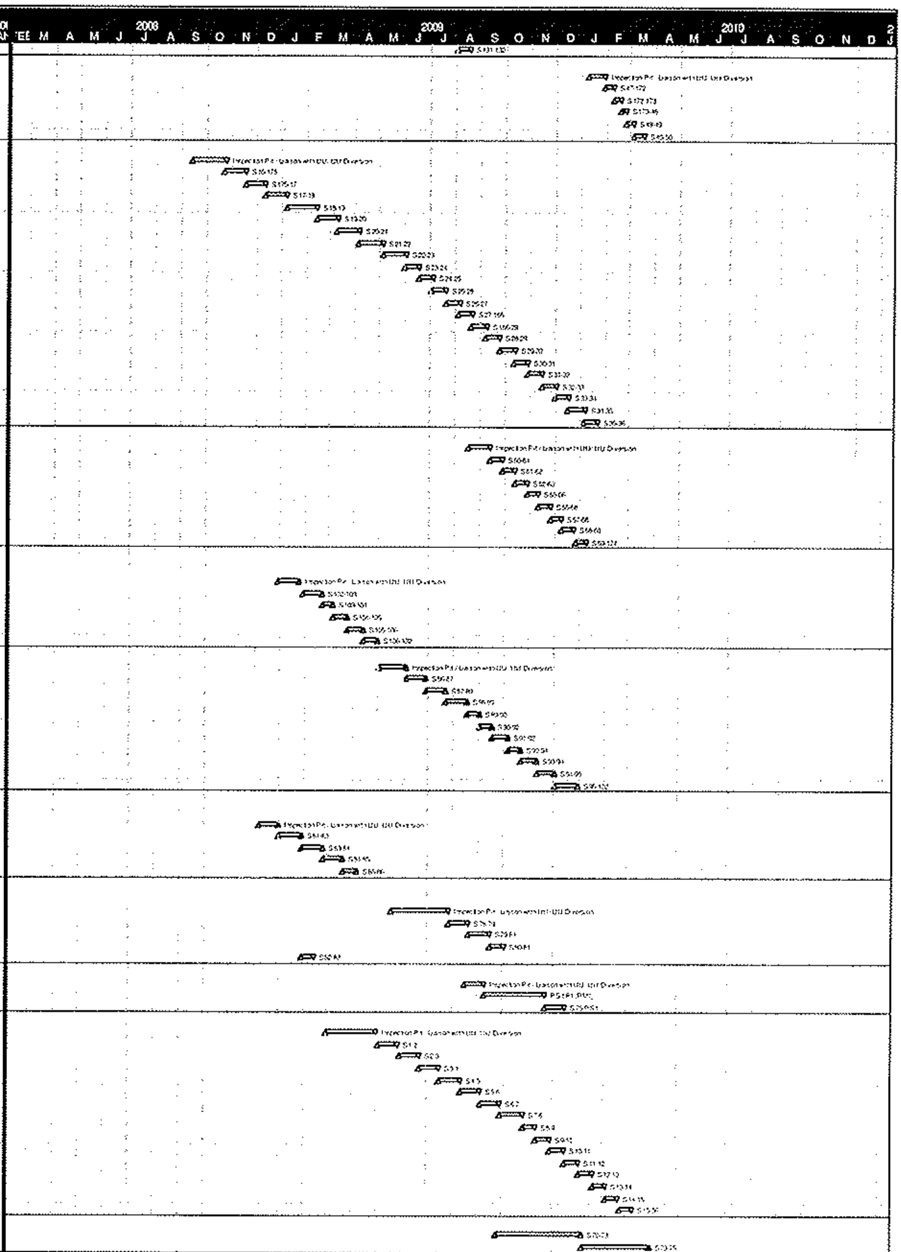
Progress point
Critical point
Summary point
Start milestone point
Finish milestone point

DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 6

Date	Revision	Checked	Approved
03 SEP 08	Revision 3	SIL	KC
31 OCT 08	Revision 4	SIL	KYS
24 DEC 08	Revision 5	SIL	KYS
06 JUN 09	Revision 6	SIL	WYH


Act ID
Activity Description
Orig Dur
Total Float
Early Start
Late Start
Early Finish
Late Finish
2008
2009
2010
Y148-Y64-Y114
Y97 - Y98 - Y96 - Y357
Y103 - Y108
SOK KWU WAN
WO 006 (S148-S165 Trenchless and SKW2nd St.)
S148-S165 Trenchless
S157-S162- End, S152-S153-End
S132-S140
S140-S148
WO 010 (SKW 3rd Branches & CM S37-S60-S57)
S107-S110,S115-S123,S112-S113
S37-S60
S57-S60 & Clearance of Squattered Huts
WO 015 (Trenchless S36-S70)
S36-S63 , S36A-S63A (Trenchless)
S64-S70 (Trenchless)
WO 017 (SKW2nd Branches to 3rd St & CM)
S110-S132,S127-S132
Start Date 01 JAN 08
Finish Date 13 APR 10
Page 4A
Early start point
Early finish point
Early bar
Progress bar
Critical bar
Summary bar
Progress point
Critical point
Summary point
Start milestone point
Finish milestone point
DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 5
Date
Revision
Checked
Approved
03 SEP 08
Revision 3
SIL
KC
31 OCT 08
Revision 4
SIL
KYS
23 DEC 08
Revision 5
SIL
KYS
05 JUN 09
Revision 6
SIL
WTH

Act ID	Activity Description	Orig Dur	Total Float	Early Start	Late Start	Early Finish	Late Finish
SS5110	S131-132	14	2	03 AUG 09	05 AUG 09	18 AUG 09	20 AUG 09
S47-S50							
AW6260	Inspection Pit / Liaison with U/U - U/U Diversion	17	2	11 JAN 10	13 JAN 10	29 JAN 10	01 FEB 10
AW6270	S47-172	9	2	30 JAN 10	02 FEB 10	09 FEB 10	11 FEB 10
AW6280	S172-173	7	2	10 FEB 10	12 FEB 10	17 FEB 10	19 FEB 10
AW6290	S173-48	7	2	18 FEB 10	20 FEB 10	25 FEB 10	27 FEB 10
AW6300	S48-49	7	2	26 FEB 10	01 MAR 10	05 MAR 10	08 MAR 10
AW6310	S49-50	10	2	06 MAR 10	09 MAR 10	17 MAR 10	19 MAR 10
S16-S36							
CM6620	Inspection Pit / Liaison with U/U - U/U Diversion	30	49	15 SEP 08	15 NOV 08	24 OCT 08	13 DEC 08
CM6640	S16-175	21	49	24 OCT 08	20 DEC 08	18 NOV 08	14 JAN 09
CM6650	S175-17	21	49	18 NOV 08	15 JAN 09	12 DEC 08	11 FEB 09
CM6660	S17-18	21	49	12 DEC 08	12 FEB 09	07 JAN 09	07 MAR 09
CM6670	S18-19	30	49	07 JAN 09	09 MAR 09	14 FEB 09	16 APR 09
CM6680	S19-20	21	49	14 FEB 09	17 APR 09	11 MAR 09	13 MAY 09
CM6690	S20-21	21	49	11 MAR 09	14 MAY 09	06 APR 09	09 JUN 09
CM6700	S21-22	21	49	06 APR 09	10 JUN 09	06 MAY 09	03 JUL 09
CM6710	S22-23	21	49	06 MAY 09	04 JUL 09	02 JUN 09	29 JUL 09
CM6720	S23-24	17	49	02 JUN 09	29 JUL 09	18 JUN 09	13 AUG 09
CM6730	S24-25	14	49	24 JUN 09	11 AUG 09	06 JUL 09	29 AUG 09
CM6740	S25-26	14	49	04 JUL 09	31 AUG 09	21 JUL 09	15 SEP 09
CM6750	S26-27	14	49	21 JUL 09	15 SEP 09	06 AUG 09	02 OCT 09
CM6760	S27-106	14	49	06 AUG 09	06 OCT 09	27 AUG 09	20 OCT 09
CM6770	S106-28	14	49	22 AUG 09	21 OCT 09	08 SEP 09	06 NOV 09
CM6780	S28-29	14	49	09 SEP 09	07 NOV 09	24 SEP 09	23 NOV 09
CM6790	S29-30	14	49	24 SEP 09	24 NOV 09	13 OCT 09	09 DEC 09
CM6800	S30-31	14	49	13 OCT 09	10 DEC 09	30 OCT 09	29 DEC 09
CM6810	S31-32	14	49	30 OCT 09	29 DEC 09	18 NOV 09	13 JAN 10
CM6820	S32-33	14	49	13 NOV 09	14 JAN 10	02 DEC 09	29 JAN 10
CM6830	S33-34	14	49	02 DEC 09	30 JAN 10	15 DEC 09	11 FEB 10
CM6840	S34-35	14	49	15 DEC 09	15 FEB 10	06 JAN 10	03 MAR 10
CM6850	S35-36	14	49	06 JAN 10	04 MAR 10	22 JAN 10	19 MAR 10
S60-S70, Incl remove AC at S67-S68							
CM6119	Inspection Pit / Liaison with U/U - U/U Diversion	21	2	19 AUG 09	21 AUG 09	14 SEP 09	15 SEP 09
CM6120	S60-61	12	2	15 SEP 09	17 SEP 09	28 SEP 09	30 SEP 09
CM6130	S61-62	12	2	29 SEP 09	02 OCT 09	14 OCT 09	16 OCT 09
CM6140	S62-63	12	2	15 OCT 09	17 OCT 09	29 OCT 09	31 OCT 09
CM6150	S65-66	12	2	30 OCT 09	02 NOV 09	12 NOV 09	14 NOV 09
CM6160	S66-68	12	2	13 NOV 09	16 NOV 09	26 NOV 09	29 NOV 09
CM6170	S67-68	12	2	27 NOV 09	30 NOV 09	10 DEC 09	12 DEC 09
CM6180	S68-69	12	2	11 DEC 09	14 DEC 09	24 DEC 09	29 DEC 09
CM6190	S69-174	12	2	28 DEC 09	30 DEC 09	09 JAN 10	12 JAN 10
WO 020 (SKW 1st St. S86-S106 & Its Branches)							
S102-S106-S132 Incl remove AC							
SS5130	Inspection Pit / Liaison with U/U - U/U Diversion	21	0	31 DEC 08	31 DEC 08	24 JAN 09	24 JAN 09
SS5240	S102-103	21	0	29 JAN 09	29 JAN 09	21 FEB 09	21 FEB 09
SS5250	S103-104	12	0	23 FEB 09	23 FEB 09	07 MAR 09	07 MAR 09
SS5260	S104-105	11	0	09 MAR 09	09 MAR 09	24 MAR 09	24 MAR 09
SS5270	S105-106	14	0	25 MAR 09	25 MAR 09	14 APR 09	14 APR 09
SS5290	S106-132	16	0	15 APR 09	15 APR 09	30 APR 09	30 APR 09
S86-S102, S96-S102 Incl remove AC							
SS5279	Inspection Pit / Liaison with U/U - U/U Diversion	28	0	04 MAY 09	04 MAY 09	04 JUN 09	04 JUN 09
SS5290	S86-87	21	0	05 JUN 09	05 JUN 09	29 JUN 09	29 JUN 09
SS5300	S87-88	21	0	30 JUN 09	30 JUN 09	23 JUL 09	23 JUL 09
SS5310	S88-89	21	0	24 JUL 09	24 JUL 09	17 AUG 09	17 AUG 09
SS5320	S89-90	11	0	18 AUG 09	18 AUG 09	02 SEP 09	02 SEP 09
SS5330	S90-92	11	0	03 SEP 09	03 SEP 09	15 SEP 09	15 SEP 09
SS5340	S91-92	14	0	19 SEP 09	19 SEP 09	07 OCT 09	07 OCT 09
SS5350	S92-93	14	0	08 OCT 09	08 OCT 09	23 OCT 09	23 OCT 09
SS5360	S93-94	14	0	24 OCT 09	24 OCT 09	10 NOV 09	10 NOV 09
SS5370	S94-95	21	0	11 NOV 09	11 NOV 09	04 DEC 09	04 DEC 09
SS5380	S95-132	21	0	05 DEC 09	05 DEC 09	31 DEC 09	31 DEC 09
WO 023 SKW Tin Hau Temple							
S81-S86 Incl removal of AC Pipe							
TH5419	Inspection Pit / Liaison with U/U - U/U Diversion	23	0	08 DEC 08	08 DEC 08	31 DEC 08	31 DEC 08
TH5420	S81-83	23	0	02 JAN 09	02 JAN 09	29 JAN 09	29 JAN 09
TH5440	S83-84	25	0	30 JAN 09	30 JAN 09	23 FEB 09	23 FEB 09
TH5450	S84-85	23	0	24 FEB 09	24 FEB 09	19 MAR 09	19 MAR 09
TH5460	S85-86	15	0	20 MAR 09	20 MAR 09	07 APR 09	07 APR 09
WO 026 (CM S1-S36, S70-S75, S78-S81, Rising Main							
S78-S79, S80.1, S82.1							
TH5369	Inspection Pit / Liaison with U/U - U/U Diversion	66	176	19 MAY 09	10 DEC 09	29 JUL 09	12 FEB 10
TH5390	S78-79	21	176	29 JUL 09	13 FEB 10	21 AUG 09	09 MAR 10
TH5400	S79-81	21	176	22 AUG 09	10 MAR 10	15 SEP 09	02 APR 10
TH5410	S80-81	14	176	15 SEP 09	03 APR 10	02 OCT 09	19 APR 10
TH5420	S82-83	11	256	30 JAN 09	03 APR 10	11 FEB 09	19 APR 10
Twin DN150 Rising Main							
TH5360	Inspection Pit / Liaison with U/U - U/U Diversion	23	96	12 AUG 09	01 DEC 09	09 SEP 09	24 DEC 09
TH5470	PS1-81 (RUS)	64	96	10 SEP 09	28 DEC 09	21 NOV 09	06 MAR 10
TH5490	S75-PS1	23	96	23 NOV 09	08 MAR 10	16 DEC 09	31 MAR 10
S1-S15-S36 Incl removal of AC Pipe							
CM7481	Inspection Pit / Liaison with U/U - U/U Diversion	42	130	02 MAR 09	21 MAR 09	30 APR 09	05 MAY 09
CM5400	S1-2	21	130	01 MAY 09	20 MAY 09	27 MAY 09	20 JUN 09
CM7600	S2-3	21	130	20 MAY 09	22 JUN 09	21 JUN 09	15 JUL 09
CM7610	S3-4	21	130	24 JUN 09	16 JUL 09	17 JUL 09	08 AUG 09
CM7620	S4-5	21	130	18 JUL 09	10 AUG 09	11 AUG 09	02 SEP 09
CM7630	S5-6	21	130	12 AUG 09	03 SEP 09	04 SEP 09	26 SEP 09
CM7635	S6-7	21	130	05 SEP 09	28 SEP 09	29 SEP 09	21 OCT 09
CM7640	S7-8	21	130	30 SEP 09	21 OCT 09	27 OCT 09	18 NOV 09
CM7650	S8-9	14	130	28 OCT 09	12 NOV 09	12 NOV 09	04 DEC 09
CM7660	S9-10	14	130	13 NOV 09	05 DEC 09	24 NOV 09	21 DEC 09
CM7670	S10-11	14	130	20 NOV 09	22 DEC 09	15 DEC 09	08 JAN 10
CM7680	S11-12	14	130	16 DEC 09	09 JAN 10	02 JAN 10	25 JAN 10
CM7690	S12-13	14	130	04 JAN 10	26 JAN 10	19 JAN 10	10 FEB 10
CM7695	S13-14	14	130	20 JAN 10	11 FEB 10	04 FEB 10	25 FEB 10
CM7700	S14-15	14	130	05 FEB 10	27 FEB 10	25 FEB 10	15 MAR 10
CM7710	S15-36	14	130	22 FEB 10	16 MAR 10	09 MAR 10	31 MAR 10
S70-S75 (Trenchless)							
CM8270	S70-73	87	0	21 SEP 09	21 SEP 09	08 JAN 10	08 JAN 10
CM8280	S73-75	70	0	09 JAN 10	09 JAN 10	31 MAR 10	31 MAR 10



Data Date 31 JUL 08 Run Date 13 APR 10 Page 1A	△ Early start point ▽ Early finish point Early bar Progress bar Critical bar Summary bar	▲ Progress point △ Critical point ▽ Summary point ◇ Start milestone point ◇ Finish milestone point

DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 6

Date	Revision	Checked	Approved
03 SEP 08	Revision 3	StL	KC
31 OCT 08	Revision 4	StL	KYS
24 DEC 08	Revision 5	StL	KYS
06 JUN 09	Revision 6	StL	WTR

Appendix G

Summary of Implementation Status of Mitigation Measures during Site Inspection

Environmental Mitigation Implementation Schedule

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
▪ Stockpiles of imported material kept on site should be contained within hoarding, dampened and / or covered during dry and windy weather.	All areas		√		
▪ Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses.	All areas	√			
▪ Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like.	All areas	√			
▪ Any vehicle used for moving sands, aggregates and construction waste should have properly fitting side and tail boards. Materials should not be loaded to a level higher than the side and tail boards, and should be covered by a clean tarpaulin.	All areas	√			
▪ Unpaved areas should be watered regularly to avoid dust generation.	Site Egress	√			
▪ The enclosures should be around the main dust-generating activities.	All areas	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	All areas	√			
▪ Open burning should be prohibited.	All areas	√			
Noise Impact					
▪ Quite powered mechanical equipment (PME) or method should be used.	All areas	√			
▪ The number plant should be restricted (1 item for each type of plant).	All areas	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	All areas		√		
▪ Mobile plant, if any, should be sited as far away from NSRs as possible.	All areas	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	All areas	√			
▪ Plant known to emit noise strongly should be orientated so that the noise is directed away from nearby NSRs.	All areas	√			
▪ The constructions works should be scheduled to minimize noise nuisance.	All areas	√			
▪ Air compressors and hand held breakers should have noise labels.	All areas		√		
▪ Compressors and generators should operate with door closed.	All areas	√			
Water Quality					
General Construction Works					
▪ Debris and rubbish generated on-site should be collected, handled and disposed of properly to avoid entering the nearby coastal water and stormwater drains.	All areas		√		
▪ All fuel tanks and storage areas should be provided with locks and be sited on sealed area, within bunds of a capacity equal to 110% of the storage capacity of the largest tank.	All areas	√			
▪ Open drainage channels and culverts near the works areas should be covered to block the entrance of large debris and refuse.	All areas		√		

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Waste Management					
General Site Wastes					
• Appropriate measures, such as transporting wastes in enclosed containers, should be taken to minimize windblown litter and dust to nearby environment.	All areas	√			
• Sufficient waste disposal points and regular waste collection for disposal should be provided.	All areas	√			
• A collection area for construction site waste should be provided where waste can be stored prior to removal form site.	All areas	√			
• Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	All areas	√			
• Records of the quantities of waste generated, recycled and disposed should be kept and maintained.	All areas	√			
• Different types of waste should be segregated and stored in different container, skips or stockpiles to enhance reuse or recycling of material and their proper disposal.	All areas	√			
Chemical Wastes					
• After use, chemical waste should be handled according to the Code of Practice on the Package, Labelling and Storage of Chemical Wastes.	All areas	√			
• Any unused chemicals or those with remaining functional capacity should be recycled.	All areas	√			
• Waste should be properly stored on site within suitably designed containers and should be collected by an approved licensed waste collectors for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordnance.	All areas	√			
• Any service shop and minor maintenance facilities should be located on hard standing within a bunded area, and sumps and oil interceptors should be provided.	All areas	√			
• Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should be undertaken within the designated areas equipped control these discharges.	All areas	√			
Construction and Demolition (C&D) Wastes					
• C&D waste should be separated on site before disposal.	All areas	√			
• Inert material, such as concrete and rubble, should be re-used on site.	All areas	√			
• Steel and other metals should be separated for re-use and / or recycling prior to disposal of C&D material.	All areas	√			
Ecological Impact					
• Labelling and fencing of the uncommon tree species.	All areas	√			
• Avoidance of use of woodland habitats as Works Area, in particular where trees located.	All areas	√			

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Landscape and Visual Impact					
• Existing trees should be retained.	All areas	√			
• Damage to vegetation should be minimized by close coordination and on site alignment adjusted of rising main and gravity sewer pipelines.	All areas	√			
• Short excavation and immediate backfilling section upon completion of works should be performed to reduce active site area.	All areas	√			
Site Practice					
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	All areas	√			
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	All areas		√		
• All generators, fuel and oil storage are within bundle areas.	All areas		√		
• Oil leakage from machinery, vehicle and plant should be prevented.	All areas		√		
• The Environmental Permit should be displaced conspicuously on site.	All areas	√			

Appendix H

Draft Report of

Archaeological Watching Brief at Chung Mei, Sok Kwu Wan

DSD Contract No. DC/2007/18
Yung Shue Wan & Sok Kwu Wan
Village Sewerage,
Stage 1 Works

Archaeological Watching Brief
at Chung Mei, Sok Kwu Wan

Draft Report

Prepared for Kaden Construction Ltd.
By Archaeological Assessments Ltd.

July 2009

List of Contents

List of Figures

List of Plates

1. Non-Technical Summary

As part of the above captioned project, an archaeological watching brief was conducted in Chung Mei, Sok Kwu Wan on 1st September 2008 and 12th June 2009 (Figure 1). The monitoring works were required as a result of previous findings of kiln-oven debris and Tang Dynasty pottery in the small valley to the west (AAL 2003).

The alignment in question ran across the west facing slope of a steep, wooded hillside – the southern half following an existing concrete-surfaced footpath, while the northern half crossed the natural slope. The contractor's groundworks consisted of a c.0.6m wide by c.1.2m deep machine-excavated pipe trench, which was monitored over a total length of approximately 50m.

No cultural layers were found and there was just one surface find of undiagnostic pottery.

由於2003年進行的考古調查在西面的小山谷發現了一些窯具及唐代陶片，因此，是次污水管敷設工程須在索罟灣涌尾進行考古監察。索罟灣涌尾之考古監察分別在2008年9月1日及2009年6月12日進行。

是次涉及之污水管敷設路線是源著西向、樹木茂盛之陡坡而建。南半部路線依現有之石屎小徑而行;
而北半部路線則繞過自然山坡。是次考古監察範圍包括：承建商用機挖掘約0.6米闊、1.2米深之地溝，而監察範圍長約50米。

是次考古監察並未發現文化層，只在地面採集到一片無斷定年份之陶片。

2. Introduction

As part of the Drainage Services Department's Contract No. DC/2007/18 – Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works – it was required that an archaeological watching brief be undertaken in the village of Chung Mei, which lies approximately 0.5km south of Sok Kwu Wan on the eastern side of Lamma Island (Figure 1). The archaeological monitoring works were required following findings of kiln-oven debris and Tang Dynasty pottery in an adjoining area during an earlier archaeological survey (AAL 2003). The watching brief works on the approximately 50m long alignment were conducted in two segments, the first on 1st September 2008 and the second on 12th June 2009 (Figure 2).

3. Project Aims

The aim of this project was to ensure that any archaeological remains encountered during construction works within the study area alignment were properly identified, recorded and recovered whilst, at the same time, minimising delays to the engineering schedule.

The objectives of the study were as follows:

- To implement a monitoring strategy designed to fulfil the above aim;
- To process and analyse the results in light of previous findings;
- To report on the results of the fieldwork; and
- If required, to recommend mitigation measures.

4. Topographical, Geological, Historical and Archaeological background

4.1 Topography

The Chung Mei area comprises a small flat valley surrounded by steep wooded hillsides to the west, south and east, the latter reaching up to the peak of Ling Kok Shan at 250m PD. To the north, the ground falls gradually away to the sandy shallows of Picnic Bay (Sok Kwu Wan). The sewer alignment in question traversed the lower west facing hill slope overlooking the small valley mentioned above. The c.50m long alignment ran downhill from manhole (MH) S50 (surface level 10.06mPD) at its southern end to manhole S54 (surface level 5.75mPD) at its northern end.

4.2 Geology

In the following short discussion, the codes in brackets are those used for the various rocks/sediments depicted on the geological map (Figure 3). The solid geology at Chung Mei consists of fine to medium grained granite (gfm) with east-west running feldsparphyric rhyolite (rf) dykes. In terms of drift geology, the small valley of Chung Mei, to the west of and below the study alignment, is filled with alluvium (Qa), while debris flow deposits (Qd) are recorded in a narrow valley to the northeast of the study area (Hong Kong Government 1987). The monitored alignment was located as shown on Figure 3, crossing the western edge of the granite bedrock close to where sank beneath the alluvial fill of the valley bottom.

4.3 History

According to Hase (2002, 7), although the sheltered anchorage at Sok Kwu Wan was used by generations of boat-people, there were just seven residents on land in 1911 and it was not until the 1950s and 1960s that the settlement expanded to the landward side. The few houses dotted across the hillside at Chung Mei appear to be later 20th century in date.

4.4 Archaeology

The one previous campaign of archaeological fieldwork in the Chung Mei area was centred on the aforementioned small alluvium-filled valley just below the present study area. Eight 2x2m test pits were excavated and two of their number (TP1 and TP2) revealed evidence for historical kiln-oven debris and Tang Dynasty pottery, whilst a lower layer produced a single sherd of Bronze Age hard geometric pottery (AAL 2003).

5. Methodology

The watching brief was in general conducted following the specification as set out in Section 11.1, but further details of the field implementation are provided below. As previously mentioned, the watching brief on the c.50m long alignment was conducted in two segments to fit in with the contractor's work programme – the lower segment first spanning MH S54 and S52, followed by the uphill segment from MH S52 and up to and including MH S50 (see Figure 2). Between MH S54 and S52 the trench was machine excavated forming a c.0.60m wide square-sectioned slot down to between 1-1.2m below the modern surface when measured at the downhill side of the trench and 2m+ on the uphill side. A sketch profile in the environs of MH S53, where the trench was locally stepped to avoid a lighting cable, is shown in Figure 4. At the southern end of the downhill half of the alignment on the site of MH S52, a locally deeper area was excavated to approximately 2.4m below surface, which further confirmed the depth of the completely decomposed granite (CDG) beneath the alignment. Between MH S52 and S50 the trench followed the existing concrete raft-surfaced footpath, the construction of which had necessitated the terracing of the hillside. Here, the trench was machine excavated to form a c.0.60 wide slot with sides c.1.2m deep (when measured from the modern footpath surface). Given that the alignment between MH S54 and S52 was off the main footpath, it was possible to excavate that length as one continuous open cut. In contrast, the length between MH S52 and S50 effectively closed the footpath in that area for the duration of the works, and the client therefore requested that the trench be dug, monitored and recorded, and then backfilled. During the monitoring works a full written, video and photographic record was taken, which will form the core of the project archive.

6. Results

6.1 Introduction

The results of the watching brief are presented in two sub-sections: one for the length of trench excavated in September 2008 (MH S54 to S52), and the other for the length excavated in June 2009 (MH S52 to S50). For each length of alignment, the sequence of deposits is introduced and then the various layers are interpreted with reference to any finds recovered.

In the text below, the following conventions should have been used: the alphanumeric codes used in deposit descriptions are taken from the Munsell system of soil colour charts (Gretagmacbeth 2000) and deposit depths are maximum values. During the discussion below reference should be made to the following illustrations: Figures 2 and 4, which respectively show the overall alignment and sketch section; Figures 5 & 6 showing the surveyors' plans of the watching brief alignment; Plates 1 and 2 respectively offering pre-excavation overviews of the alignment between MH S54 and MH S52 and between MH S51A to MH S50; and Plate 3 showing a post-excavation overview of the MH S54 to S52 alignment. NB: no post-excavation overview of the MH S51A to S50 alignment is available as the trench was excavated, recorded and immediately backfilled (but see photographs recording this process below).

6.2 Alignment between MH S54 and S52

The excavation of the down-slope half of the sewer trench revealed a simple sequence of three naturally-formed deposits (see Plates 4-6), the lowest of which was a 0.20-0.30m thick band reddish yellow (7.5YR 6/8) clayey gravel (**103**), which extended beyond the 1.2m below surface general limit of excavation (l.o.e.) and, in the 2.4m deep sondage excavated at MH S52, was shown to be at least 1.5m thick and continuing beyond the sondage l.o.e. Over 103 there was a 0.70-0.80m thick layer of strong brown (7.5YR 5/6) gravelly clay (**102**), which was sealed by an approximately 0.1m thick greyish brown (10YR 5/2) slightly sandy, clayey silt (**101**). A modern electricity cable trench was noted running along the eastern side of the sewer trench, but was not allocated a context number.

The lower two deposits were completely sterile and can be interpreted as *in situ* decaying granite (103), overlain by an associated clay-rich layer (102), which had all the appearances of mass-transported decayed granite (slope deposits). Sealing the above granite-derived layers was a naturally-accumulating forest soil (101). No cultural horizons/deposits were identified, but one undiagnostic sherd of village ware pottery was recovered from the surface of 101 (see Plate 7).

6.3 Alignment between MH S52 and S50

The excavation of the up-slope half of the sewer trench alignment also revealed a sequence of naturally-formed deposits, which exhibited some variation moving downhill from south to north.

Broadly between MHs S50 and S51, the sequence was as follows: a lower layer of c.0.40m thick (at l.o.e.) strong brown (7.5YR 5/6) slightly gravelly clay (**204**), overlain by a c.0.80m thick layer of reddish yellow (7.5YR 6/8) very gravelly clay (**203**), which was then sealed by a thin raft of concrete forming the temporary path surface (**201**) – see Plates 8-10.

Between MH S51 and S52 – in the environs of MH S51A, the sequence was as follows: c.0.60m thick (at l.o.e.) strong brown (7.5YR 5/6) slightly gravelly clay (**204**); overlain by a c.0.50m thick layer of reddish yellow (7.5YR 6/8) very gravelly clay (**203**); which was covered by an approximately 0.1m thick greyish brown (10YR 5/2) slightly sandy, clayey silt (**202**), which was in turn sealed by the concrete raft surfacing of the footpath (**201**) – see Plates 11 and 12. A modern water pipe was noted running along the eastern side of the sewer trench and an electricity cable along the west, but neither was allocated a context number.

The lower two deposits (204 & 203) were completely sterile and can be interpreted as mass-transported decayed granite, with clay-rich layer 204 perhaps reflecting water-borne finer material and layer 203 a more gravelly debris flow-type component. Layer 202 can be interpreted as a thin forest soil equivalent to 101 above. On the upper portion of the alignment, between MH S50 and S51, Layer 202 had apparently been removed during levelling works for the path. No finds were recovered and no cultural horizons/deposits were therefore identified.

7. Conclusions

In summary, it can be concluded that the steep lower hill slope area traversed by the MH S50 to MH S54 sewer trench at Chung Mei has seen little or no human activity prior to the 20th century and, in contrast to the valley to the west, can be considered to have no archaeological potential.

8. References

AAL 2003 *Agreement No. CE 20/96 Outlying Islands Sewerage Stage 1 Phase II Package J – Sok Kwu Wan Sewage Collection, Treatment & Disposal Facilities, Archaeological Investigation.* Unpublished excavation report.

Gretagmacbeth 2000 *Munsell Soil Colour Charts*. Gretagmacbeth: New Windsor, NY.

9. Supporting Illustrations

9.1 Figures

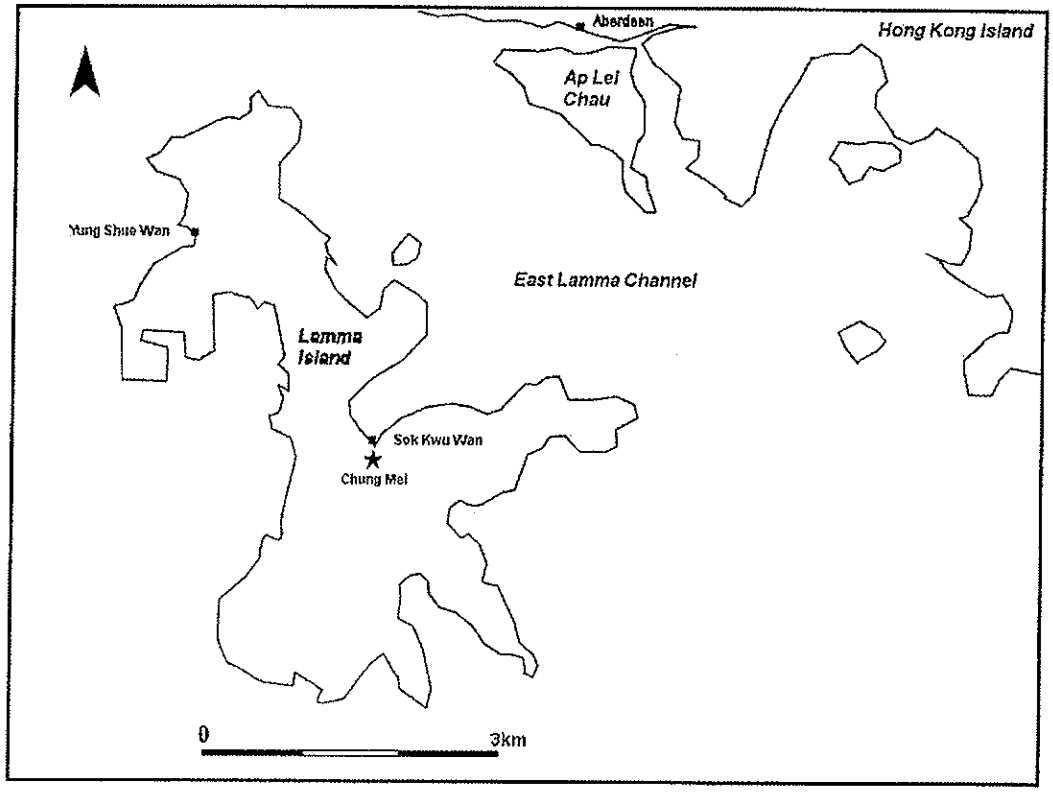


Figure 1: Study Area location – Chung Mei site marked with star

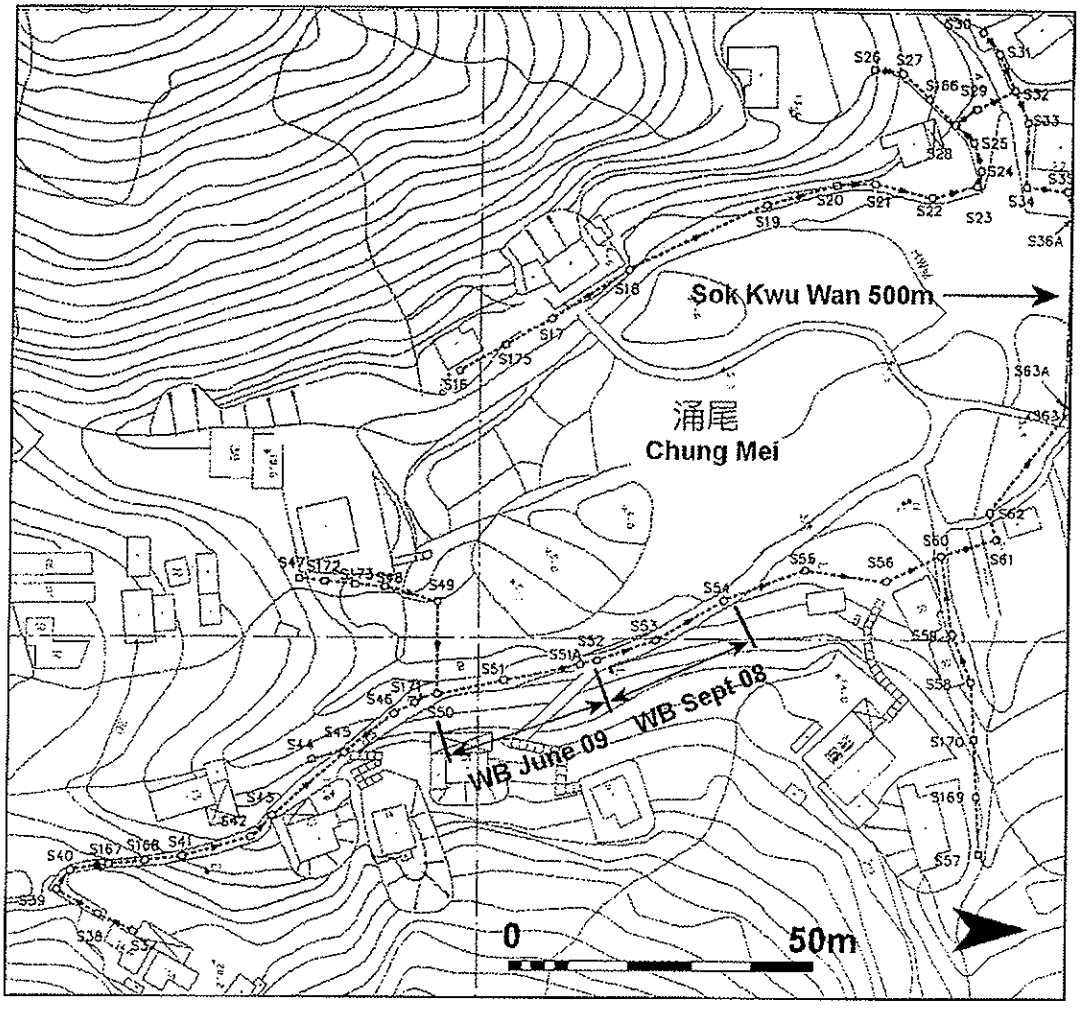


Figure 2: Plan showing location of sewer trench alignment at Chung Mei, with September 2008 and June 2009 watching brief areas highlighted

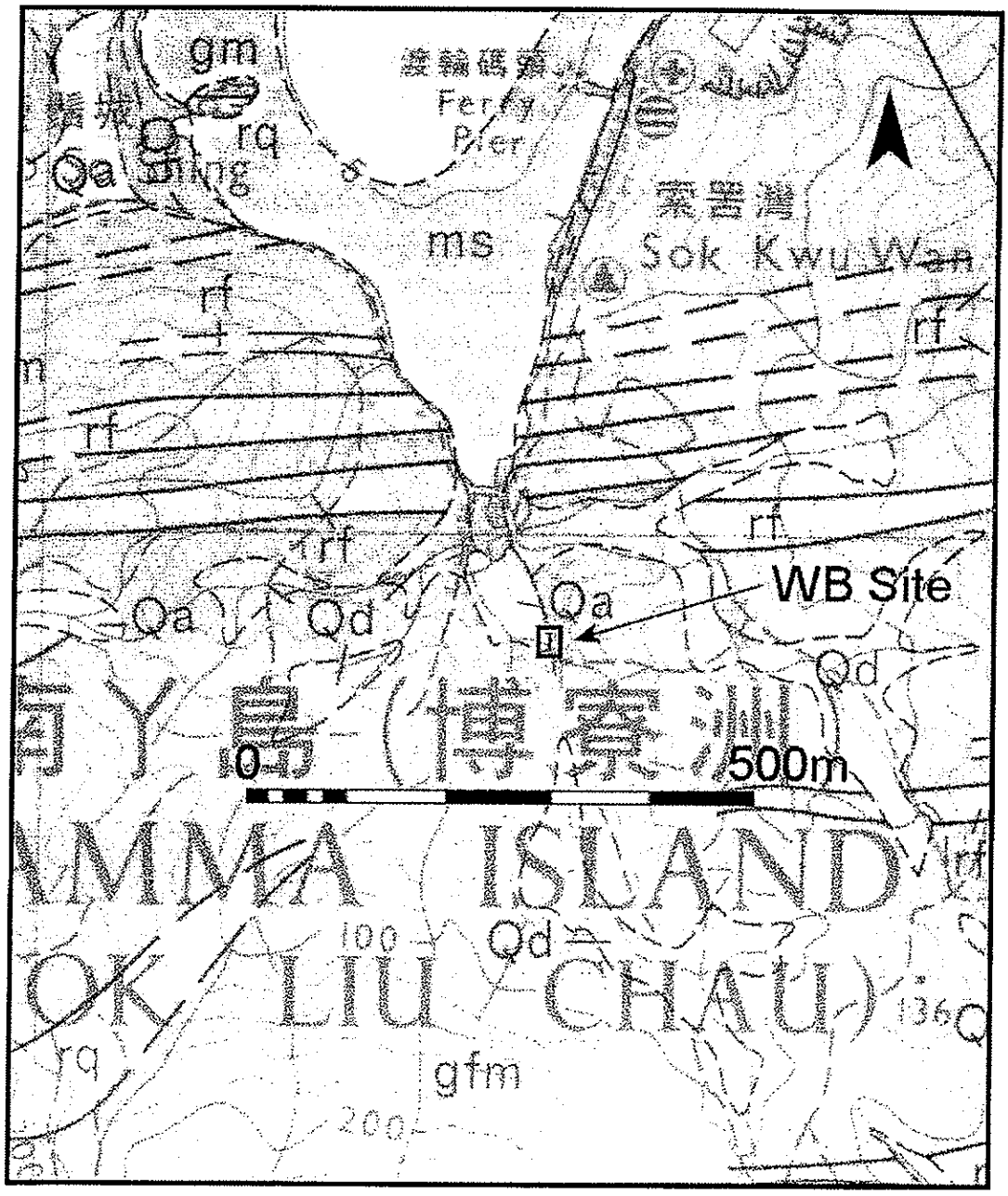


Figure 3: Geology of Study Area – alignment followed western edge of granite bedrock

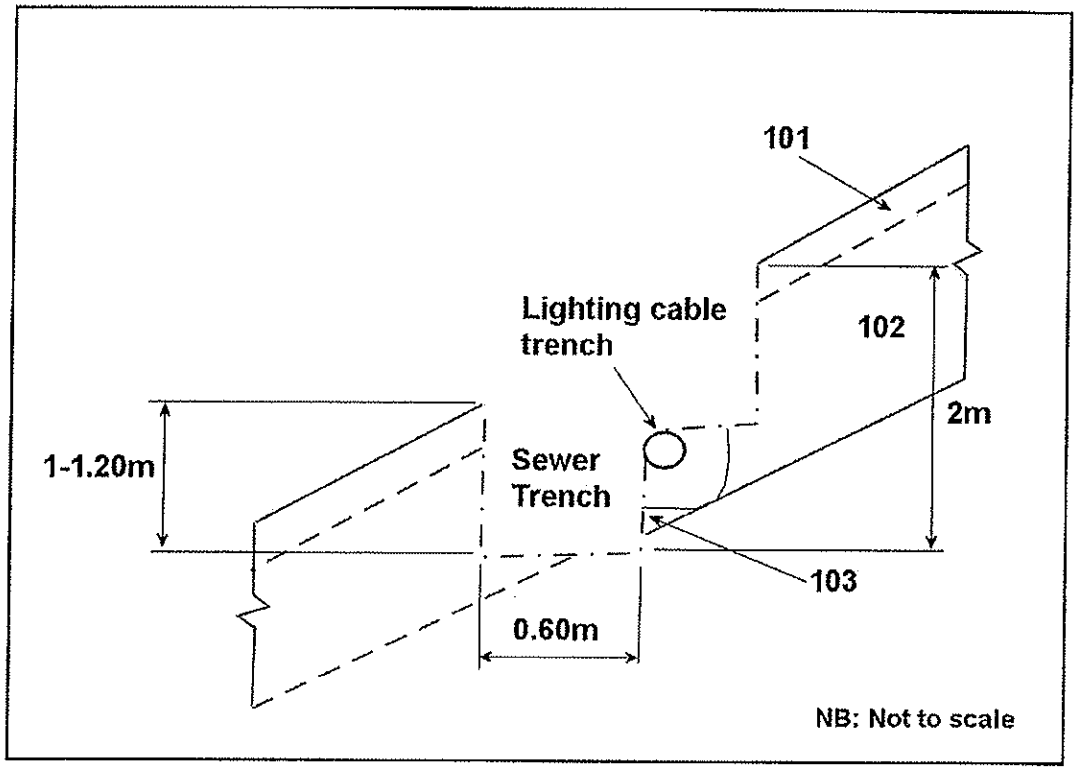


Figure 4: Transverse sketch section of sewer trench in environs of MH S53 – looking north

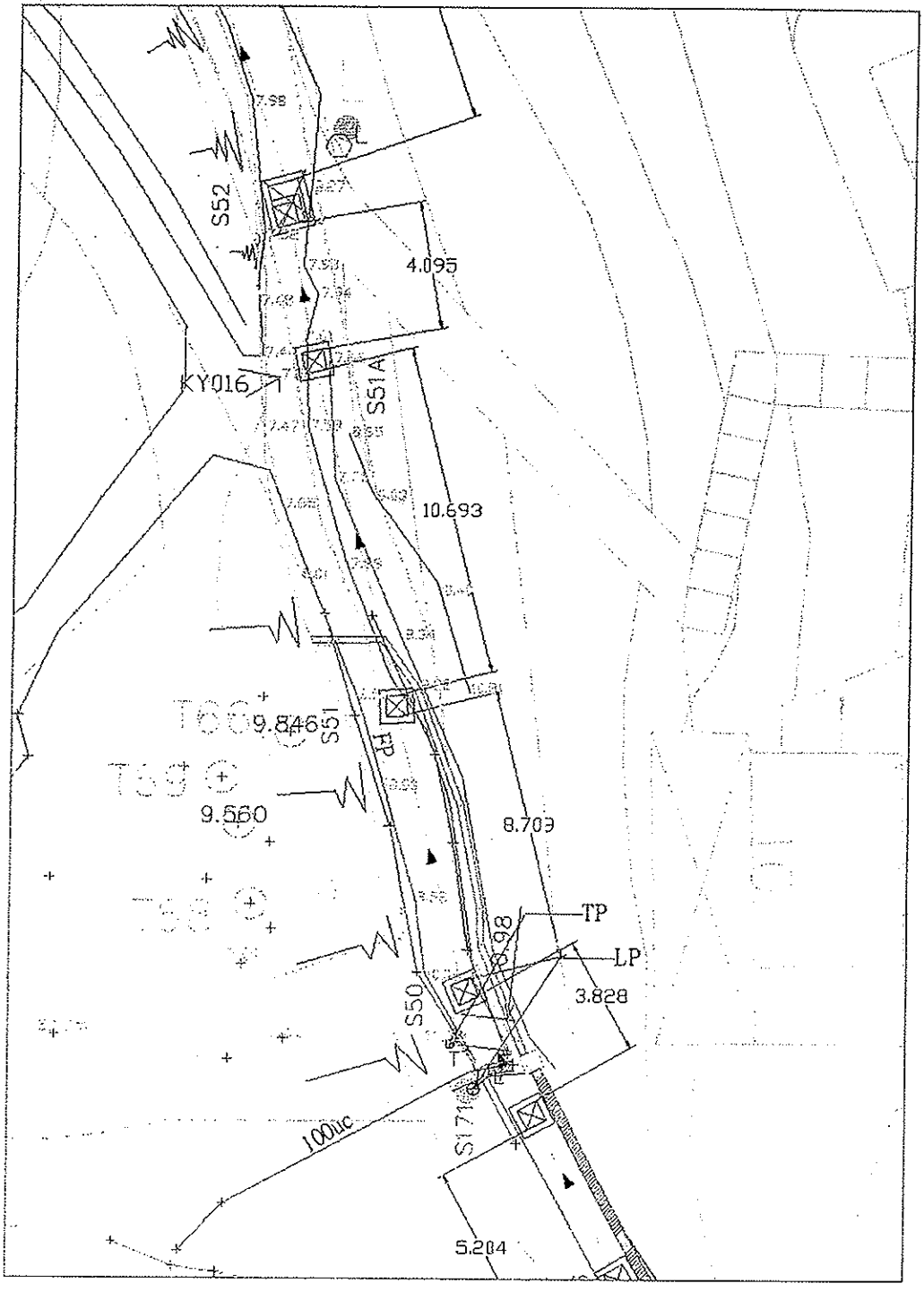


Figure 5: Surveyors' plan of the MH S50 to S52 alignment (kindly supplied by Kaden Engineering Ltd)

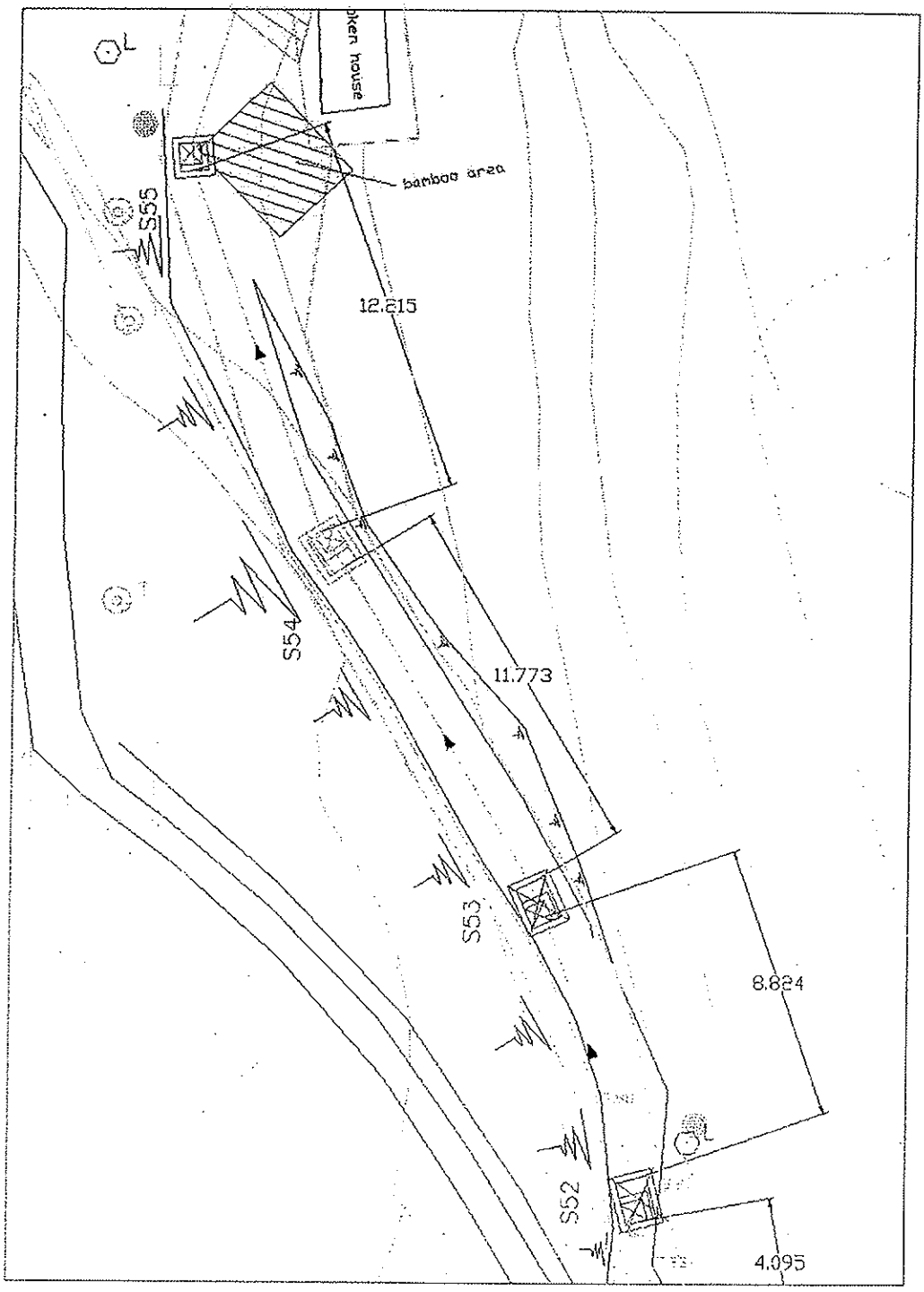


Figure 6: Surveyors' plan of the MH S52 to S54 alignment (kindly supplied by Kaden Engineering Ltd)

9.2 Plates

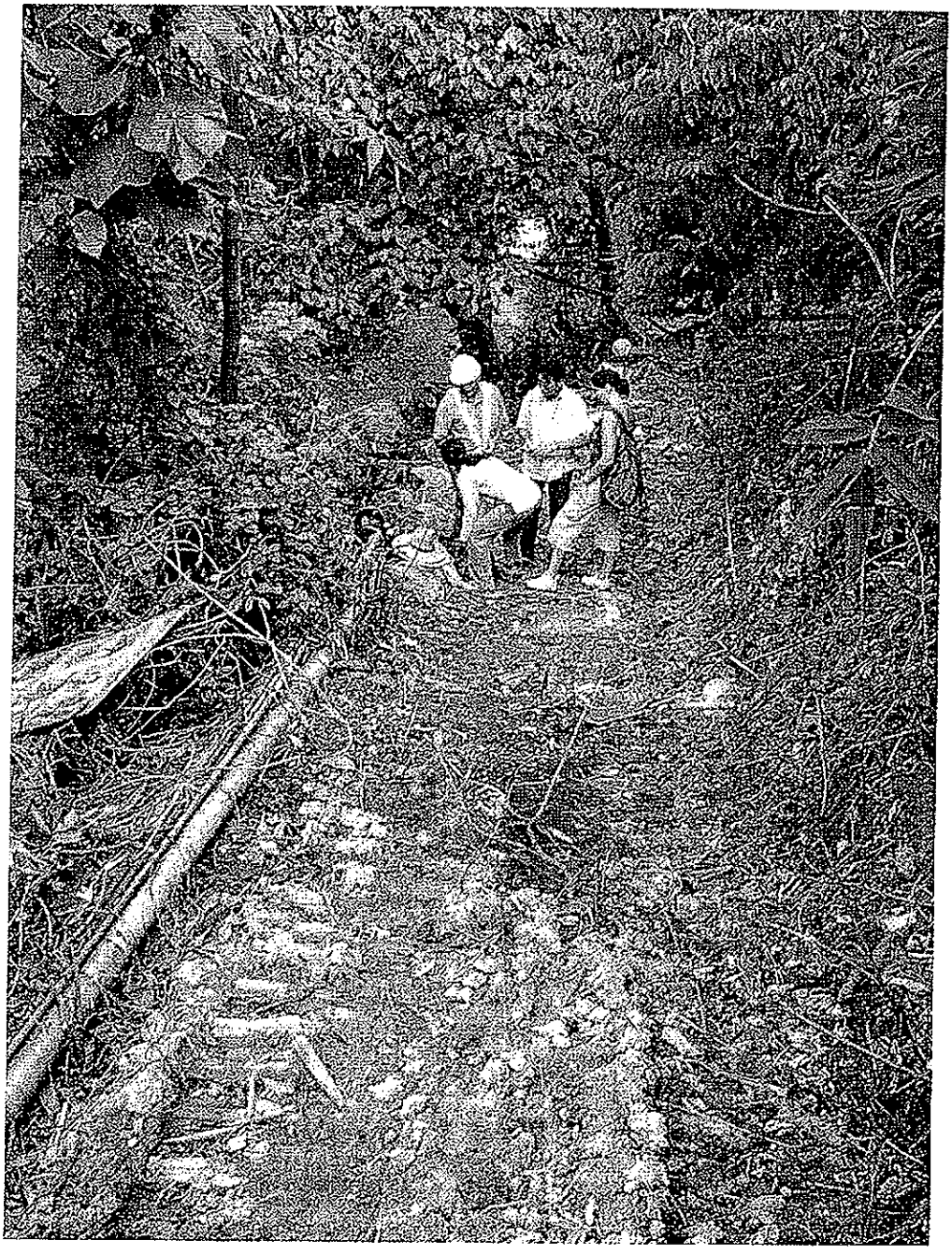


Plate 1: Pre-excavation view of the alignment between MHs S52 and S54 – looking north

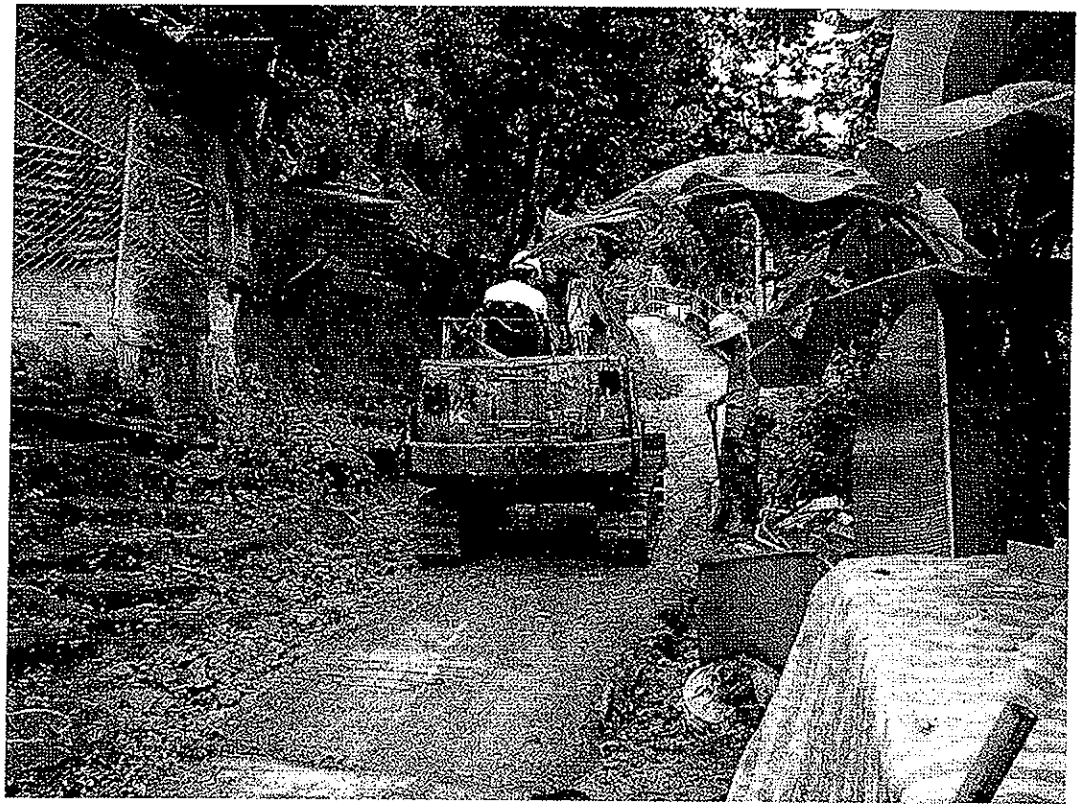


Plate 2: Pre-excavation view of alignment between MHs S51A and S50 – looking south

Plate 3: Post-excavation view of the alignment between MHs S54 and S52 – looking south

Plate 4: Deeper sondage excavated at MH S52 – looking south

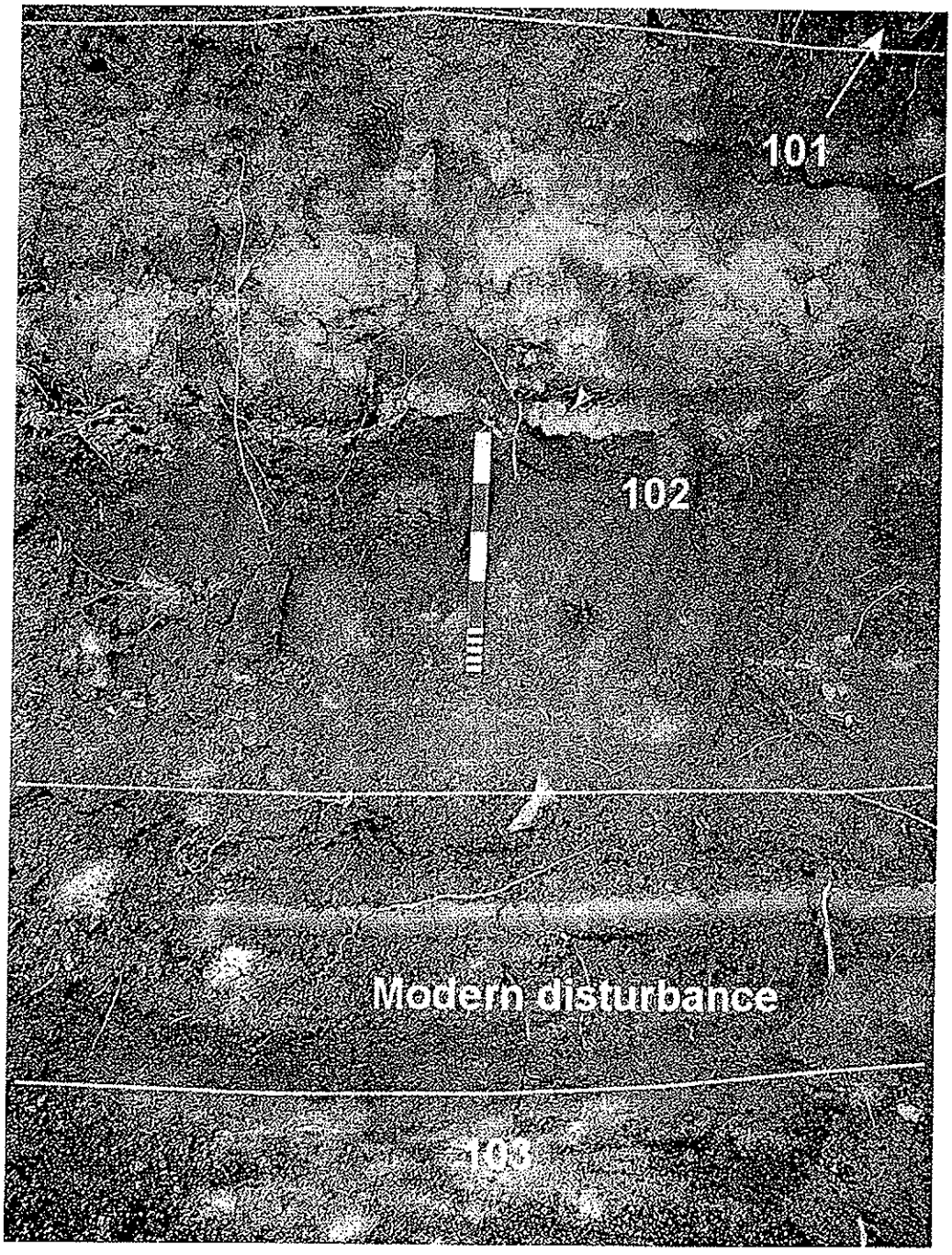


Plate 5: West facing section at MH S53 – trench stepped at base of 0.5m scale

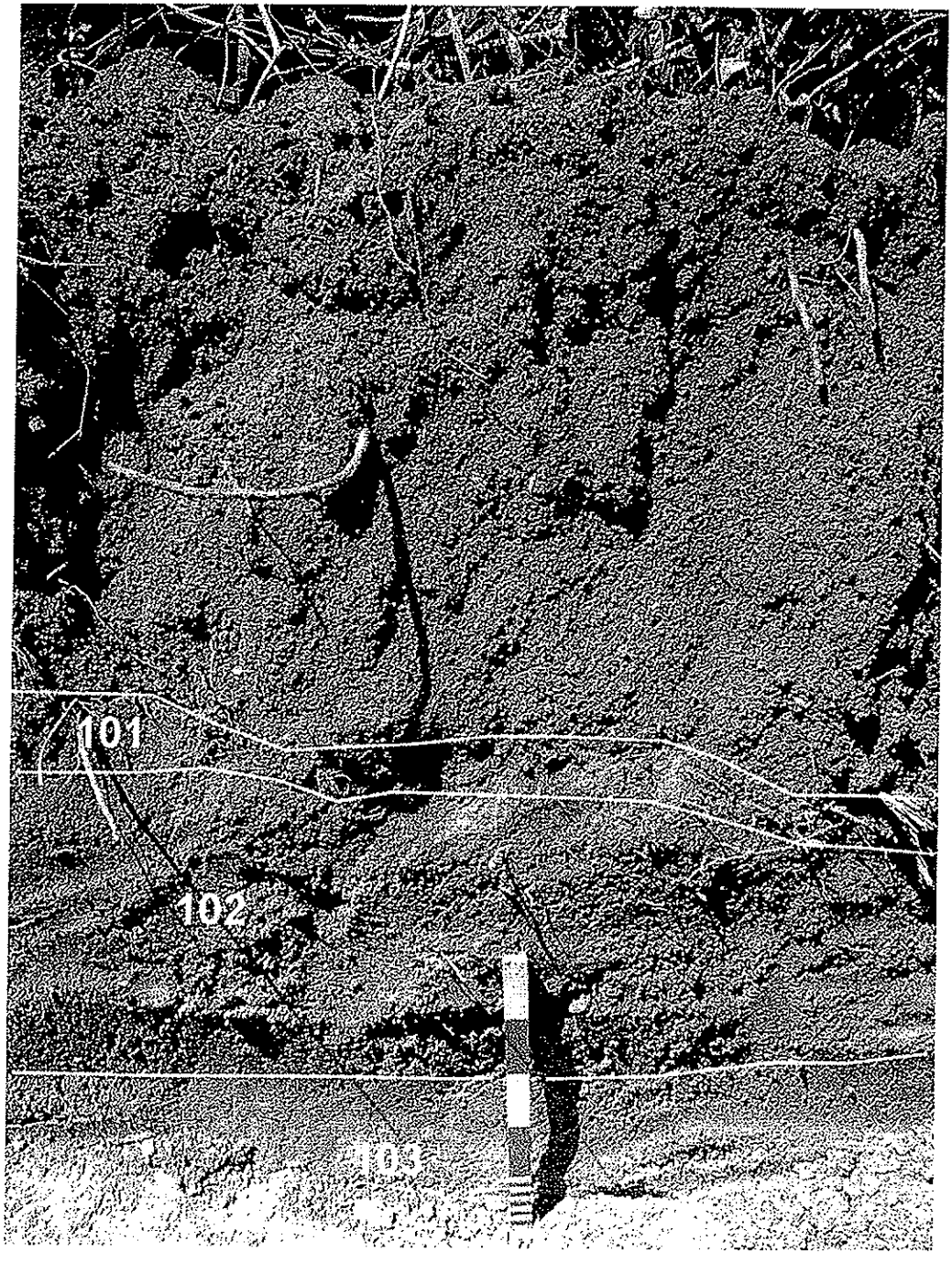


Plate 6: East facing section at MH S54

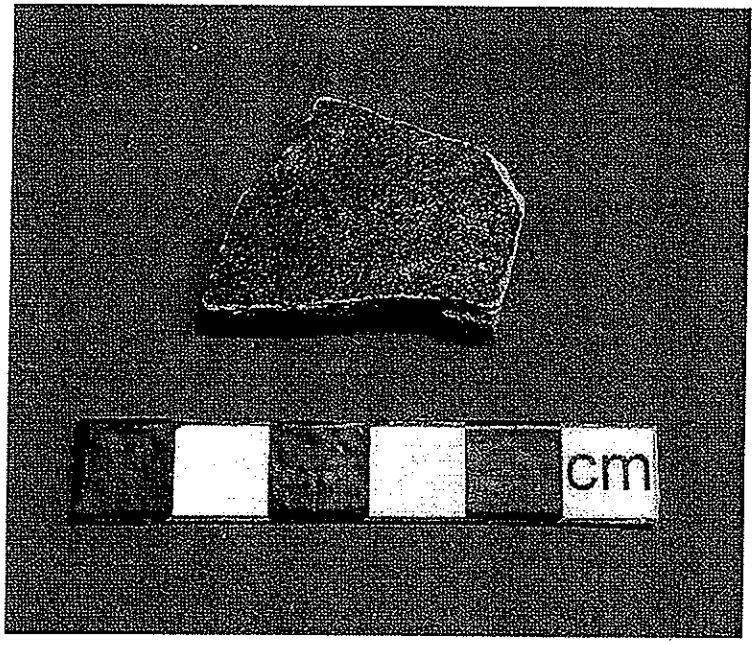


Plate 7: Undiagnostic village ware sherd found on surface of topsoil 101

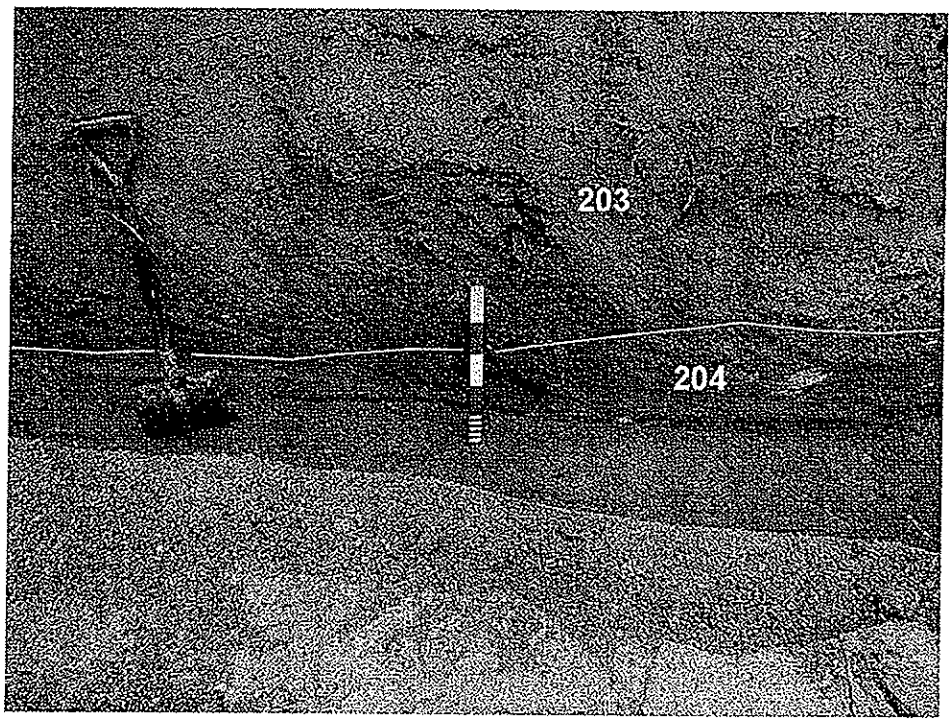


Plate 8: West facing section in environs of MH S50

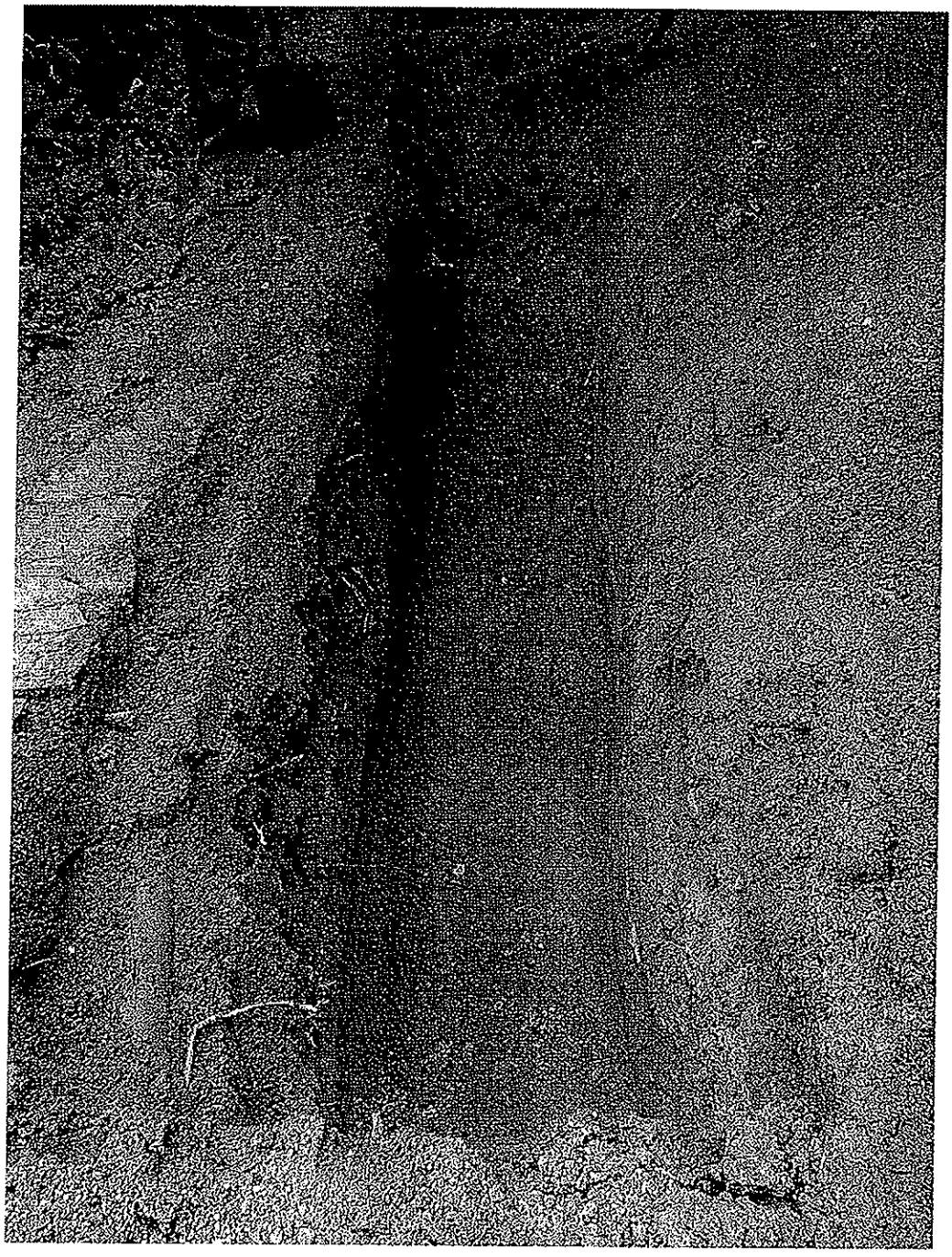


Plate 9: Post-excavation view in environs of MH S50 – looking north

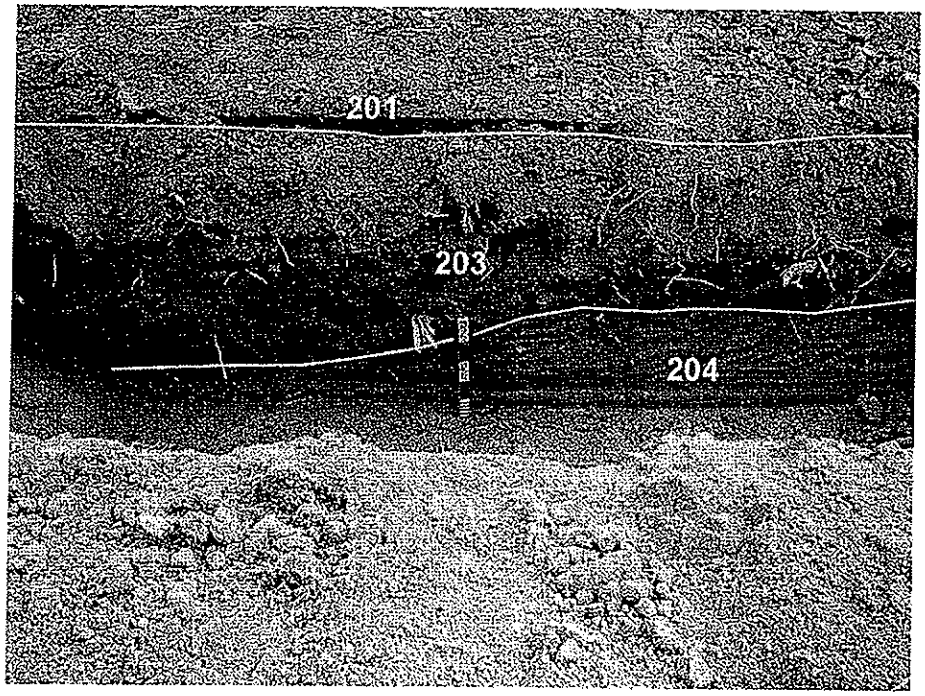


Plate 10: East facing section in environs of MH S51

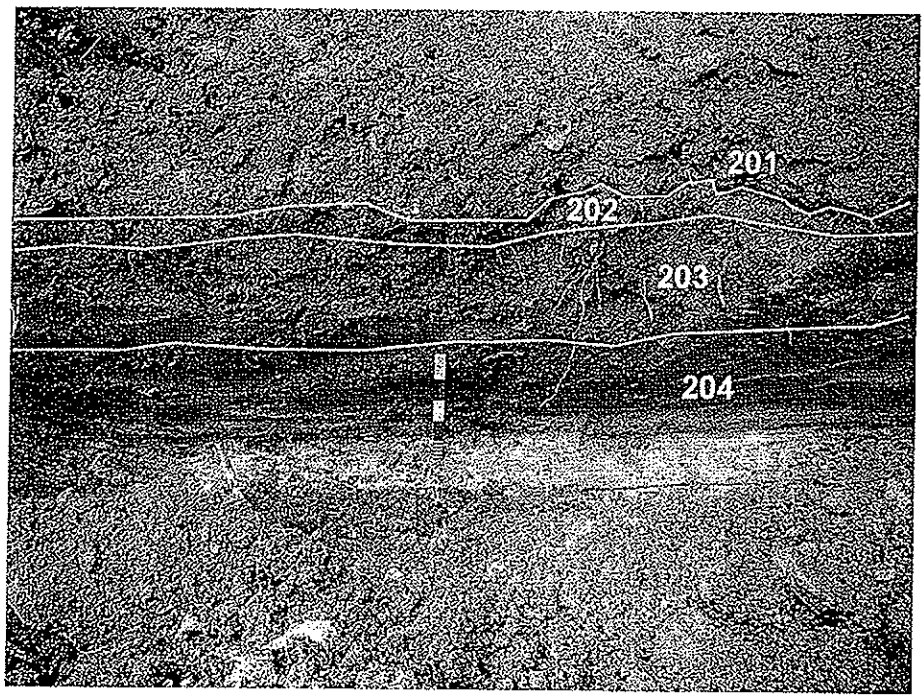


Plate 11: East facing section in environs of MH S51A

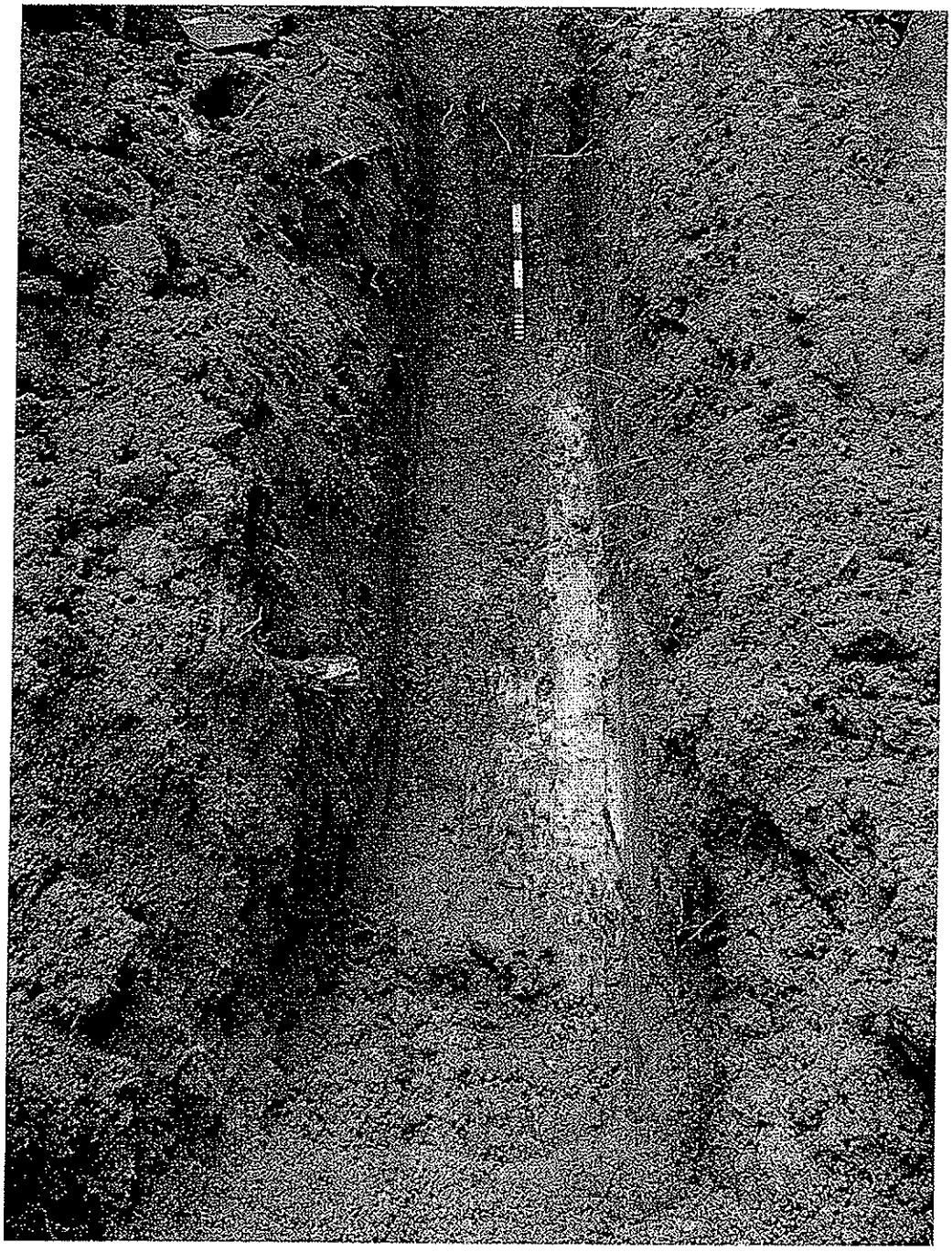


Plate 12: Post-excavation view in environs of MH S51A – looking south

10. Supporting Data

10.1 MHs S52 to S54: Tabulated stratigraphic, contextual and finds summary

Context	Description	Finds & Dating	Thickness
101	Topsoil: Greyish brown (10YR 5/2) slightly sandy, clayey SILT	1 sherd of undiagnostic VW: date unknown	0.10m max.
102	Slope Deposits: Strong brown (7.5YR 5/6) gravelly CLAY	None: date unknown	0.70-0.80m
103	CDG: Reddish Yellow (7.5YR 6/8) clayey GRAVEL	None: date unknown	1.5m at l.o.e

10.2 MHs S50 to S51A: Tabulated stratigraphic, contextual and finds summary

Context	Description	Finds & Dating	Thickness
201	Footpath Surfacing: Grey concrete	None: modern	0.03-0.05m
202	Topsoil: Greyish brown (10YR 5/2) slightly sandy, clayey SILT	None: date unknown	0.10 max
203	Slope Deposits: Reddish yellow (7.5YR 6/8) very gravelly CLAY	None: date unknown	0.50m max.
204	Slope deposits: Strong brown (7.5YR 5/6) slightly gravelly CLAY	None: date unknown	0.60m at l.o.e.

11. Supporting Documents

11.1 Requirements for Archaeological Watching Brief

12. Comments and Responses

Appendix I

Photographic Records of the Uncommon Tree Species

Photos (31 Aug 2009)

CT No.01

CT No.02

CT No.03

CT No.04

CT No.05

CT No.06

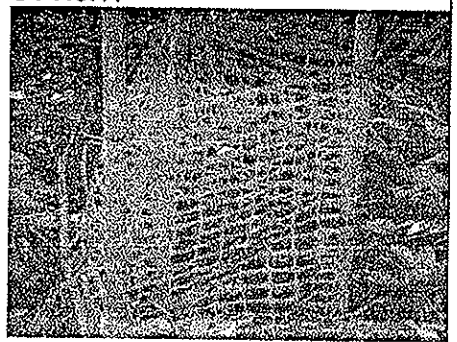
CT No.07

CT No.08

CT No.09

CT No.10

CT No.11



CT No.12

Appendix J

Vegetation Survey Report

and Photographic Records of the Uncommon Tree Species

Kaden 基利

Our Ref.: K0801/01.01.00.00/2303/L
Date: 7 August 2009

Scott Wilson CDM Joint Venture
38/F, Metroplaza Tower 1
223 Hing Fong Road
Kwai Fong, N.T.
Hong Kong

Attn: Ir. Ian J. Jones

By Hand

Dear Sir,

Drainage Services Department
Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
V.O. No. 016 – Vegetation and Plant Species Survey Report

We refer to our letter ref. K0801/01.01.00.00/1876/L dated 2 June 2009 and the tele-conversations between your Ms. Fairy Wang (ARE) and the undersigned on 24 July 09 regarding the comments from EPD on the VEP application.

Enclosed please find herewith the photographic records showing the whole plant and a close-up with numbering for each plant and revised figure with correct locations for your action.

Thank you for your kind attention.

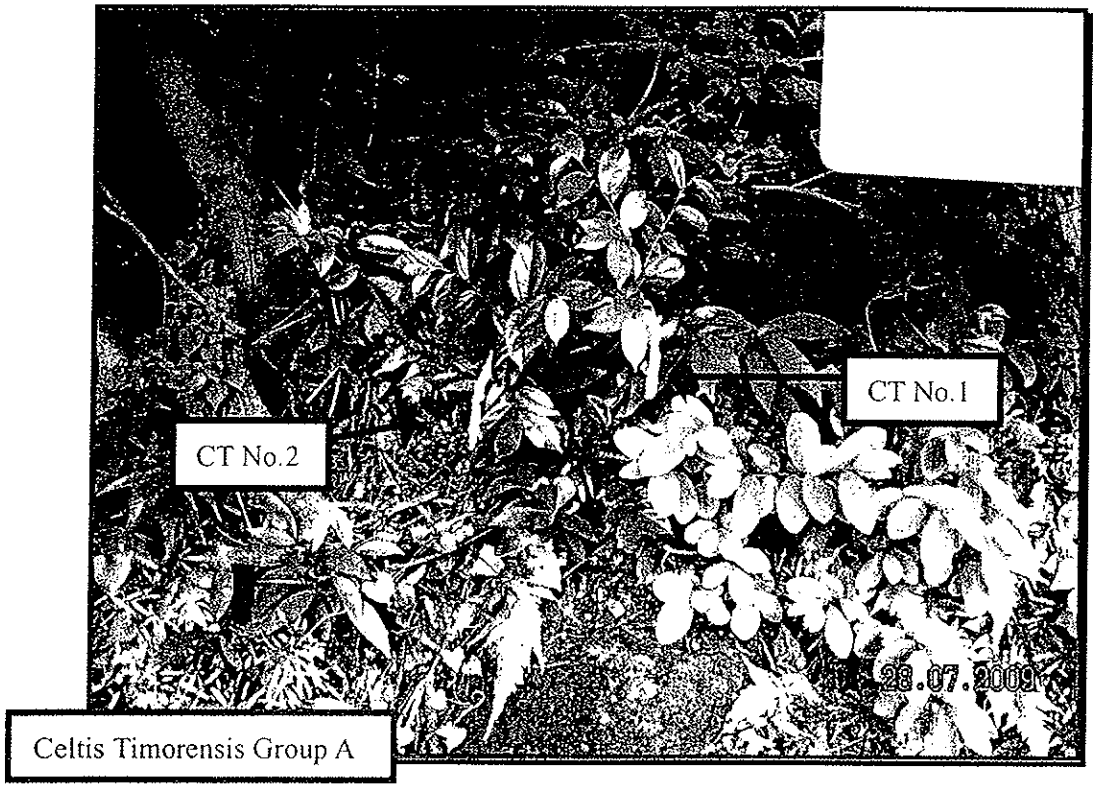
Yours faithfully,
For and on behalf of
Kaden Construction Limited

Stephen Leung
Site Agent

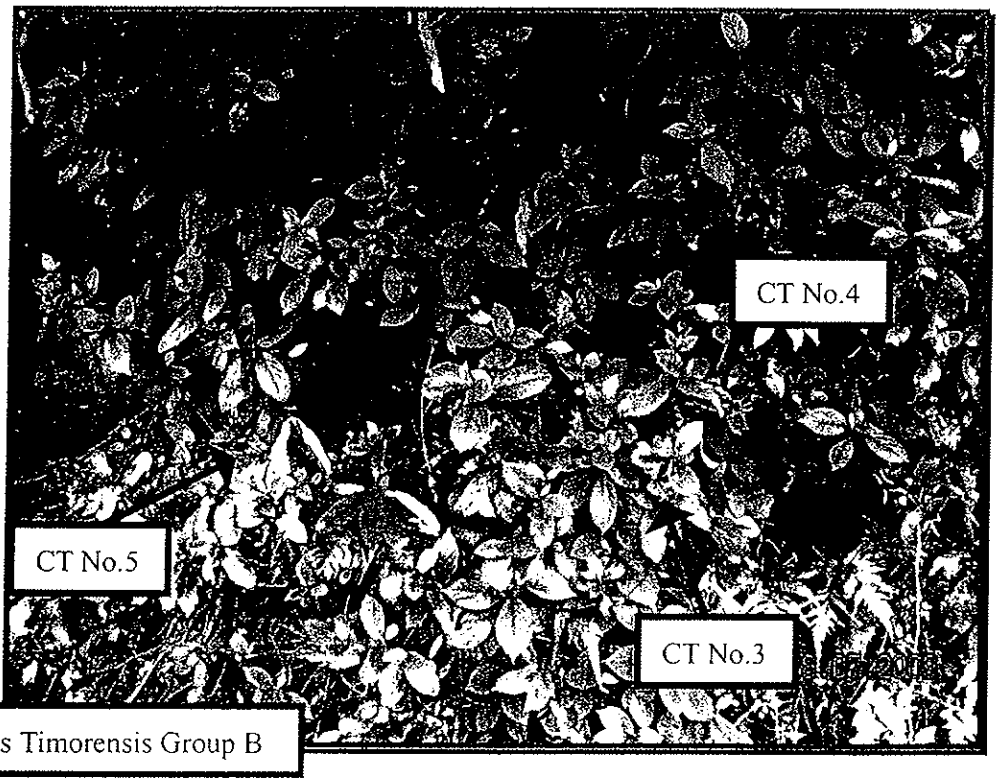
StL/pys

Encl.

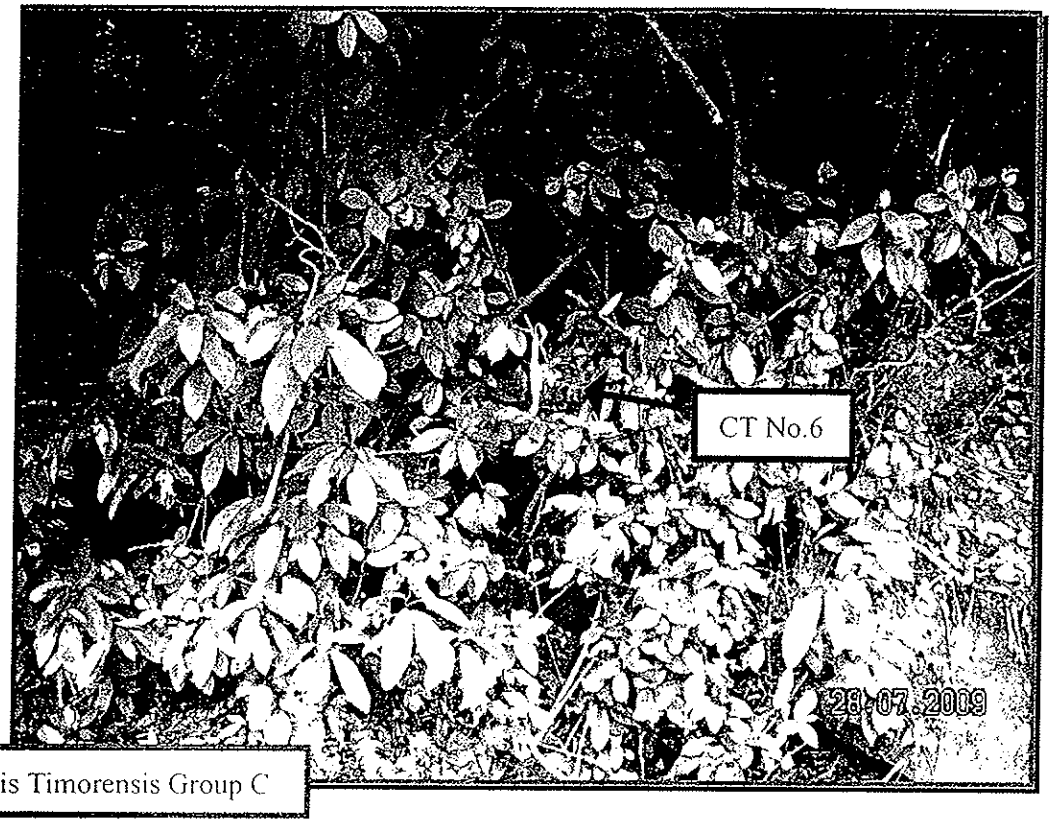
c.c. IEC Attn: Mr. Rodney Ip (By Fax only: 2428 9922)
ETS Attn: Mr. C. L. Lau (By Fax only: 2695 3944)
Kaden – CFS/JC/IS



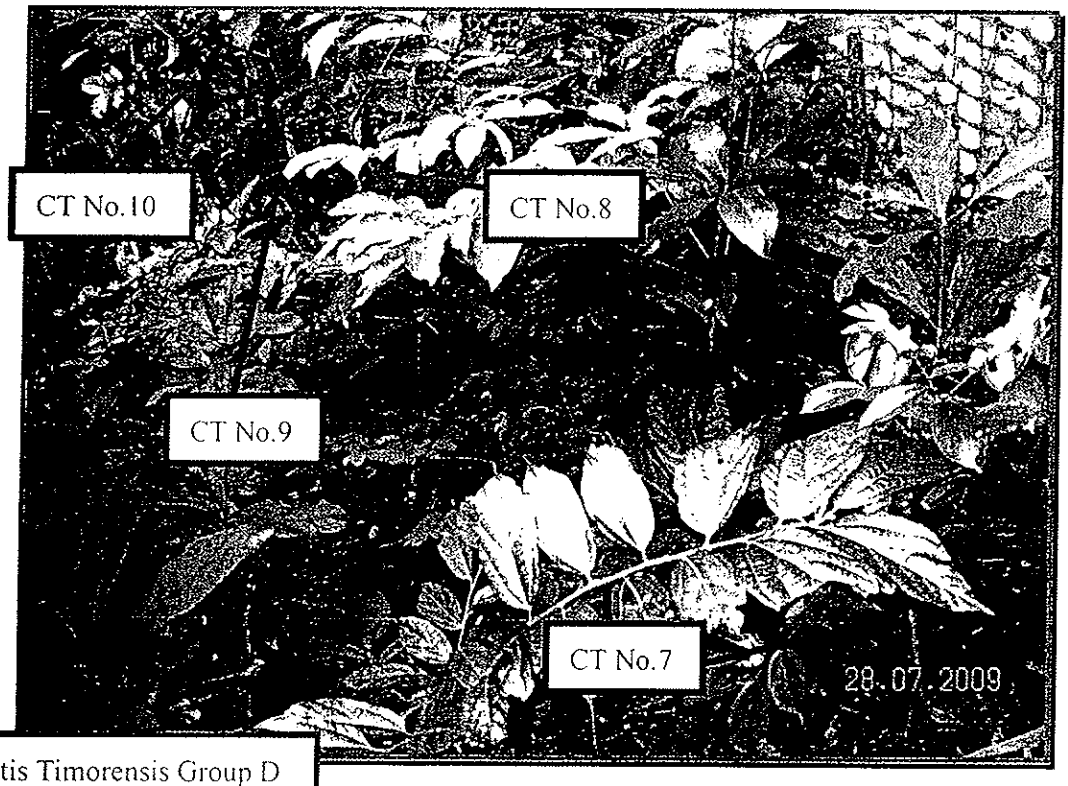
Celtis Timorensis Group A



Celtis Timorensis Group B

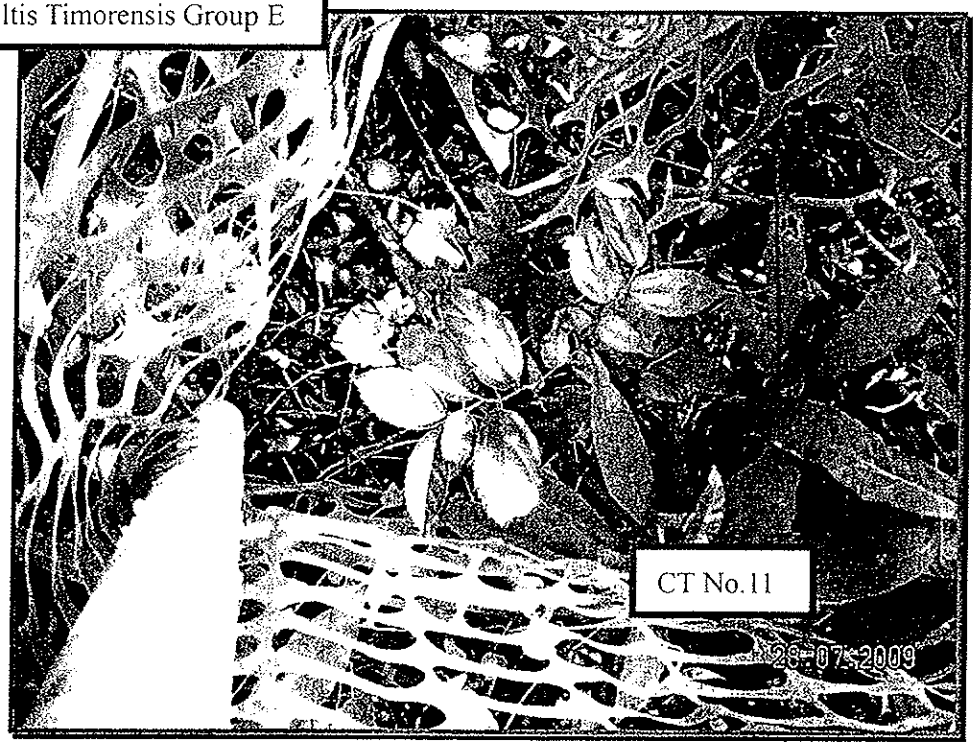


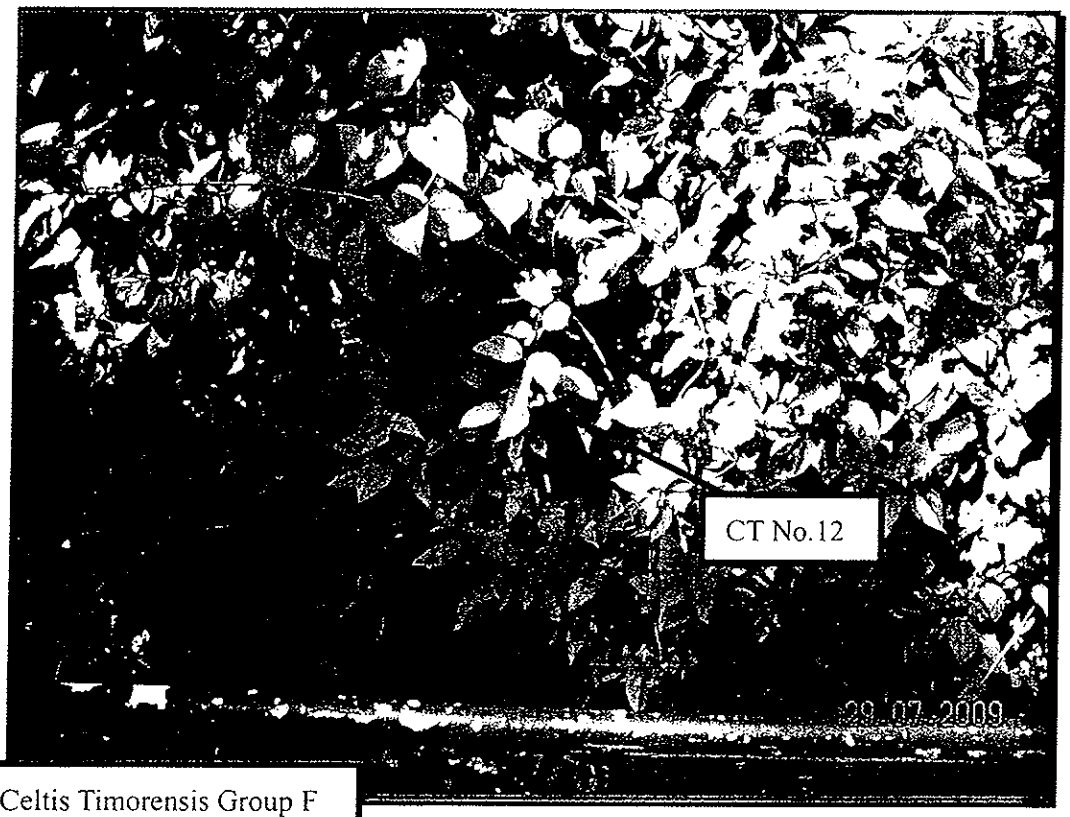
Celtis Timorensis Group C



Celtis Timorensis Group D

Celtis Timorensis Group E





Celtis Timorensis Group F

Close up of CT No.1

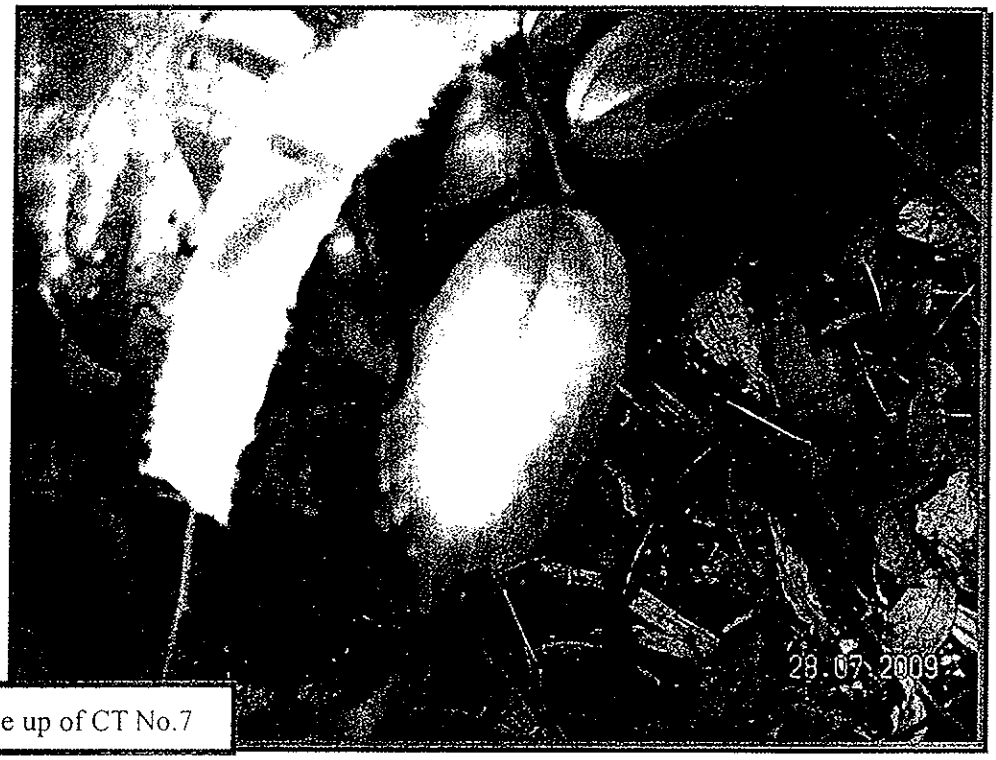
Close up of CT No.2

Close up of CT No.3

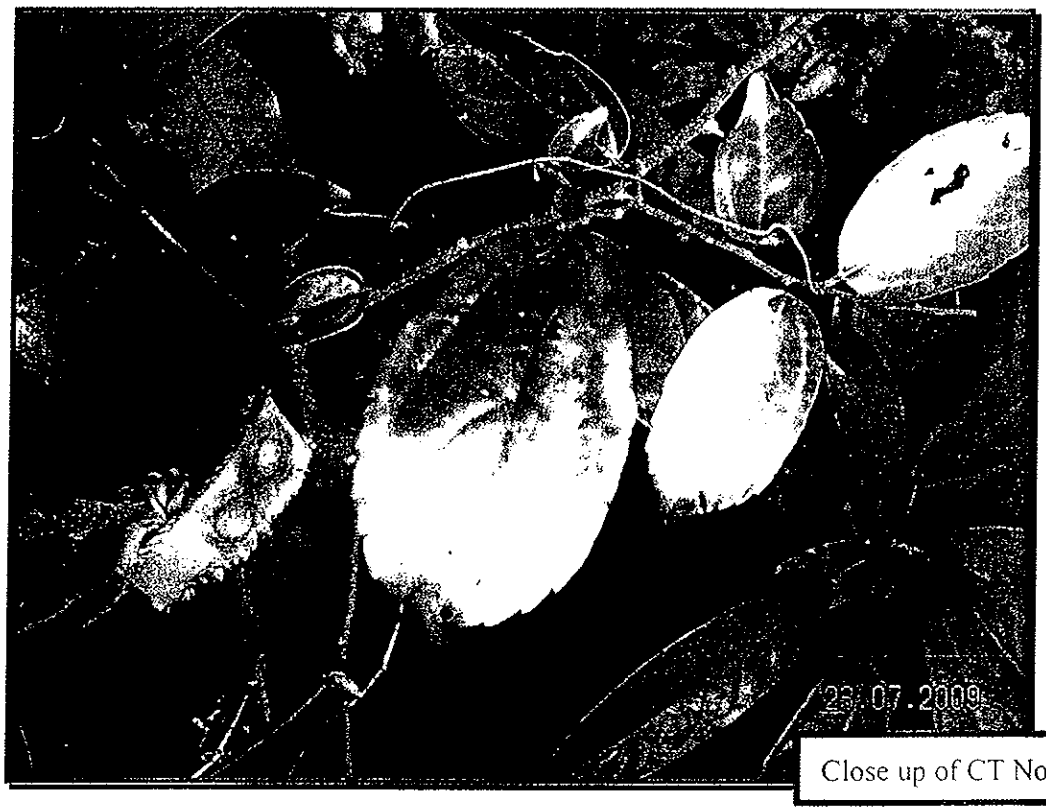
Close up of CT No.4

Close up of CT No.5

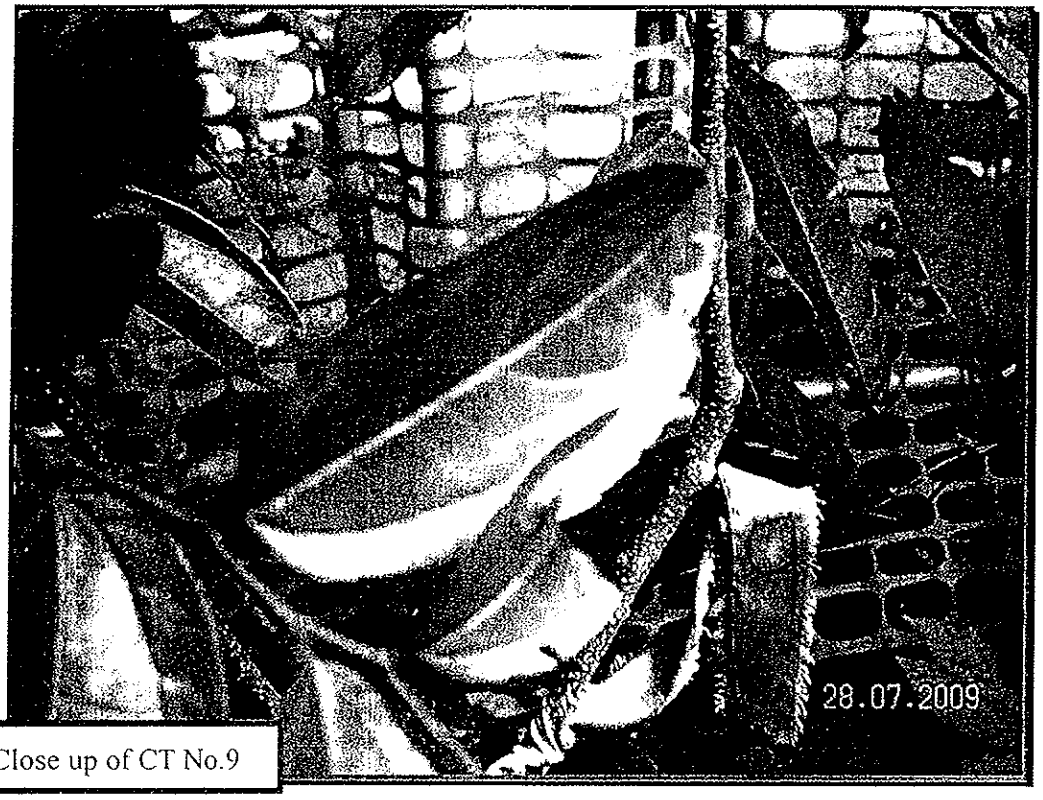
Close up of CT No.6



Close up of CT No.7



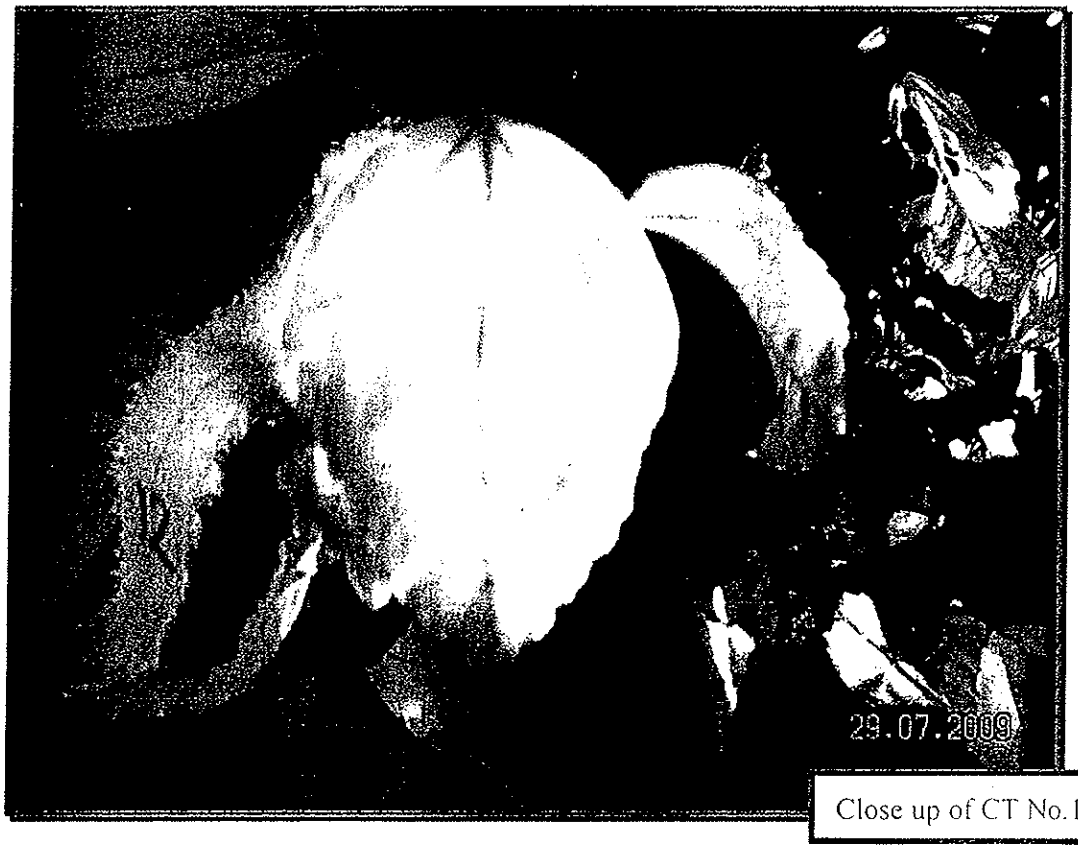
Close up of CT No.8



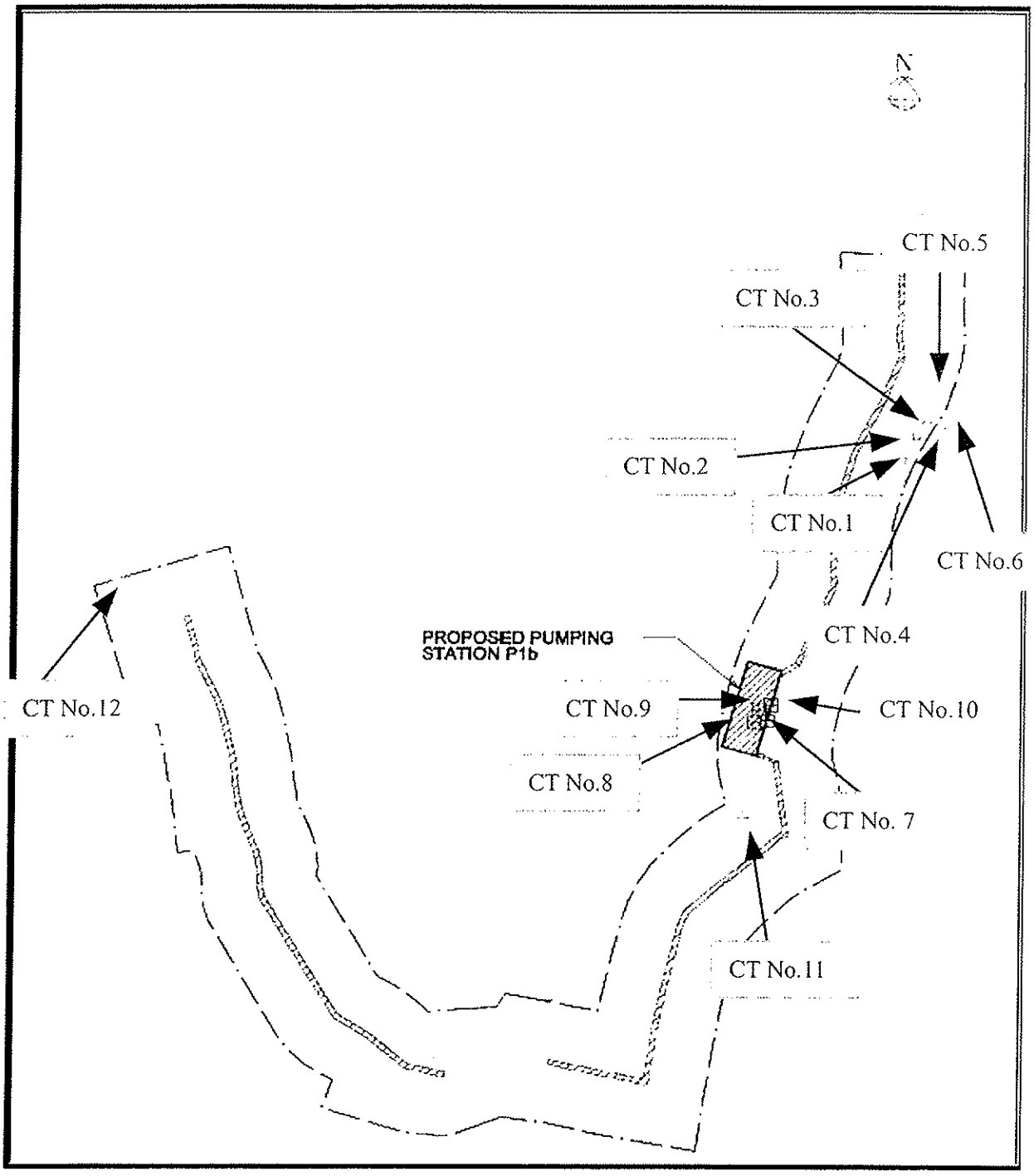
Close up of CT No.9

Close up of CT No.10

Close up of CT No.11



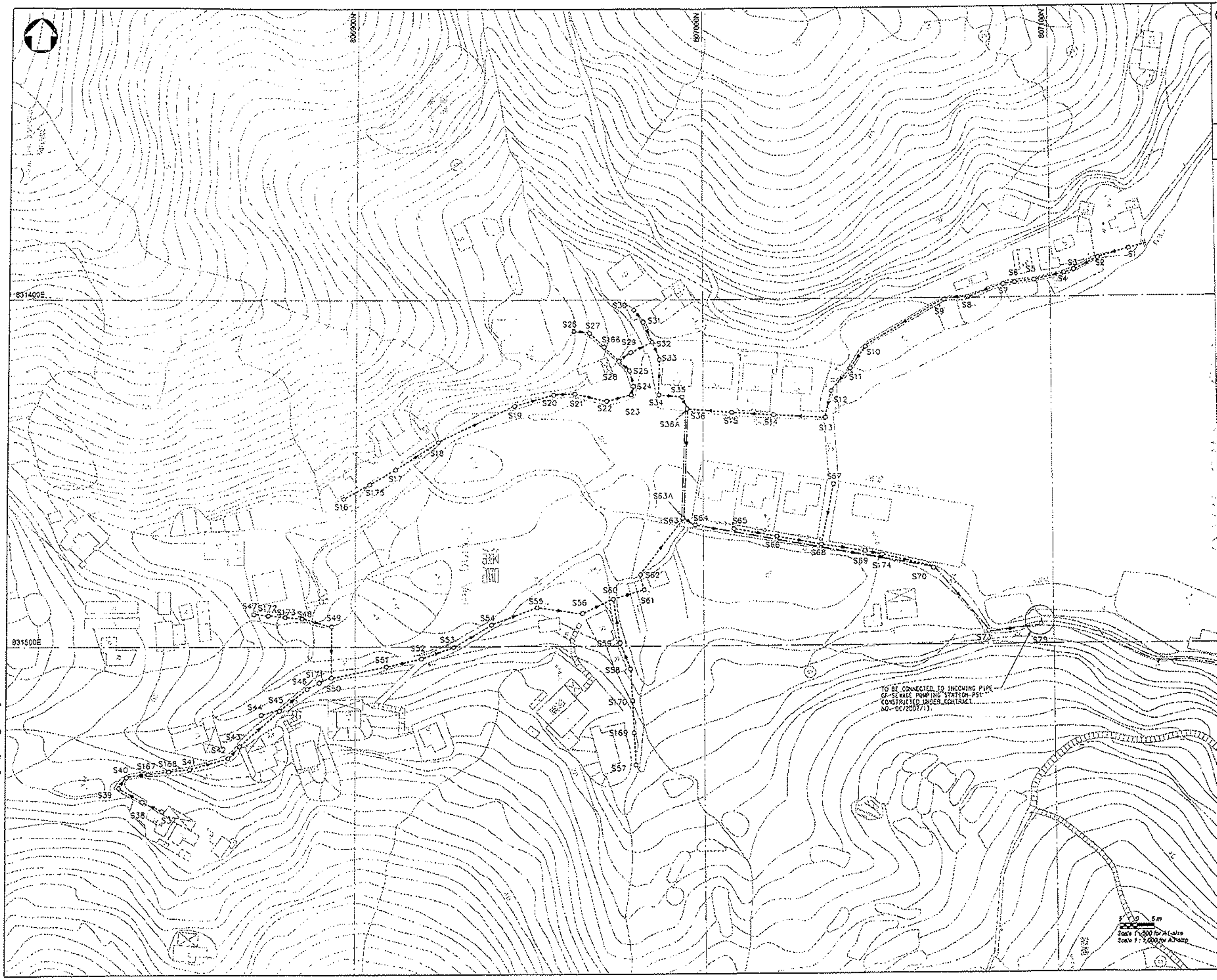
Close up of CT No.12

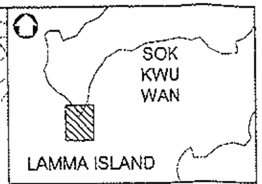


LEGEND

- CELTIS TIMORENSIS TO BE LABELLED, FENCED AND PROTECTED AND TO BE TRANSPLANTED IN ADVANCE OF PUMPING STATION CONSTRUCTION
- CELTIS TIMORENSIS TO BE LABELLED, FENCED AND PROTECTED
- VEGETATION SURVEY BOUNDARY (10m OFFSET FROM SEWERAGE ALIGNMENT)
- PROPOSED SEWERAGE ALIGNMENT AND PUMPING STATION AREAS

Figures





KEY PLAN

NOTES :

1. FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 2005/C1/2001.

Rev.	Date	Description	Drawn	Checked
B	JAN/08	ISSUE FOR CONSTRUCTION	JL	MS
A	SEP/07	TENDER SUBMISSION	JL	MS

The Government of the Hong Kong Special Administrative Region
Drainage Services Department

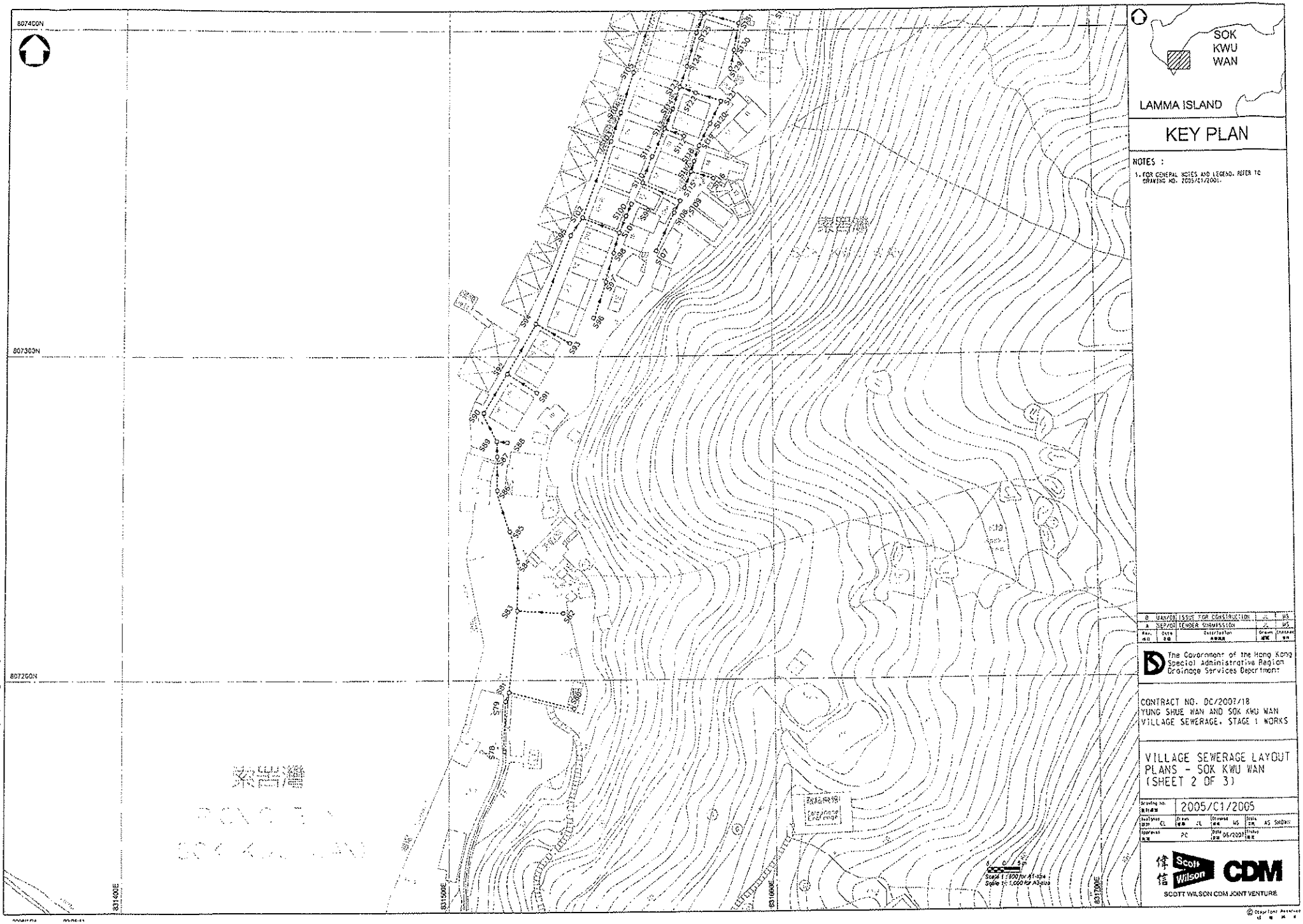
CONTRACT NO. DC/2007/18
YUNG SHUE WAN AND SOK KWU WAN
VILLAGE SEWERAGE, STAGE 1 WORKS

VILLAGE SEWERAGE LAYOUT PLANS - SOK KWU WAN (SHEET 1 OF 3)

Drawing No. 2005/C1/2004

Designed CL	Drawn JL	Checked MS	Scale AS SHOWN
Approved PC		Date 05/2007	Status

SCOTT WILSON CDM JOINT VENTURE



KEY PLAN

NOTES :

1. FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 2005/C1/2001.

Rev.	Date	Description	Drawn	Checked
B	MAY/08	ISSUE FOR CONSTRUCTION	JC	MS
A	SEP/07	TENDER SUBMISSION	JC	MS

The Government of the Hong Kong Special Administrative Region
Drainage Services Department

CONTRACT NO. DC/2007/18
YUNG SHUE WAN AND SOK KWU WAN VILLAGE SEWERAGE, STAGE 1 WORKS

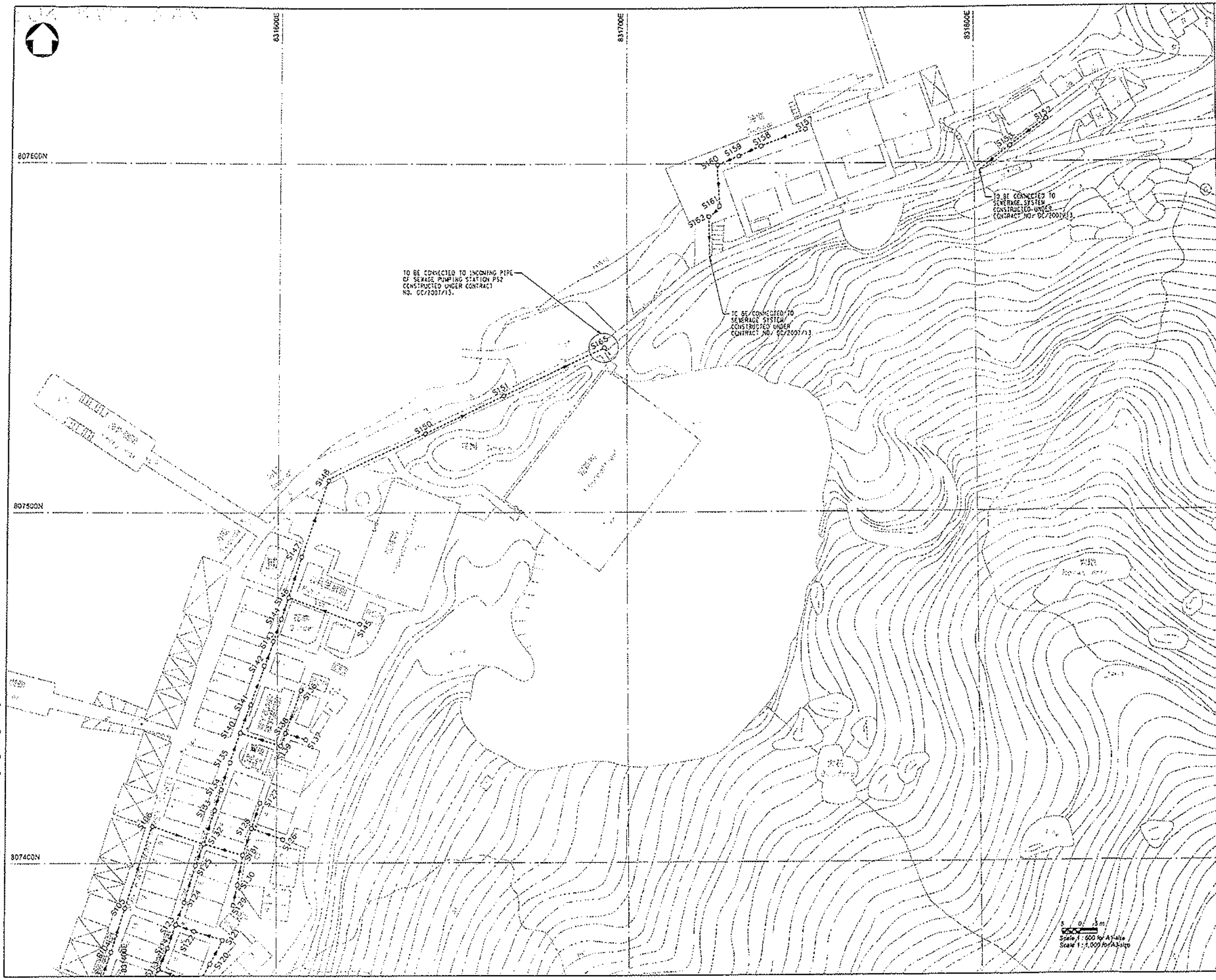
VILLAGE SEWERAGE LAYOUT PLANS - SOK KWU WAN (SHEET 2 OF 3)

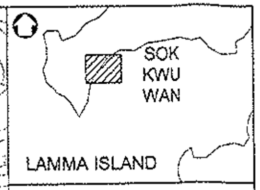
Drawing No. 2005/C1/2005

Drawn CL | Checked MS | Scale AS SHOWN
Designed PC | Date 05/2007 | Project

Scott Wilson CDM
SCOTT WILSON CDM JOINT VENTURE

C:\Documents and Settings\CLEUNG\Desktop\DC_2007_18\DRG_2005-B.dgn





KEY PLAN

NOTES :

1. FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 2005/C1/2001.
2. THE CONTRACTOR BE RESPONSIBLE FOR LIAISE WITH THE CONTRACTOR UNDER CONTRACT NO. DC/2007/13 FOR ANY INTERFACING ISSUE OF THEIR WORKS.

Rev.	Date	Description	Drawn	Checked
B	JAN/08	ISSUE FOR CONSTRUCTION	JL	MS
A	SEP/07	TENDER SUBMISSION	JL	MS

The Government of the Hong Kong Special Administrative Region
Drainage Services Department

CONTRACT NO. DC/2007/18
YUNG SHUE WAN AND SOK KWU WAN
VILLAGE SEWERAGE, STAGE 1 WORKS

VILLAGE SEWERAGE LAYOUT
PLANS - SOK KWU WAN
(SHEET 3 OF 3)

Drawing No. 2005/C1/2006

Designed CL · Drawn JL · Checked MS · Scale AS SHOWN
Approved PC · Date 05/2007

SCOTT WILSON CDM JOINT VENTURE