DRAINAGE SERVICES DEPARTMENT (DSD)
CONTRACT NO. DC/2005/02

CONSTRUCTION OF SEWERS, RISING MAINS
& SEWAGE PUMPING STATION AT KAM TIN, NAM SANG
WAI AND AU TAU IN YUEN LONG

12th Monthly Construction Phase EM&A Report for March 2007 (Designated Elements)

PREPARED FOR

Leader Civil Engineering Corporation Ltd

Quality Index

Date	Reference No.
02 April 2007	TCS/00310/06/600/R0245

Prepared by	Reviewed by	Certified by	Approved by	Verified by
Ben Tam (Project Supervisor)	Ken Wong (Deputy Project ETL)	David Yeung (Project ETL)	TW Tam (General Manager)	Dr Anne F Kerr (Project IEC)

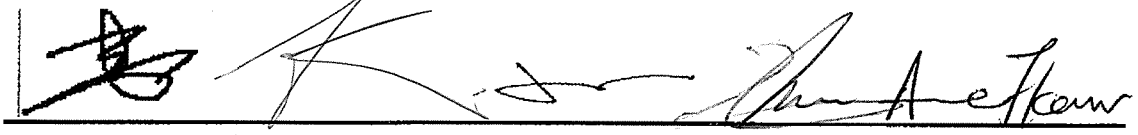


TABLE OF CONTENTS

List of Tables

List of Annexes

Executive Summary

ES.01 Leader Civil Engineering Corporation Ltd (the Contractor) has been awarded the DSD Contract DC/2005/02 Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long (the Project). The Project requires an Environmental Monitoring and Audit (EM&A) program to be implemented by an Environmental Team (ET) throughout the contract period in compliance with the requirements as stated in the project Environmental Permit (EP-220/2005) and the project's Updated EM&A (Designated Elements) Manual.

ES.02 This is the 12th Monthly Construction Phase EM&A Report (March 2007, Report No. 12) reporting the environmental impact monitoring and audit (EM&A) conducted from 01 to 31 March 2007. The EM&A in March 2007 covered air quality, noise and waste management.

Breach of Action and Limit (AL) Levels

ES.03 No Action/Limit Level exceedance was recorded in this reporting month. All the monitoring results were complied with standard.

Complaint Log

ES.04 No environmental complaint was received in this reporting month.

Notification of Any Summons and Successful Prosecution

ES.05 There was no environmental summon or prosecution in this reporting month.

Reporting Changes

ES.06 There are no changes to be reported in this reporting month.

Future Key Issues

ES.07 Construction activities to be undertaken in April 2007 include pumping testing at Kam Tin pumping station, excavation at Sha Po pumping station, pipe jacking at Nam Sang Wai pumping station, pipe jacking works at S5 and S6, sheeting piling, excavation and backfilling works for receiving pit at S4. Potential environmental impacts arising from the works include air quality, noise and water quality (particularly site runoff). Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule to ensure site environmental performance is acceptable.

1.0 BASIC PROJECT INFORMATION

1.01 Leader Civil Engineering Corporation Ltd (the Contractor) has been awarded the DSD Contract DC/2005/02 Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long (the Project). The Project is part of the Yuen Long and Kam Tin Sewerage and Sewage Disposal (YLKTSSD) Scheme. A site layout map showing the site boundary and the work areas is shown in **Annex A**.

1.02 This 12th Monthly Construction Phase EM&A Report (March 2007, Report No. 12) summarizes the impact monitoring results and audit findings in the reporting month from 01 to 31 March 2007.

Project Organization

1.03 The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in **Annex B**.

Construction Program of the Reporting Period

1.04 A construction program showing the construction work undertaken in this reporting month was shown in **Annex C**. Environmental mitigation measures implemented are shown in **Table 2-1.**

Management Structure

1.05 The management structure of the Project is shown in **Annex B**.

Works Undertaken in the Reporting Period

1.06 The construction works undertaken during the reporting month under the Environmental Permit (EP-220/2005) were shown as follows:

Kam Tin Pumping Station (P1)
- Pumping Test

Sha Po Pumping Station (P2)
- Sheet piling

Nam Sang Wai Pumping Station (P3)
- Excavation

Nam Sang Wai Road (S4)
- Pipe jacking

Pok Wai South Road (S5 and S6)
- Pipe jacking

2.0 ENVIRONMENTAL STATUS

Work Undertaken in the Reporting Period with Illustrations

2.01 A summary of the work undertaken in this reporting month with illustrations and environmental mitigation measures implemented is shown in **Table 2-1**.

Table 2-1 Work Undertaken in the Reporting Period with Illustrations of Mitigation Measures

Location	Description of Construction Activities	Environmental Mitigation Measures	EM&A Ref.
P1 (Kam Tin Pumping Station)	• Sheet piling • Footing construction	• Erect 2.4m high noise barrier hoarding around the works area at P1, P2 and P3 • Remove dust and spray water at the construction access • Cover the stockpiles of dusty material properly • Spray water to all dusty materials immediately before loading and unloading	A1 & F6 A2 A3 A4
P2 (Sha Po Pumping Station)	• Hoarding erection	• Wash the wheels of vehicles before leaving the site	A5
P3 (Nam Sang Wai Pumping Station)	• Pipe jacking	• Install and use power-operated cover at the dump trucks • Spray water at the pavement breaking locations • Spray the working area of excavation frequently • Maximize the use of quiet PME on site	A6 A7 A8 B1, B2 & F5
S4 (Nam Sang Wai Road)	• Drilling and grouting	• Apply and obtain appropriate waste disposal licenses • Handle, store and dispose of chemical wastes as per relevant regulations • Implement trip-ticket system for waste disposal • Restrict open fires and provide fire fighting equipment in the works area	D1 D2, D3 & D4 D5 F9
S5 & S6 (Pok Wai South Road)	• Pipe jacking	• Perform weekly inspection with ET and monthly audit with IEC • Conduct noise and dust monitoring as per EM&A manual during construction • Provide sedimentation tanks for treating site discharge. • Recycle wheel washing water and provide sedimentation tanks for treating site discharge.	H1 I1 & I2 - -

2.02 Photographic records showing the implemented 2.4m high noise barrier at the pumping station (S3) are shown in **Annex D**.

Project Drawings

2.03 Drawings showing the work areas under EP-220/2005 and the locations of the designated monitoring stations are presented in **Annex E**.

2.04 There are four designated air quality (AM1, AM5, AM6 & AM7) and four noise monitoring stations (AM1, AM5, AM6 & AM7) under the project EP.

Station ID	Nature of Premise	Site Work Description	Station Coordinates
AM1	Site Boundary in NSW	Sheet piling and trench excavation.	835829 N 822910 E
AM5	Site Boundary in FKH		835121 N 823515 E
AM6	Site Boundary in KT		833308 N 823987 E
AM7	Site Boundary in NSW		836171 N 822586 E
NM3	Village House in NSW		835808 N 822817 E
NM4	Village House in NSW		835282 N 822811 E
NM6	Village House in KT		833288 N 823999 E
NM7	Village House in FKH		835121 N 823495 E

2.05 In this reporting month, the impact monitoring was carried out at four designated air and four noise monitoring stations in according to the monitoring schedule.

3.0 SUMMARY OF EM&A REQUIREMENTS

Monitoring Parameters

3.01 Environmental monitoring and audit requirements are set out in the Updated EM&A manual. Air quality and construction noise have been identified to be the key monitoring parameters during the impact phase for the construction of the project.

3.02 A summary of the impact EM&A requirements for air quality and construction noise as per the project Updated EM&A Manual are shown in **Table 3-1.**

Table 3-1 Summary of EM&A Requirements

Environmental Aspect	Monitoring Parameters
Air Quality	24-Hr TSP
Construction Noise	Leq 30min during day time 07:00 to 19:00
	Supplementary L10 and L90 for reference.

Environmental Quality Performance Limits

3.03 A summary of the Action/Limit (A/L) Levels for air quality and construction noise is shown in **Tables 3-2** and **3-3.**

Table 3-2 Action and Limit Levels for Air Quality Monitoring

Monitoring Location	Action Level ($\mu g/m^3$)		Limit Level ($\mu g/m^3$)	
	1-Hr TSP	24-Hr TSP	1-Hr TSP	24-Hr TSP
AM1	391	184	500	260
AM5	353	237	500	260
AM6	329	183	500	260
AM7	383	204	500	260

Table 3-3 Action and Limit Levels for Construction Noise

Parameter	Action Level in dB(A)	Limit Level in dB(A)
0700-1900 hrs on normal weekdays	When one or more documented complaints are received	> 75 dB(A)

Event and Action Plans

3.04 An Event Action Plan for air quality and construction noise has been implemented for this project. Details of the Event Action Plan are presented in **Annex F**.

Environmental Mitigation Measures

3.05 The project EIA report has recommended environmental mitigation measures to minimize potential environmental impacts arising from the construction of the project. A full list of the mitigation measures is detailed in **Annex G**.

Environmental Requirements in Contract Documents

3.06 The environmental requirements in the contract documents generally refer to the compliance of the requirements as stipulated in the project EP and the updated EM&A Manual.

4.0 IMPLEMENTATION STATUS

4.01 The implementation status of environmental protection and pollution control/mitigation measures as recommended in the project EIA report is summarized in **Table 2-1** and the implementation schedule as shown in **Annex G**.

4.02 A summary status of the permits, licences, and/or notifications on environmental protection for this Project in this reporting period is presented in **Table 4-1**.

Table 4-1 Status of Environmental Licenses and Permits

Item	Item Description	Permit Status
1	Environmental Permit No.: EP-220/2005	Issued in June 2005
2	Air Pollution Control (Construction Dust)	Notified EPD on 24 Dec 2005
3	Chemical Waste Producer Registration (No. 5213-528-L2544-08)	Registration on 27 Jan 2006
4	Water Pollution Control (Discharge License No. 1U434/1)	Issued on 08 May 2006
5	Account for Disposal of Construction Waste No. 5004959	Registration on 27 Dec 2005
6	Construction Noise Permit (CNP No. PP-RN0036-06)	Valid (8 Dec 2006 to 07 Apr 2007)
7	Construction Noise Permit (CNP No. GW-RN0591-06)	Valid (8 Dec 2006 to 07 Apr 2007)
8	Construction Noise Permit (CNP No. GW-RN0083-07)	Valid (8 Mar 2007 to 07 Sep 2007)

5.0 MONITORING RESULTS

MONITORING METHODOLOGY OF AIR QUALITY MONITORING

5.01 The 24-Hr TSP monitoring was carried out by a High volume sampler (HVS) in compliance with the updated EM&A Manual. The HVS employed complied with the PS specifications including.

- Power supply of 220v/50 hz for 24-hour continuous operation;
- 0.6-1.7 m^3/min (20-60 SCFM) adjustable flow rate;
- A 7-day mechanical timer for 24-hour operation;
- An elapsed time indicator with ±2 minutes accuracy for 24-Hr operation;
- Minimum exposed area of 63 in^2;
- Flow control accuracy of ±2.5% deviation over 24-Hr operation;
- An anodized aluminum shelter to protect the filter and sampler;
- A motor speed-voltage control to control mass flow rate with accuracy of ±2.5% deviation over 24-hr sampling period;
- Provision of a flow recorder for continuous monitoring;
- Provision of a peaked roof inlet;
- Incorporation with a manometer; and
- An 8”x10” stainless steel filter holder to hold, seal and easy to change the filter paper.

5.02 The filter papers used in 24-Hr TSP monitoring were of size 8”x10” and provided by a local HOKLAS-accredited laboratory, ALS Techichem Pty (HK) Limited (HOKLAS No. 66). The filters papers after measurements were returned to the laboratory for the required treatment and analysis. In house QA/QC procedures for all monitoring practices to ensure the validity of monitoring data. Blank filters samples were collected and delivered to the HOKLAS-accredited laboratory for QA/QC check.

5.03 The meteorological information during the reporting period was obtained from Lau Fau Shan Station of the Hong Kong Observatory (HKO).

MONITORING METHODOLOGY OF CONSTRUCTION NOISE MONITORING

5.04 Noise measurements were taken in terms of the A-weighted equivalent sound pressure level (Leq) measured in decibels (dB). Supplementary statistical results (L_{10} and L_{90}) were also obtained for reference.

5.05 Hand-held sound level meters (B&K Model 2238) and associated acoustical calibrators in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specification were used for taking the baseline noise measurements.

5.06 Windshield was fitted in all measurements. All noise measurements were made with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq).

5.07 No noise measurement was made in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s.

LABORATORY AND MONITORING EQUIPMENT USED

5.08 A local HOKLAS-accredited laboratory, ALS Technichem (HK) Pty Ltd (HOKLAS No. 66), is responsible for the analytical testing of the 24-Hr TSP filter papers.

5.09 The monitoring equipment used in the impact EM&A program is presented in **Table 5-1**:

Table 5-1 Monitoring Equipment Used in Impact EM&A Program

Parameters	Monitoring Equipment	
Air Quality	24-Hr TSP	Greasby Anderson GMWS2310 High Volume Sampler
Noise	Leq30min	B&K Type 2238
	On-site Calibration	B&K Type 4231

EQUIPMENT CALIBRATION

5.10 Initial calibration of the HVS was performed upon installation and thereafter at a six month intervals in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A). The calibration data are properly documented and the records are maintained by ET for future reference**.**

5.11 The sound level meters were calibrated using an acoustic calibrator prior to and after measurements. The meters are regularly calibrated in accordance with the manufacturer's instructions. Prior to and following each noise measurement, the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were considered valid only if the calibration levels before and after the noise measurement agree to within 1.0 dB.

5.12 The renew calibration certificates of the monitoring equipment used during the impact monitoring program in this month are attached in **Annex H**.

PARAMETERS MONITORED

5.13 The environmental parameters monitoring in this reporting period were compliance with the monitoring requirements as in **Table 3-1**.

MONITORING LOCATIONS

5.14 There are four designated air quality and four noise monitoring stations under the project EP. For this reporting month, monitoring was carried out at four designated air (AM1, AM5, AM6 & AM7) and four noise (NM3, NM4, NM6 & NM7) monitoring stations. The locations of the designated monitoring stations are shown in **Table 5-2** and geographically in **Annex E**.

Table 5-2 Location of Air Quality and Construction Noise Monitoring Stations

Air Quality (4 Stations)	
AM1	Worksite boundary facing scattered house in Nam Sang Wai
AM5	Worksite boundary facing Fung Kat Heung
AM6	Worksite boundary facing scattered near Route 3
AM7	Worksite boundary facing scattered house in Nam Sang Wai
Construction Noise (4 Stations)	
NM3	Village House in Nam Sang Wai
NM4	Village House in Nam Sang Wai
NM6	Scattered House near Route 3
NM7	Fung Kat Heung

MONITORING FREQUENCY AND PERIOD

5.15 The impact 24-Hr TSP monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A manual. A total of 20 monitoring events were carried out in this reporting month.

5.16 The impact noise monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A manual. A total of 24 monitoring events were carried out in this reporting month.

MONITORING RESULTS WITH DATE AND TIME

5.17 The air quality monitoring data for this reporting period were summarized in **Table 5-3**.

Table 5-3 Summary of Air Quality Monitoring Results

Date	24-Hr TSP (μg/m^3)			
	AM1	**AM5**	**AM6**	**AM7**
5-Mar-07	53	98	49	79
10-Mar-07	109	205	109	114
16-Mar-07	44	95	52	55
22-Mar-07	64	111	71	72
28-Mar-07	36	97	53	46
Average (Range)	61 (36–109)	121 (95–205)	67 (49–109)	73 (46–114)

All 24-Hr TSP monitoring were preset to start at 00:00 on each monitoring date.
* Action/Limit Level exceedances were recorded.

5.18 No Action/Limit Level exceedance was recorded in this reporting month.

5.19 The impact noise monitoring results are summarized in **Tables 5-4** to **5-7**.

Table 5-4 Summary of Noise Monitoring Results at NM3

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
01-Mar-07	11:32	57.2	56.9	52.3	52.5	51.8	54.2	54.7	57.7
07-Mar-07	13:43	53.3	51.5	49.3	51.3	57.1	51.6	53.1	56.1
13-Mar-07	13:03	52.1	52.8	52.2	52.5	52.8	52.1	52.4	55.4
19-Mar-07	11:23	50.2	49.7	51.1	52.4	48.7	49.8	50.5	53.5
24-Mar-07	13:10	58.8	50.8	58.9	56.3	56.6	57.1	57.1	60.1
30-Mar-07	11:32	51.3	48.7	50.5	51.2	48.7	48.5	50.0	53.0
Limit Level									**75**

* A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-5 Summary of Noise Monitoring Results at NM4

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
1-Mar-07	10:19	53.5	56.7	57.1	53.4	53.3	53.5	54.9	57.9
7-Mar-07	10:34	49.2	53.5	49.9	52.1	50.2	50.3	51.1	54.1
13-Mar-07	10:47	53.6	55.2	57.4	52.3	50.5	53.1	54.2	57.2
19-Mar-07	13:45	47.5	49.6	48.1	46.6	48.8	46.9	48.0	51.0
24-Mar-07	10:49	49.8	53.1	55.5	55.0	47.3	49.0	52.6	55.6
30-Mar-07	10:16	54.5	53.9	45.1	44.1	45.1	52.3	51.2	54.2
Limit Level									**75**

* A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-6 Summary of Noise Monitoring Results at NM6

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
1-Mar-07	15:57	57.3	57.8	60.3	58.2	63.5	57.8	59.8	No
7-Mar-07	10:33	57.5	55.7	56.2	56.2	55.1	55.8	56.1	
13-Mar-07	10:30	62.2	55.2	56.9	57.5	57.1	54.5	58.1	Correction
19-Mar-07	11:40	50.3	49.8	49.8	51.8	52.2	52.5	51.2	
24-Mar-07	10:33	55.0	55.4	54.1	54.7	55.9	58.4	55.8	Required
30-Mar-07	10:46	58.1	56.7	56.3	55.8	55.2	66.4	60.4	
Limit Level									**75**

* Noise monitoring was undertaken at the façade, correction was not necessary.

Table 5-7 Summary of Noise Monitoring Results at NM7

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
1-Mar-07	13:01	51.1	50.5	51.5	51.3	49.8	55.9	52.2	No
7-Mar-07	13:02	54.1	53.6	53.0	53.5	54.3	54.4	53.8	
13-Mar-07	13:48	61.8	62.2	56.5	51.8	59.1	63.3	60.5	Correction
19-Mar-07	13:06	55.0	54.9	57.1	55.1	69.2	57.4	62.4	
24-Mar-07	13:58	55.5	54.0	62.6	65.3	62.0	57.1	61.2	Required
30-Mar-07	13:04	54.3	52.6	67.8	53.0	61.0	60.2	61.8	
Limit Level									**75**

* Noise monitoring was undertaken at the façade, correction was not necessary.

5.20 The monitoring schedule for the next reporting month is shown in **Table 5-8.**

Table 5-8 Monitoring Schedule for the Next Reporting Month

Date		Air Quality	Noise Leq 30min
1-Apr-07	Sun		
2-Apr-07	Mon		
3-Apr-07	Tue		
4-Apr-07	Wed		
5-Apr-07	Thu		
6-Apr-07	Fri		
7-Apr-07	Sat		
8-Apr-07	Sun		
9-Apr-07	Mon		
10-Apr-07	Tue		
11-Apr-07	Wed		
12-Apr-07	Thu		
13-Apr-07	Fri		
14-Apr-07	Sat		
15-Apr-07	Sun		
16-Apr-07	Mon		
17-Apr-07	Tue		
18-Apr-07	Wed		
19-Apr-07	Thu		
20-Apr-07	Fri		
21-Apr-07	Sat		
22-Apr-07	Sun		
23-Apr-07	Mon		
24-Apr-07	Tue		
25-Apr-07	Wed		
26-Apr-07	Thu		
27-Apr-07	Fri		
28-Apr-07	Sat		
29-Apr-07	Sun		
30-Apr-07	Mon		

	Monitoring Day
	Sunday or Public Holiday

WEATHER CONDITIONS DURING THE MONITORING PERIOD

5.21 The meteorological data on the monitoring dates are summarized in **Annex I**.

GRAPHICAL PLOTS OF TRENDS OF MONITORED PARAMETERS

5.22 The graphical plots of air quality and construction noise monitoring data are presented in **Annex J**.

MAJOR ACTIVITY CARRIED OUT DURING THE MONITORING PERIOD

5.23 There were construction activities of sheet piling and trench excavation undertaken during the monitoring period.

WEATHER CONDITIONS THAT AUGUST AFFECT THE MONITORING RESULTS

5.24 The weather conditions at the time of monitoring were considered acceptable for monitoring activities and did not have significant impact on the monitoring results obtained.

OTHER FACTORS INFLUENCING THE MONITORING RESULTS

5.25 There were no other noticeable external factors generally affecting the monitoring results in this reporting month.

QA/QC RESULTS AND DETECTION LIMITS

5.26 Not applicable.

6.0 REPORT ON NON-COMPLIANCE (NC), COMPLAINTS, NOTIFICATIONS OF SUMMONS (NoS) AND SUCCESSFUL PROSECUTIONS

RECORD OF NON-COMPLIANCE OF ACTION AND LIMIT LEVELS

6.01 There was no Action or Limit Level exceedance in this reporting month.

RECORD OF ENVIRONMENTAL COMPLAINTS RECEIVED

6.02 There was no environmental complaint received in this reporting month.

RECORD OF NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTION

6.03 There was no notification of summon or prosecution received in this reporting month.

REVIEW OF REASONS FOR AND IMPLICATIONS OF NC, COMPLAINTS AND NOS

6.04 No NC, complaints or NoS received in this reporting month.

DESCRIPTION OF FOLLOW-UP ACTIONS TAKEN

6.05 No NC, complaints or NoS received in this reporting month.

7.0 OTHERS

FUTURE KEY ISSUES

7.01 Construction activities to be undertaken in April 2007 include pumping testing at Kam Tin pumping station, excavation at Sha Po pumping station, pipe jacking at Nam Sang Wai pumping station, pipe jacking works at S5 and S6, sheeting piling, excavation and backfilling works for receiving pit at S4. Potential environmental impacts arising from the works include air quality, noise and water quality (particularly site runoff). Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule to ensure site environmental performance is acceptable.

SOLID AND LIQUID WASTE MANAGEMENT STATUS

7.02 The quantities of waste for disposal or reuse in this reporting month are summarized in **Tables 7-1** and **7-2.**

Table 7-1 Summary of Quantities of Waste for Disposal

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) (tons) – Disposed	8,429	Tuen Mun 38 Fill Bank
C&D Materials (Inert) (tons) – Reused	150	DSD Contract DC/2005/0
C&D Materials (Non-Inert) (tons)	-	NA
Chemical Waste (Litres)	-	NA
General Refuse (tons)	19	Refuse Collector

Table 7-2 Summary of Quantities of Waste for Reuse/Recycling

Type of Waste	Quantity	Disposal Location
Metals for Recycling (kg)	0	NA
Paper for Recycling (kg)	0	NA
Plastics for Recycling (kg)	0	NA

7.03 There was no site effluent discharged but an estimated volume of less than $50m^3$ of surface runoff was discharged in the reporting month.

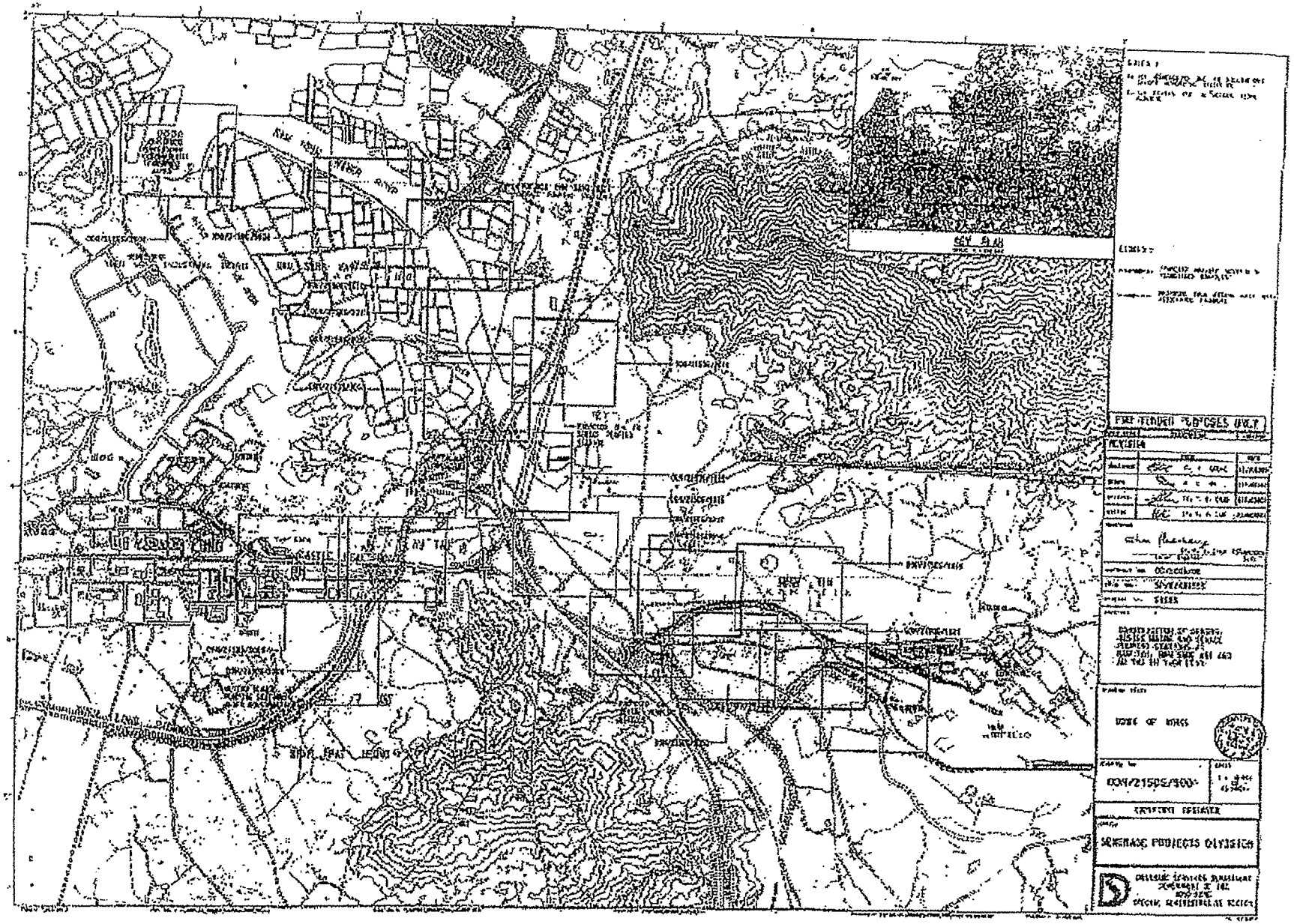
SUBMISSION OF PROFORMA

7.04 Representatives of the Engineer, the Contractor and ET carried out regular weekly joint site inspection on 06, 16, 21 and 30 March 2007 to evaluate the site environmental performance. No non-compliance was noted and five observations were recorded in weekly site inspection. The IEC monthly joint site inspection for March 2007 was scheduled on 03 April 2007.

7.05 Proforma of the weekly ET site inspection activities are presented in **Annex K**.

Annex A

Project Site Layout

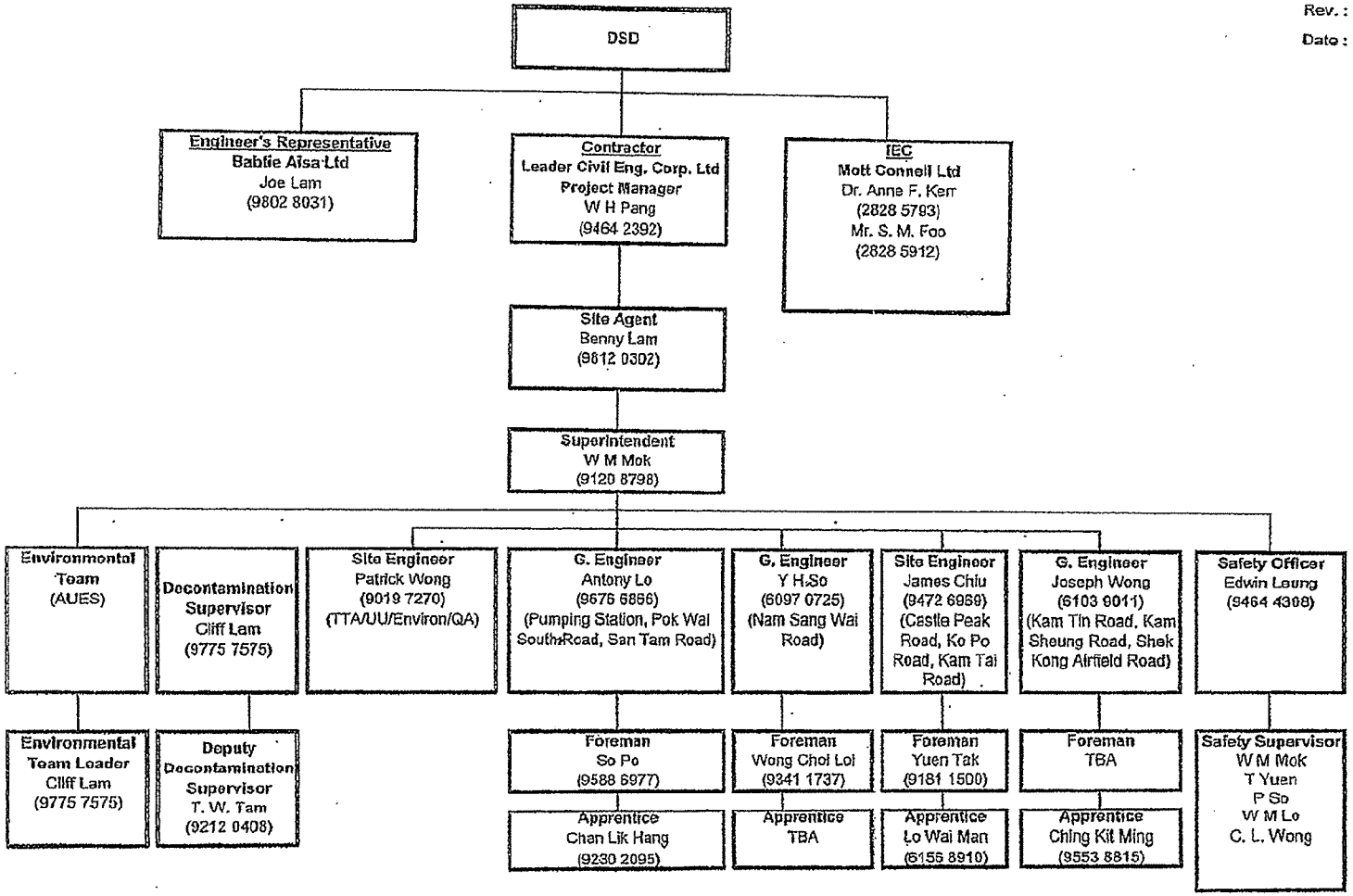

KEY PLAN
FOR TENDER PURPOSES ONLY
SEWERAGE PROJECTS DIVISION

Annex B

Project Organization and Management Structure

DSD Contract No. DC/2005/02
Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long
Project Environmental Organization Chart

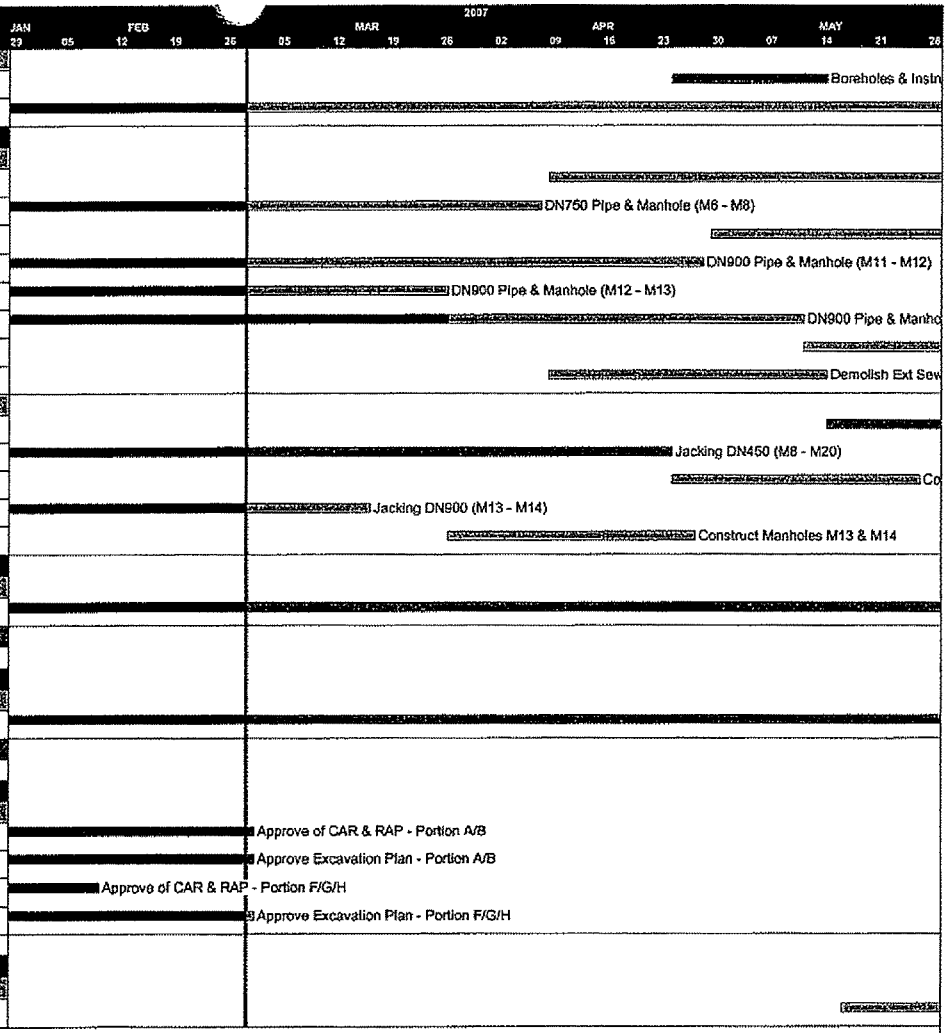
Rev. : 01
Date : 12-May-06



Annex C

Construction Program

Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
S7KB1020	Boreholes & Instrumentation (M4 - M19)	16	-124d	0	25APR07	14MAY07	24NOV06	12DEC06
S7KB1500	Install Settlement Markers	402	86d	69	08MAY06 A	30JUL07	08MAY06 A	10NOV07
Drainage and Ducts								
S7KEA1200	DN750 Pipe & Manhole (M4 - M6)	126	49d	0	09APR07	05SEP07	06JUN07	05NOV07
S7KEA1300	DN750 Pipe & Manhole (M6 - M8)	79	49d	59	19MAY06 A	07APR07	19MAY06 A	05JUN07
S7KEA1500	DN900 Pipe & Manhole (M10 - M11)	54	40d	0	30APR07	04JUL07	16JUN07	20AUG07
S7KEA1600	DN900 Pipe & Manhole (M11 - M12)	90	40d	45	06JUN06 A	28APR07	06JUN06 A	15JUN07
S7KEA1700	DN900 Pipe & Manhole (M12 - M13)	79	7d	72	06JUN06 A	26MAR07	06JUN06 A	03APR07
S7KEA1800	DN900 Pipe & Manhole (M14 - M15)	51	7d	26	27DEC06 A	11MAY07	27DEC06 A	19MAY07
S7KEA2000	DN400 Pipe & Manhole (M21 - M16a)	32	7d	0	12MAY07	18JUN07	21MAY07	27JUN07
S7KEA2500	Demolish Ext Sewer Adj. M4 - M6	30	145d	0	09APR07	14MAY07	29SEP07	05NOV07
S7KEB1000	Construct Jack/Receive Pits (M4 - M19)	30	-124d	0	16MAY07	18JUN07	13DEC06	18JAN07
S7KEB1120	Jacking DN450 (M8 - M20)	76	-124d	40	08NOV06 A	24APR07	08NOV06 A	23NOV06
S7KEB1140	Construct Manholes M8 & M20	27	71d	0	26APR07	26MAY07	20JUL07	20AUG07
S7KEB1220	Jacking DN900 (M13 - M14)	43	15d	68	02DEC06 A	16MAR07	02DEC06 A	03APR07
S7KEB1240	Construct Manholes M13 & M14	27	7d	0	27MAR07	27APR07	04APR07	07MAY07
Geotechnical works								
S7KP1000	Monitoring of Instruments	427	-108d	25	27MAY06 A	21MAR08	27MAY06 A	10NOV07
Section 8 - Preservation and Protection of Trees								
All Portions								
Landscape Softworks and Establishment Works								
S8QR1100	Preservation & Protection of Preserved Trees	861	0	34	29JUL06 A	20JAN09	29JUL06 A	20JAN09
Decontamination Works								
General Submission								
S9L1100	Approve of CAR & RAP - Portion A/B	12	-21d	90	28NOV06 A	01MAR07	28NOV06 A	01FEB07
S9L1300	Approve Excavation Plan - Portion A/B	12	-21d	90	28NOV06 A	01MAR07	28NOV06 A	01FEB07
S9L1500	Approve of CAR & RAP - Portion F/G/H	12		100	08AUG06 A	09FEB07 A	08AUG06 A	09FEB07 A
S9L1700	Approve Excavation Plan - Portion F/G/H	12	117d	90	08AUG06 A	01MAR07	08AUG06 A	20JUL07
Portion B								
Decontamination								
S9BU1000	Decontamination Works	48	289d	0	17MAY07	13JUL07	02MAY08	27JUN08



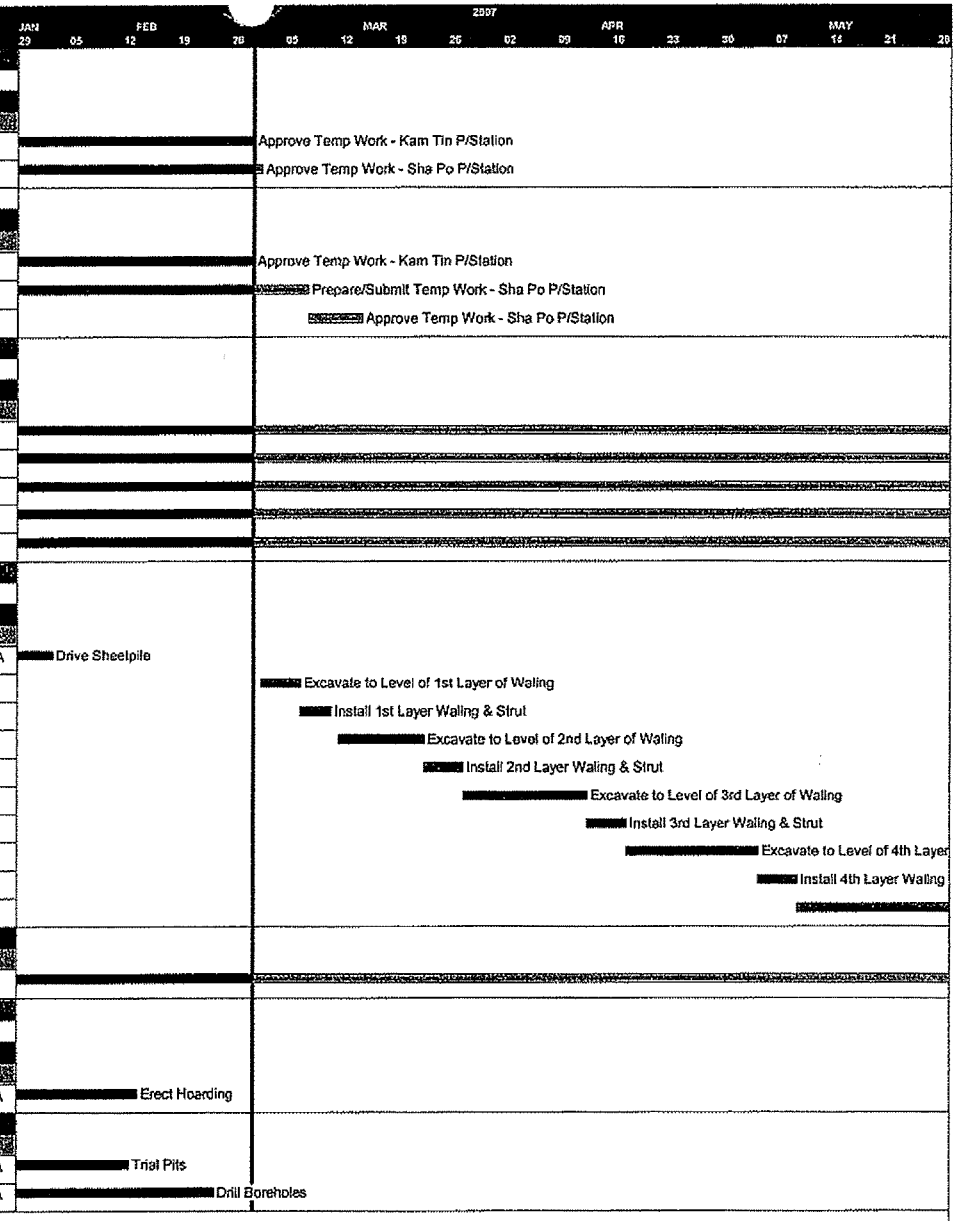
Start date	19DEC05
Finish date	31OCT08
Data date	01MAR07
Run date	08MAR07
Page number	6A

Leader Civil Engineering Corp. Ltd.
DSD Contract No. DC/2005/02
3-Month Rolling Programme - 3M01 at 29 February 2007

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

LEADER

Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
Submission								
Design Submission								
SUN1500	Approve Temp Work - Kam Tin P/Station	6	-20d	95	10NOV06 A	28FEB07	10NOV06 A	01FEB07
SUN1700	Approve Temp Work - Sha Po P/Station	6	93d	90	11JAN07 A	01MAR07	11JAN07 A	21JUN07
Method Statement Submission								
SUO1100	Approve Temp Work - Kam Tin P/Station	6	-20d	95	10NOV06 A	28FEB07	10NOV06 A	01FEB07
SUO1200	Prepare/Submit Temp Work - Sha Po P/Station	30	82d	80	10NOV06 A	07MAR07	10NOV06 A	13JUN07
SUO1300	Approve Temp Work - Sha Po P/Station	6	82d	0	08MAR07	14MAR07	14JUN07	21JUN07
Preliminaries								
PR2900	Deliver Ductile Iron Pipe	800	62d	36	29APR06 A	12NOV08	29APR06 A	29JAN09
PR3100	Deliver Precast Concrete Pipe	800	77d	38	24APR06 A	25OCT08	24APR06 A	29JAN09
PR3300	Deliver Vitrified Clay Pipe	800	47d	34	10APR06 A	29NOV08	10APR06 A	29JAN09
PR3400	Structural Monitoring by ISE	835	40d	36	06APR06 A	08DEC08	06APR06 A	29JAN09
PR3500	Environmental monitoring by ET	814	79d	39	06APR06 A	23OCT08	06APR06 A	29JAN09
Section 1 - Kam Tin Sewage Pumping Station								
Portion A								
Earthworks								
S1AG1000	Drive Sheetpile	20		100	16NOV06 A	02FEB07 A	16NOV06 A	02FEB07 A
S1AG1100	Excavate to Level of 1st Layer of Waling	4	-21d	0	02MAR07	06MAR07	02FEB07	06FEB07
S1AG1200	Install 1st Layer Waling & Strut	4	-21d	0	07MAR07	10MAR07	07FEB07	10FEB07
S1AG1300	Excavate to Level of 2nd Layer of Waling	10	-21d	0	12MAR07	22MAR07	12FEB07	26FEB07
S1AG1400	Install 2nd Layer Waling & Strut	4	-21d	0	23MAR07	27MAR07	27FEB07	02MAR07
S1AG1500	Excavate to Level of 3rd Layer of Waling	13	-21d	0	28MAR07	12APR07	03MAR07	17MAR07
S1AG1600	Install 3rd Layer Waling & Strut	4	-21d	0	13APR07	17APR07	19MAR07	22MAR07
S1AG1700	Excavate to Level of 4th Layer of Waling	14	-21d	0	18APR07	04MAY07	23MAR07	09APR07
S1AG1800	Install 4th Layer Waling & Strut	4	-21d	0	05MAY07	09MAY07	10APR07	13APR07
S1AG1900	Excavate to Level of 5th Layer of Waling	17	-21d	0	10MAY07	28MAY07	14APR07	04MAY07
Geotechnical works								
S1AP1000	Monitoring of Instruments	476	11d	18	16NOV06 A	14JUN08	16NOV06 A	27JUN08
Section 2 - Sha Po Sewage Pumping Station								
Portion B								
Preliminaries								
S2BA1000	Erect Hoarding	18		100	27NOV06 A	13FEB07 A	27NOV06 A	13FEB07 A
Ground Investigation								
S2BB1000	Trial Pits	20		100	02SEP06 A	12FEB07 A	02SEP06 A	12FEB07 A
S2BB1100	Drill Boreholes	11		100	05SEP06 A	23FEB07 A	05SEP06 A	23FEB07 A



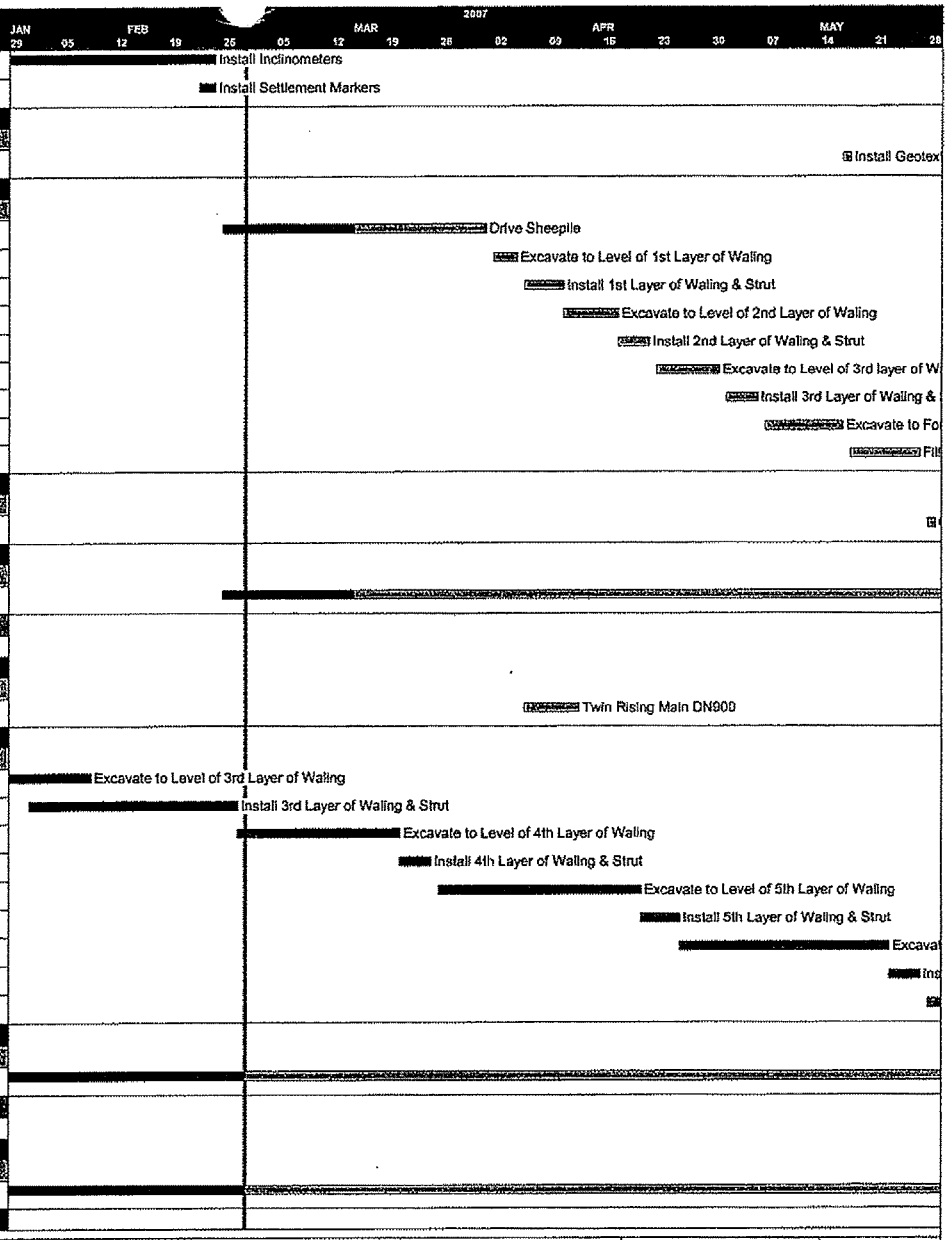
Start date	19DEC05
Finish date	31OCT09
Data date	01MAR07
Run date	08MAR07
Page number	1A
© Primavera Systems, Inc.	

Leader Civil Engineering Corp. Ltd.
DSD Contract No. DC/2005/02
3-Month Rolling Programme - 3M01 at 29 February 2007

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

LEADER

Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
S2BB1200	Install Inclinometers	2		100	06SEP06 A	24FEB07 A	06SEP06 A	24FEB07 A
S2BB1300	Install Settlement Markers	1		100	23FEB07 A	24FEB07 A	23FEB07 A	24FEB07 A
Drainage and Ducts								
S2BEA1400	Install Geotextile Filter to F/L of Base Slab	1	82d	0	17MAY07	17MAY07	23AUG07	23AUG07
Earthworks								
S2BG1000	Drive Sheepile	18	82d	5	26FEB07 A	31MAR07	26FEB07 A	10JUL07
S2BG1100	Excavate to Level of 1st Layer of Waling	3	82d	0	02APR07	04APR07	11JUL07	13JUL07
S2BG1200	Install 1st Layer of Waling & Strut	4	82d	0	06APR07	10APR07	14JUL07	18JUL07
S2BG1300	Excavate to Level of 2nd Layer of Waling	6	82d	0	11APR07	17APR07	19JUL07	25JUL07
S2BG1400	Install 2nd Layer of Waling & Strut	4	82d	0	18APR07	21APR07	26JUL07	30JUL07
S2BG1500	Excavate to Level of 3rd layer of Waling	7	82d	0	23APR07	30APR07	31JUL07	07AUG07
S2BG1600	Install 3rd Layer of Waling & Strut	4	82d	0	02MAY07	05MAY07	08AUG07	11AUG07
S2BG1700	Excavate to Formation Level	9	82d	0	07MAY07	16MAY07	13AUG07	22AUG07
S2BG1800	Fill Grade 200 Rockfill	8	82d	0	18MAY07	28MAY07	24AUG07	01SEP07
In-Situ Concrete								
S2BL1000	Cast Blinding Concrete	1	82d	0	28MAY07	28MAY07	03SEP07	03SEP07
Geotechnical works								
S2BP1000	Monitoring of Instruments	308	84d	1	26FEB07 A	16MAR08	26FEB07 A	27JUN08
Section 3 - Nam Sang Wai Sewage Pumping Station								
Portion C								
Pipework - Rising Main								
S3CFA1000	Twin Rising Main DN900	6	180d	0	06APR07	12APR07	09NOV07	15NOV07
Earthworks								
S3CG1500	Excavate to Level of 3rd Layer of Waling	14		100	23JAN07 A	08FEB07 A	23JAN07 A	08FEB07 A
S3CG1600	Install 3rd Layer of Waling & Strut	4		100	01FEB07 A	27FEB07 A	01FEB07 A	27FEB07 A
S3CG1700	Excavate to Level of 4th Layer of Waling	18	-117d	5	28FEB07 A	20MAR07	28FEB07 A	27OCT06
S3CG1800	Install 4th Layer of Waling & Strut	4	-117d	0	21MAR07	24MAR07	28OCT06	02NOV06
S3CG1900	Excavate to Level of 5th Layer of Waling	22	-117d	0	26MAR07	20APR07	03NOV06	28NOV06
S3CG2000	Install 5th Layer of Waling & Strut	4	-117d	0	21APR07	25APR07	29NOV06	02DEC06
S3CG2100	Excavate to Level of 6th Layer of Waling	22	-117d	0	26APR07	22MAY07	04DEC06	29DEC06
S3CG2200	Install 6th Layer of Waling & Strut	4	-117d	0	23MAY07	28MAY07	30DEC06	04JAN07
S3CG2300	Excavate to Formation Level	22	-117d	0	28MAY07	22JUN07	05JAN07	30JAN07
Geotechnical works								
S3CP1000	Monitoring of Instruments	632	38d	49	06APR06 A	28MAR08	06APR06 A	12MAY08
Section 4 - Sewers & RM in Portion D, F, G, H, I								
Portion D								
Ground Investigation								
S4DB1300	Install Settlement Markers	579	269d	46	31OCT06 A	01MAR08	31OCT06 A	20JAN09
Pipework - Rising Main								



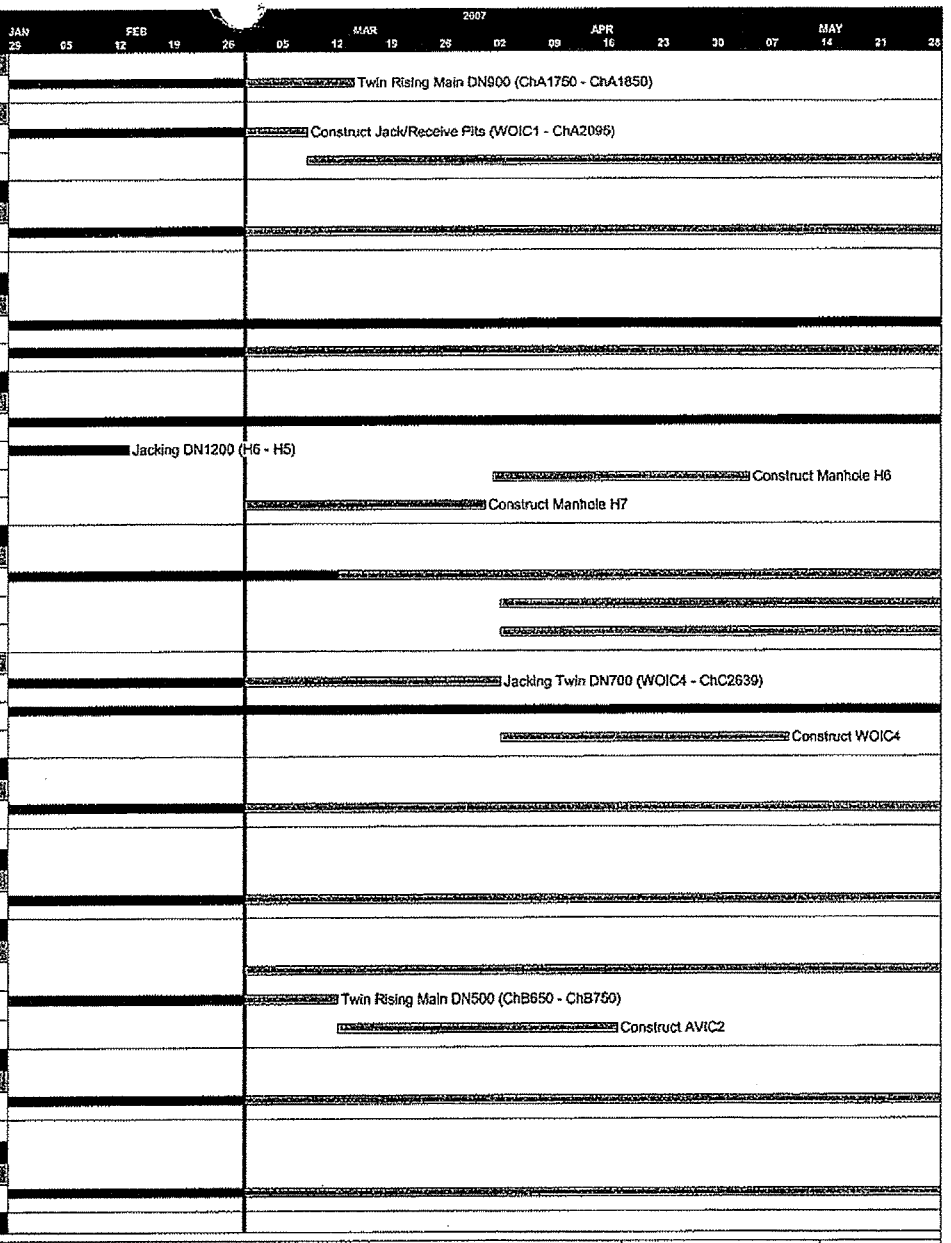
Start date	19DEC05
Finish date	31OCT09
Data date	01MAR07
Run date	08MAR07
Page number	2A
© Primavera Systems, Inc.	

Leader Civil Engineering Corp. Ltd.
DSD Contract No. DC/2005/02
3-Month Rolling Programme - 3M01 at 29 February 2007

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

LEADER

Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
Tunnel Works								
S4DFA1000	Twin Rising Main DN900 (ChA1750 - ChA1850)	124	84d	90	02NOV06 A	14MAR07	02NOV06 A	23JUN07
Tunnel Works								
S4DFB1000	Construct Jack/Receive Pits (WOIC1 - ChA2095)	72	84d	90	02DEC06 A	08MAR07	02DEC06 A	16JUN07
S4DFB1020	Jacking Twin DN900 (WOIC1 - ChA2095)	131	84d	0	09MAR07	13AUG07	18JUN07	22NOV07
Geotechnical works								
S4DP1000	Monitoring of Instruments	587	199d	36	02NOV06 A	13MAY08	02NOV06 A	08JAN09
Portion F								
Ground Investigation								
S4FB1180	Boreholes & Instrumentation (AVIC6 - WOIC5)	6	47d	50	21DEC06 A	01NOV07	21DEC06 A	27DEC07
S4FB1500	Install Settlement Markers	720	131d	39	27APR06 A	14AUG08	27APR06 A	20JAN09
Drainage and Ducts								
Tunnel Works								
S4FEB1100	Construct Jack/Receive Pits (H3 - H2)	30	102d	50	22NOV06 A	21JAN08	22NOV06 A	24MAY08
S4FEB1420	Jacking DN1200 (H6 - H5)	36		100	16JAN07 A	13FEB07 A	16JAN07 A	13FEB07 A
S4FEB1440	Construct Manhole H6	27	209d	0	02APR07	04MAY07	10DEC07	11JAN08
S4FEB1540	Construct Manhole H7	27	208d	0	01MAR07	31MAR07	08NOV07	08DEC07
Pipework - Rising Main								
Tunnel Works								
S4FFA1000	Twin Rising Main DN500 (ChB750 - ChB800)	120	285d	24	05JAN07 A	29JUN07	05JAN07 A	10JUN08
S4FFA2200	Twin Rising Main DN700 (ChC2400 - WOIC4)	93	5d	0	03APR07	24JUL07	10APR07	30JUL07
S4FFA2300	Twin Rising Main DN700 (ChC2639 - H7)	52	200d	0	03APR07	04JUN07	30NOV07	31JAN08
Tunnel Works								
S4FFB1020	Jacking Twin DN700 (WOIC4 - ChC2639)	139	5d	80	25NOV06 A	02APR07	25NOV06 A	09APR07
S4FFB1100	Construct Jack/Receive Pits (AVIC6 - WOIC5)	57	47d	25	08JAN07 A	21DEC07	08JAN07 A	20FEB08
S4FFB1200	Construct WOIC4	30	68d	0	03APR07	09MAY07	25JUN07	30JUL07
Geotechnical works								
S4FP1000	Monitoring of Instruments	803	20d	33	05JUN06 A	13DEC08	05JUN06 A	08JAN09
Portion G								
Ground Investigation								
S4GB1500	Install Settlement Markers	738	111d	38	21APR06 A	06SEP08	21APR06 A	20JAN09
Pipework - Rising Main								
Tunnel Works								
S4GFA1300	Twin Rising Main DN500 (ChB450 - ChB550)	84	427d	0	01MAR07	08JUN07	30JUL08	07NOV08
S4GFA1500	Twin Rising Main DN500 (ChB650 - ChB750)	130	285d	92	14OCT06 A	12MAR07	14OCT06 A	21FEB08
S4GFA1600	Construct AVIC2	30	501d	0	13MAR07	17APR07	08NOV08	12DEC08
Geotechnical works								
S4GP1000	Monitoring of Instruments	729	60d	31	22APR06 A	28OCT08	22APR06 A	08JAN09
Portion H								
Ground Investigation								
S4HB1300	Install Settlement Markers	717	106d	35	26MAY06 A	12SEP08	26MAY06 A	20JAN09
Drainage and Ducts								



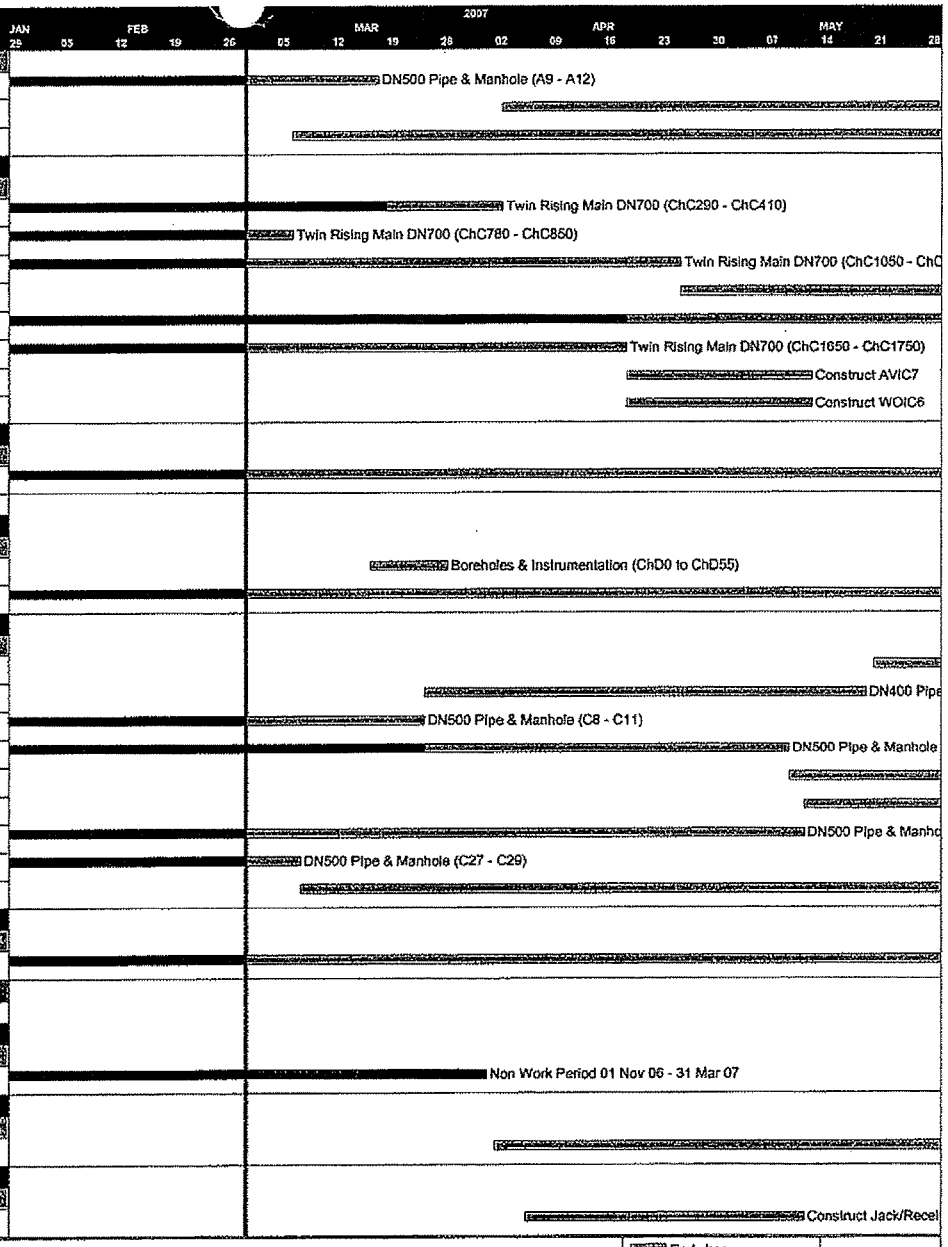
Start date	19DEC05
Finish date	31OCT09
Data date	01MAR07
Run date	08MAR07
Page number	3A

Leader Civil Engineering Corp. Ltd.
DSD Contract No. DC/2005/02
3-Month Rolling Programme - 3M01 at 29 February 2007

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

LEADER

Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
Trench Method								
S4HEA1200	DN500 Pipe & Manhole (A9 - A12)	90	9d	83	03JUL06 A	17MAR07	03JUL06 A	28MAR07
S4HEA1300	DN500 Pipe & Manhole (A12 - A14)	54	9d	0	03APR07	06JUN07	14APR07	16JUN07
S4HEA1500	DN400 Pipe & Manhole (A16 - A18)	73	214d	0	07MAR07	01JUN07	20NOV07	18FEB08
Pipework - Rising Main								
Trench Method								
S4HFA1200	Twin Rising Main DN700 (ChC290 - ChC410)	45	9d	71	03JUL06 A	02APR07	03JUL06 A	13APR07
S4HFA1700	Twin Rising Main DN700 (ChC780 - ChC850)	50	214d	90	09JAN07 A	06MAR07	09JAN07 A	19NOV07
S4HFA2000	Twin Rising Main DN700 (ChC1050 - ChC1150)	94	187d	50	04JAN07 A	25APR07	04JAN07 A	06DEC07
S4HFA2100	Twin Rising Main DN700 (ChC1150 - ChC1250)	84	187d	0	26APR07	04AUG07	07DEC07	19MAR08
S4HFA2500	Twin Rising Main DN700 (ChC1550 - ChC1650)	223	32d	8	16DEC06 A	20DEC07	16DEC06 A	29JAN08
S4HFA2600	Twin Rising Main DN700 (ChC1650 - ChC1750)	124	32d	67	19JUN06 A	18APR07	19JUN06 A	26MAY07
S4HFA3300	Construct AVIC7	20	217d	0	19APR07	12MAY07	07JAN08	29JAN08
S4HFA3400	Construct WOIC6	20	217d	0	19APR07	12MAY07	07JAN08	29JAN08
Geotechnical works								
S4HP1000	Monitoring of Instruments	764	59d	34	26MAY06 A	29OCT08	26MAY06 A	08JAN09
Portion I								
Ground Investigation								
S4IB1040	Boreholes & Instrumentation (ChD0 to ChD55)	8	341d	0	17MAR07	26MAR07	05MAY08	13MAY08
S4IB1300	Install Settlement Markers	726	122d	38	26JUN06 A	25AUG08	26JUN06 A	20JAN09
Drainage and Ducts								
Trench Method								
S4IEA1100	DN500 Pipe & Manhole (C5 - C8)	81	87d	0	21MAY07	24AUG07	01SEP07	07DEC07
S4IEA1200	DN400 Pipe & Manhole (C7a - C7)	47	87d	0	24MAR07	19MAY07	09JUL07	31AUG07
S4IEA1300	DN500 Pipe & Manhole (C8 - C11)	63	87d	68	21JUL06 A	23MAR07	21JUL06 A	07JUL07
S4IEA1400	DN500 Pipe & Manhole (C11 - C13)	71	312d	47	05DEC06 A	09MAY07	05DEC06 A	21MAY08
S4IEA1500	DN500 Pipe & Manhole (C13 - C14)	70	312d	0	10MAY07	01AUG07	22MAY08	13AUG08
S4IEA1900	DN500 Pipe & Manhole (C20 - C22)	71	347d	0	12MAY07	04AUG07	07JUL08	27SEP08
S4IEA2000	DN500 Pipe & Manhole (C22 - C25)	70	347d	14	19DEC06 A	11MAY07	19DEC06 A	05JUL08
S4IEA2200	DN500 Pipe & Manhole (C27 - C29)	62	223d	90	18OCT06 A	07MAR07	18OCT06 A	30NOV07
S4IEA2300	DN500 Pipe & Manhole (C29 - C32)	79	223d	0	08MAR07	09JUN07	01DEC07	07MAR08
Geotechnical works								
S4IP1000	Monitoring of Instruments	795	36d	34	28JUN06 A	25NOV08	28JUN06 A	08JAN09
Section 5 - Sewers & RM in Portion E								
Portion E								
Preliminaries								
S5EA1100	Non Work Period 01 Nov 06 - 31 Mar 07	125	0	79	28NOV06 A	31MAR07	28NOV06 A	31MAR07 *
Ground Investigation								
S5EB1400	Install Settlement Markers (Stage 2)	138	13d	0	02APR07	13SEP07	18APR07	29SEP07 *
Drainage and Ducts								
Trench Less Method								
S5EEB1000	Construct Jack/Receive Pits (H11 - H10)	30	21d	0	06APR07 *	11MAY07	02MAY07	05JUN07



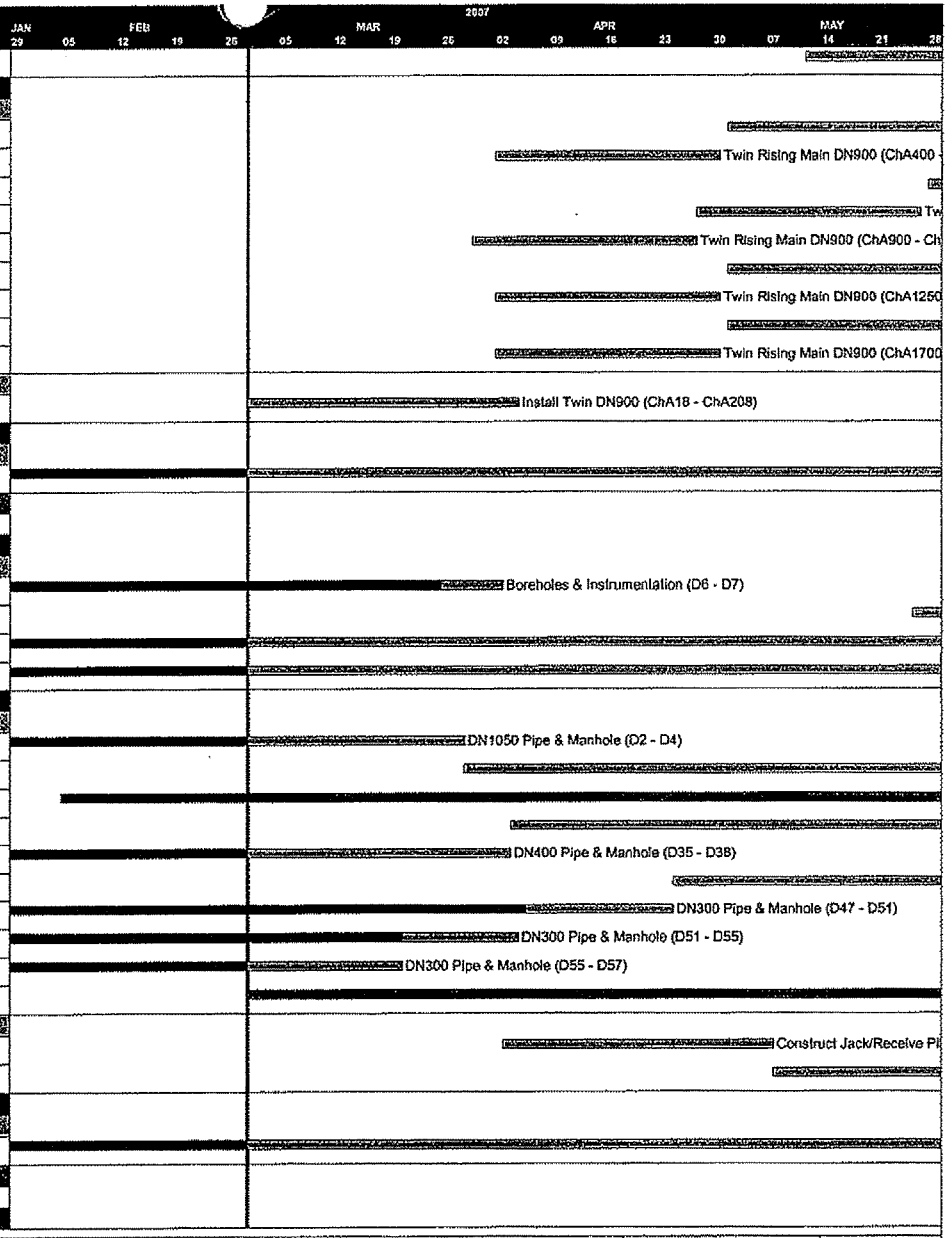
Start date	19DEC05
Finish date	31OCT09
Data date	01MAR07
Run date	08MAR07
Page number	4A
© Primavera Systems, Inc.	

Leader Civil Engineering Corp. Ltd.
DSD Contract No. DC/2005/02
3-Month Rolling Programme - 3M01 at 29 February 2007

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

LEADER

Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish
S5EEB1020	Jacking DN600 (H11 - H10)	95	21d	0	12MAY07	01SEP07	06JUN07	27SEP07
Pipework - Rising Main								
S5EFA1300	Twin Rising Main DN900 (ChA350 - ChA400)	24	224d	0	02MAY07	29MAY07	26JAN08	26FEB08
S5EFA1400	Twin Rising Main DN900 (ChA400 - ChA450)	24	224d	0	02APR07	30APR07	28DEC07	25JAN08
S5EFA2200	Twin Rising Main DN900 (ChA800 - ChA850)	24	178d	0	28MAY07	25JUN07	28DEC07	25JAN08
S5EFA2300	Twin Rising Main DN900 (ChA850 - ChA900)	24	178d	0	28APR07	26MAY07	29NOV07	27DEC07
S5EFA2400	Twin Rising Main DN900 (ChA900 - ChA950)	24	178d	0	30MAR07	27APR07	01NOV07	28NOV07
S5EFA3000	Twin Rising Main DN900 (ChA1200 - ChA1250)	24	248d	0	02MAY07	29MAY07	27FEB08	25MAR08
S5EFA3100	Twin Rising Main DN900 (ChA1250 - ChA1300)	24	248d	0	02APR07	30APR07	26JAN08	26FEB08
S5EFA3700	Twin Rising Main DN900 (ChA1550 - ChA1600)	24	224d	0	02MAY07	29MAY07	26JAN08	26FEB08
S5EFA4000	Twin Rising Main DN900 (ChA1700 - ChA1750)	24	224d	0	02APR07	30APR07	28DEC07	25JAN08
S5EFB1040	Install Twin DN900 (ChA18 - ChA208)	30	21d	0	01MAR07	04APR07	26MAR07	30APR07
Geotechnical works								
S5EP1000	Monitoring of Instruments	629	42d	43	01AUG06 A	10MAY08	01AUG06 A	30JUN08
Section 6 - Sewers in Portion J								
Portion J								
Ground Investigation								
S6JB1040	Boreholes & Instrumentation (D6 - D7)	13	47d	50	13JUN06 A	02APR07	13JUN06 A	29MAY07
S6JB1060	Boreholes & Instrumentation (D7 - D8)	13	47d	0	26MAY07	09JUN07	23JUL07	06AUG07
S6JB1500	Install Settlement Marker 1st Stage	741	107d	37	20APR06 A	11SEP08	20APR06 A	20JAN09
S6JB2100	Install Settlement Markers 2nd Stage	589	182d	34	07JUL06 A	14JUN08	07JUL06 A	20JAN09
Drainage and Ducts								
S6JEA1100	DN1050 Pipe & Manhole (D2 - D4)	62	3d	61	31AUG06 A	28MAR07	31AUG06 A	31MAR07
S6JEA1300	DN1050 Pipe & Manhole (D8 - D9)	62	3d	0	29MAR07	11JUN07	02APR07	14JUN07
S6JEA1900	DN400 Pipe & Manhole (D19 - D21)	124	-148d	30	05FEB07 A	12JUN07	05FEB07 A	13DEC06
S6JEA2600	DN400 Pipe (D32 - D33) Stage 1	47	261d	0	04APR07	30MAY07	16FEB08	11APR08
S6JEA3000	DN400 Pipe & Manhole (D35 - D38)	78	261d	63	25NOV06 A	03APR07	25NOV06 A	15FEB08
S6JEA3400	DN300 Pipe & Manhole (D44 - D47)	69	370d	0	25APR07	17JUL07	17JUL08	08OCT08
S6JEA3500	DN300 Pipe & Manhole (D47 - D51)	45	370d	65	29NOV06 A	24APR07	29NOV06 A	16JUL08
S6JEA3600	DN300 Pipe & Manhole (D51 - D55)	40	370d	67	02JAN07 A	04APR07	02JAN07 A	26JUN08
S6JEA3700	DN300 Pipe & Manhole (D55 - D57)	31	370d	46	10OCT06 A	20MAR07	10OCT06 A	11JUN08
S6JEA3900	DN750 Pipe & Manhole (D12 - E3)	88	-234d	0	01MAR07	13JUN07	20MAY08	01SEP08
S6JEB1100	Construct Jack/Receive Pits (D6 - D7)	28	47d	0	03APR07	07MAY07	30MAY07	03JUL07
S6JEB1120	Jacking DN1050 (D6 - D7)	29	47d	0	08MAY07	09JUN07	04JUL07	06AUG07
Geotechnical works								
S6JP1000	Monitoring of Instruments	791	51d	34	04MAY06 A	19NOV08	04MAY06 A	20JAN09
Section 7 - Sewers in Portion K								
Portion K								
Ground Investigation								



Start date	19DEC05
Finish date	31OCT09
Data date	01MAR07
Run date	08MAR07
Page number	5A

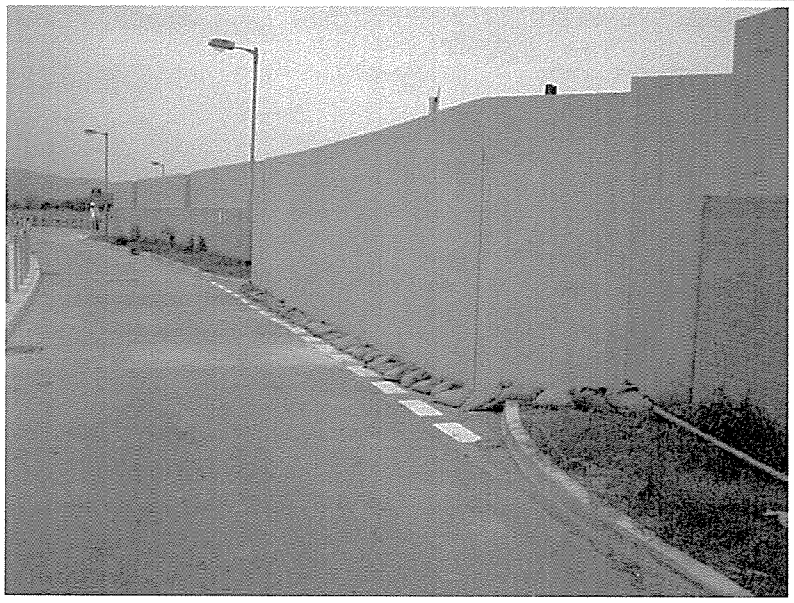
Leader Civil Engineering Corp. Ltd.
DSD Contract No. DC/2005/02
3-Month Rolling Programme - 3M01 at 29 February 2007

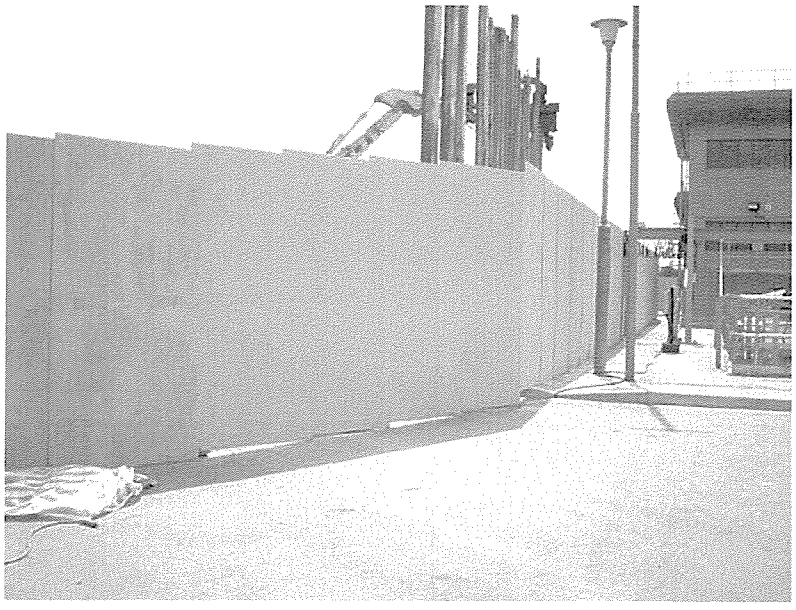
Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

LEADER

Annex D

Photographical Records – Noise Barrier On-Site





Annex E

Locations of Monitoring Stations

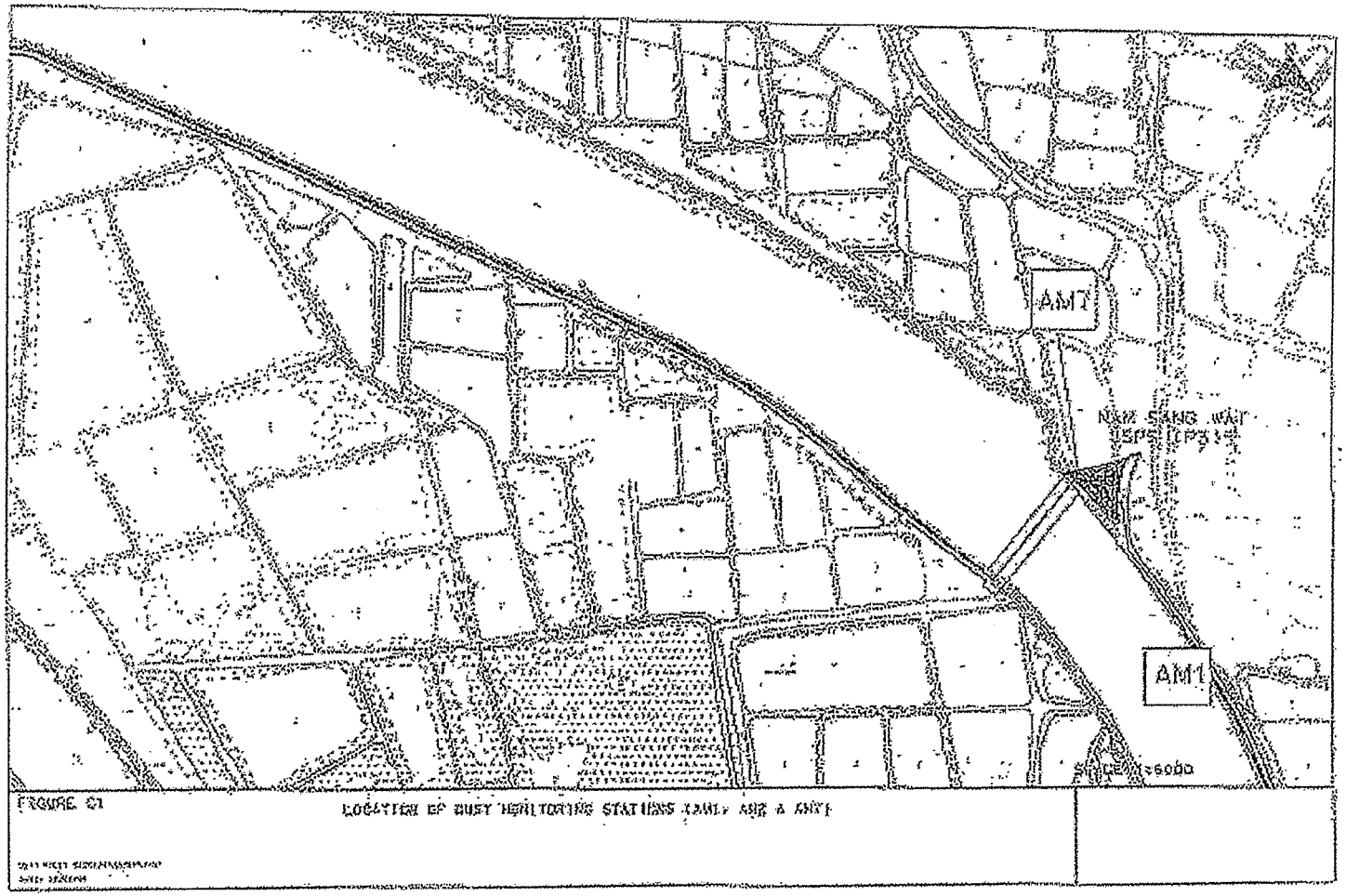


FIGURE 01 LOCATION OF DUST MONITORING STATIONS (AM7 AND AM1)

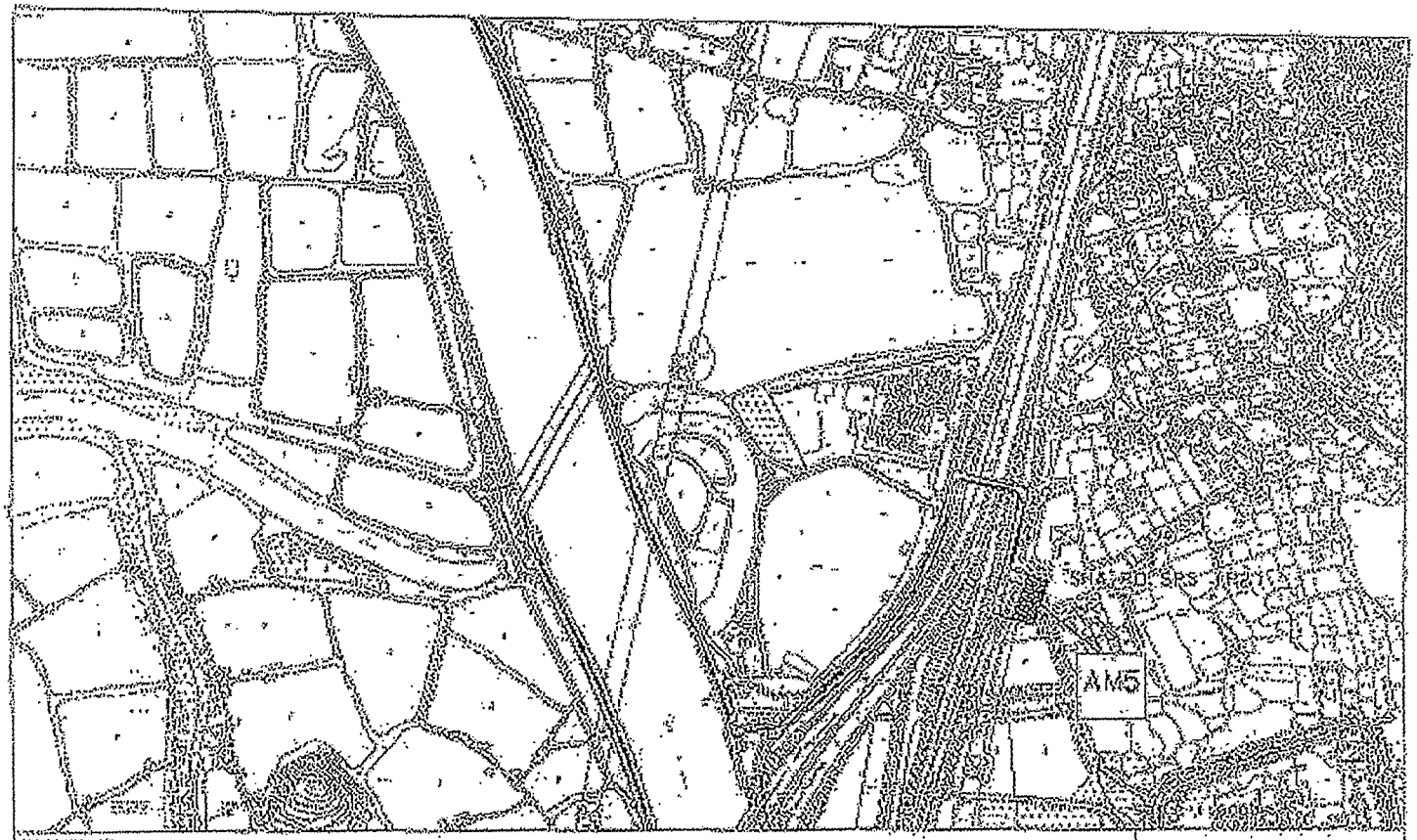


FIGURE 02 LOCATION OF DUST MONITORING STATIONS (SHEET 1)

FIGURE 6.6 LOCATION OF DUST MONITORING STATIONS (AQM1, AM6 & AM10)

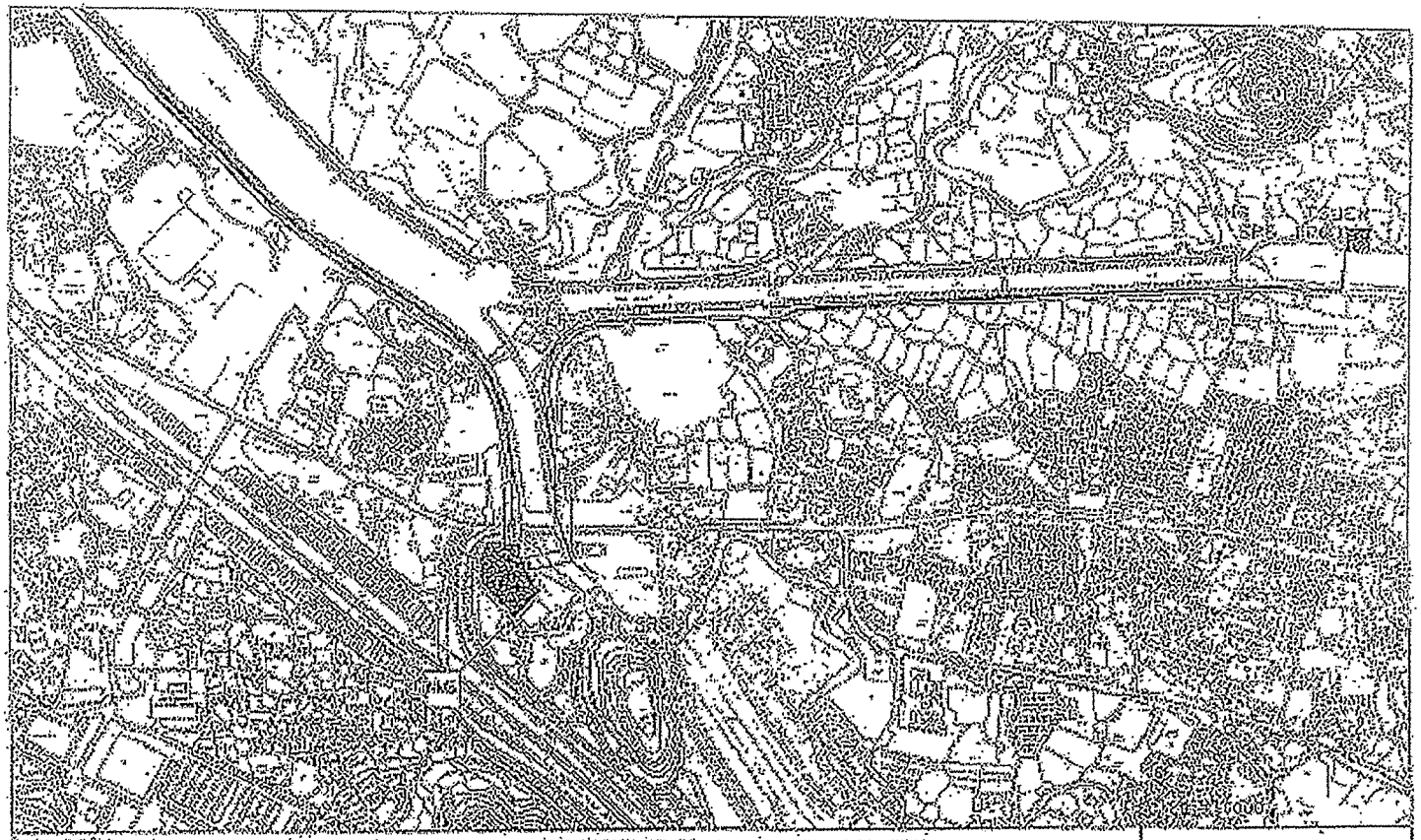
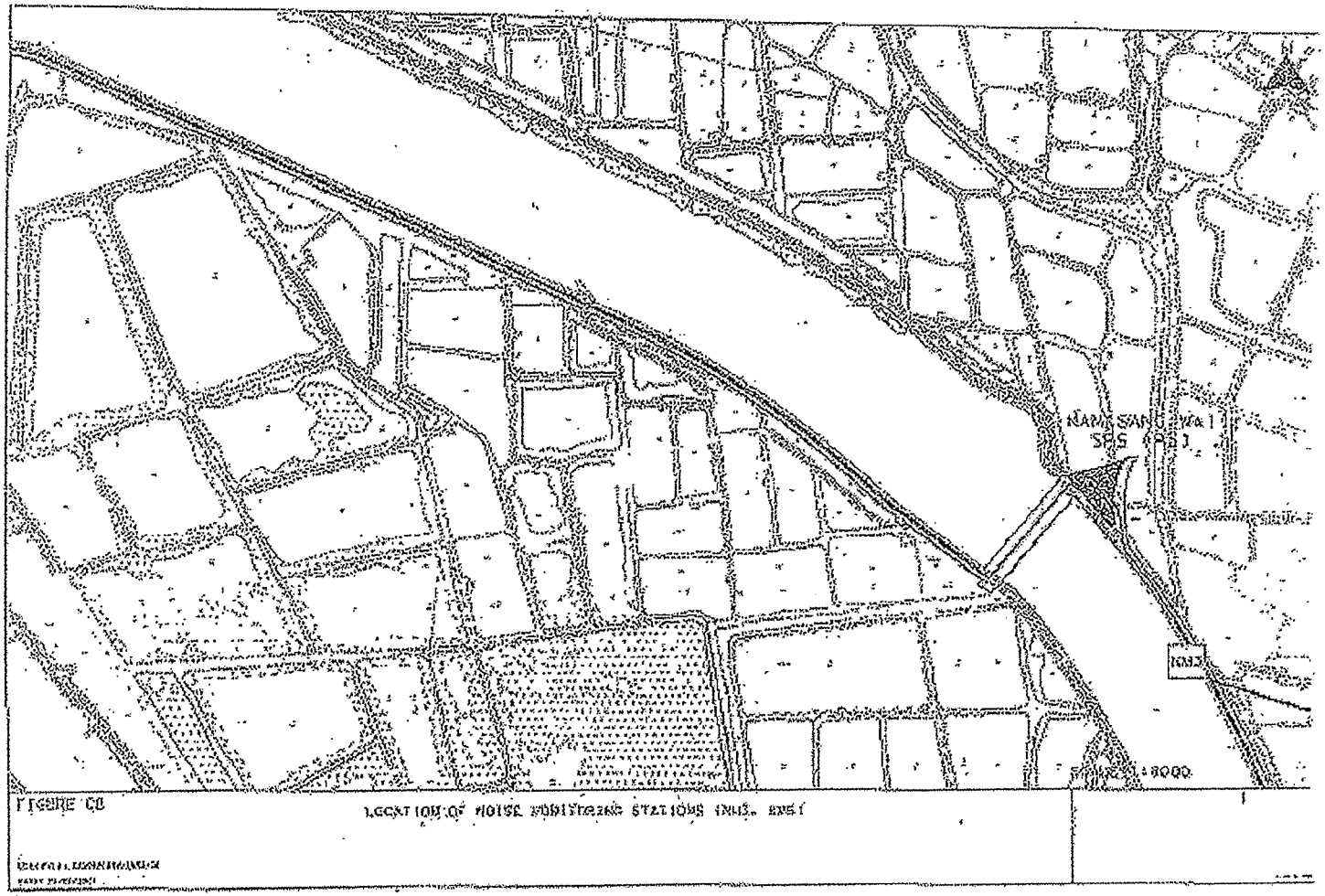


FIGURE 2.7 LOCATION OF NOISE MONITORING STATIONS (NM1, NM2, NM3)


NAM SAN
SRS
1000

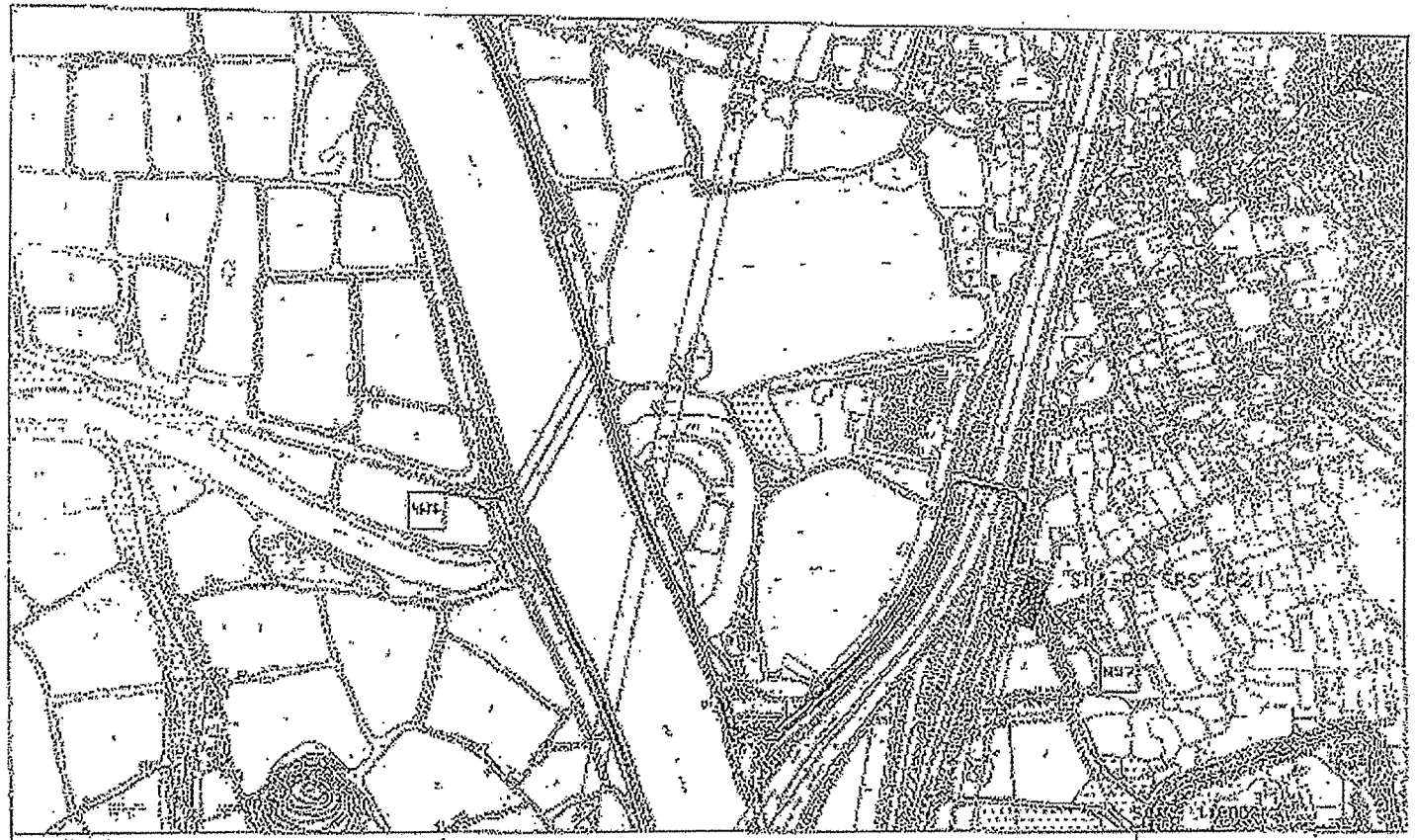


FIGURE 20.

LOCATION OF NOISE MONITORING STATIONS (1994 SURVEY)

Annex F

Event and Action Plan

Event and Action Plan for Construction Phase Air Quality

EVENT	ACTION			
	ET Leader	IEC	Engineer	Contractor
Action Level				
Exceedance for one sample	1. Identify source (s) of exceedance and inform IEC, Contractor and Engineer 2. Repeat dust measurements to confirm findings 3. Increase monitoring frequency to daily 4. Assess efficacy of remedial measures and keep the Contractor, IEC, and Engineer informed	1. Check monitoring data submitted by ET 2. Check monitoring data trends and Contractors working methods 3. Check and confirm Contractors proposed remedial actions and working methods are appropriate	1. Confirm receipt of notification of exceedance in writing 2. Remind the Contractor of his contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC 4. Inform complainant of actions taken, if necessary	1. Rectify any unacceptable practice 2. Liaise with Engineer and IEC to develop appropriate remedial measures to reduce dust impact 3. Amend working methods and remedial proposals if required by the Engineer or IEC 4. Implement the agreed remedial actions upon instruction from the Engineer and IEC
Exceedance for two or more consecutive samples	1. Identify source (s) of exceedance and inform IEC, Contractor and Engineer 2. Repeat measurements to confirm findings 3. Increase the monitoring frequency to daily to assess the efficacy of remedial measures and keep the Contractor informed 4. Discuss remedial actions with IEC and Contractor 5. If exceedance continues, arrange meeting with Engineer, IEC and Contractor to review working practices and identify further remedial actions 6. If exceedance stops, inform the Contractor and cease additional monitoring	1. Check monitoring data submitted by ET 2. Check monitoring data trends and Contractors working methods 3. Discuss with Contractor and Engineer on possible remedial measures 4. Check and confirm Contractors proposed remedial measures are appropriate 5. Determine the efficacy of remedial actions and keep the Engineer informed	1. Confirm receipt of notification of exceedance in writing 2. Remind the Contractor of his contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC 4. Ensure remedial measures are properly implemented 5. Inform complainant of actions taken, if necessary.	1. Rectify any unacceptable practice, if possible 2. Submit proposals for remedial actions to Engineer and IEC within three working days of notification 3. Discuss and amend remedial actions, if required, by the Engineer and IEC 4. Implement the remedial action (s) immediately upon instruction from the Engineer Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions
Limit Level				

Event and Action Plan for Construction Phase Air Quality

EVENT	ACTION			
	ET Leader	IEC	Engineer	Contractor
Exceedance for one sample	1. Identify source (s) of exceedance and inform IEC, Contractor and Engineer 2. Repeat dust measurements to confirm findings 3. Increase monitoring frequency to daily 4. Assess efficacy of remedial measures and keep the Contractor, IEC, Engineer and EPD informed	1. Check monitoring data submitted by ET 2. Check monitoring data trends and Contractors working methods 3. Check and confirm Contractors proposed remedial actions and working methods are appropriate 4. Check and confirm Contractors proposed remedial measures are appropriate 5. Determine the efficacy of remedial actions and keep the Engineer informed	1. Confirm receipt of notification of exceedance in writing 2. Remind the Contractor of his contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC, 4. Ensure remedial measures are properly implemented 5. Inform complainant of actions taken, if necessary.	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to Engineer and IEC within three working days of notification 3. Discuss and amend remedial actions, if required, by the Engineer and IEC 4. Implement the remedial action (s) immediately upon instruction from the Engineer 5. Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions
Exceedance for two or more consecutive samples	1. Identify source (s) of exceedance and inform IEC, Contractor and Engineer 2. Repeat measurements to confirm findings 3. Increase the monitoring frequency to daily to assess the efficacy of remedial measures and keep the Contractor informed 4. Discuss remedial actions with IEC and Contractor 5. If exceedance continues, arrange meeting with Engineer, IEC and Contractor to review working practices and identify further remedial actions 6. If exceedance stops, inform the Contractor and cease additional monitoring.	1. Discuss with Contractor and Engineer on possible remedial measures 2. Check and confirm Contractors proposed remedial measures are appropriate 3. Determine the efficacy of remedial actions and keep the Engineer informed	1. Confirm receipt of notification of exceedance in writing 2. Remind the Contractor of his contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC 4. Ensure remedial measures are properly implemented 5. If exceedance continues, instruct the Contractor to stop the relevant portion of work until the exceedance is abated 6. Inform complainant of actions taken, if necessary.	1. Rectify any unacceptable practice, if possible 2. Submit proposals for remedial actions to Engineer and IEC within three working days of notification 3. Discuss and amend remedial actions, if required, by the Engineer and IEC 4. Implement the remedial action (s) immediately upon instruction from the Engineer 5. Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions

Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET Leader	IEC	Engineer	Contractor
Limit Level				
Exceedance for one sample	1. Identify source (s) of exceedance and inform IEC, Contractor and Engineer 2. Repeat dust measurements to confirm findings 3. If repeat measurements confirm exceedance ,increase monitoring frequency to daily 4. Assess efficacy of remedial measures and keep the Contractor, IEC, and Engineer informed 5. If exceedance stops, inform Contractor and cease additional noise monitoring	1. Check monitoring data submitted by ET 2. Check monitoring data trends and Contractors working methods 3. Check and confirm Contractors proposed remedial actions and working methods are appropriate	1. Confirm receipt of notification of exceedance in writing 2. Remind the Contractor of his contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC 4. Inform complainant of actions taken, if necessary	1. Rectify any unacceptable practice 2. Liaise with Engineer and IEC to develop appropriate remedial measures to reduce noise impact 3. Amend working methods and remedial proposals if required by the Engineer or IEC 4. Implement the agreed remedial actions upon instruction from the Engineer and IEC
Exceedance for two or more consecutive samples	1. Identify source (s) of exceedance and inform IEC, Contractor and Engineer 2. Repeat measurements to confirm findings 3. Increase the monitoring frequency to daily 4. Discuss remedial actions with IEC, Engineer and the EPD 5. Assess the efficacy of remedial measures and keep the Contractor informed 6. If exceedance continues, arrange meeting with Engineer, IEC and Contractor to review working practices and identify further remedial actions 7. If exceedance stops, inform the Contractor and cease additional monitoring.	1. Check monitoring data submitted by ET 2. Check monitoring data trends and Contractors working methods 3. Discuss with Contractor and Engineer on possible remedial measures 4. Check and confirm Contractors proposed remedial measures are appropriate 5. Determine the efficacy of remedial actions and keep the Engineer informed	1. Confirm receipt of notification of exceedance in writing 2. Remind the Contractor of his contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC 4. Ensure remedial measures are properly implemented 5. If exceedance continues, instruct the Contractor to stop the relevant portion of work until the exceedance is abated 6. Inform complainant of actions taken, if necessary.	1. Rectify any unacceptable practice, if possible 2. Submit proposals for remedial actions to Engineer and IEC within three working days of notification 3. Discuss and amend remedial actions, if required, by the Engineer and IEC 4. Implement the remedial action (s) immediately upon instruction from the Engineer 5. Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions 6. Stop the relevant portion of work as determined by the Engineer until the exceedance is abated

Annex G

Mitigation Implementation Schedule

EIA* Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
		CONSTRUCTION PHASE								
		AIR QUALITY - *Construction Phase* The following measures are enforceable under the *Air Pollution Control (Construction Dust) Regulations*								
3.5	A1	**Site boundary and entrance** • where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the boundaries of the seven pumping stations sites and the works area where the Engineer's site office and the Contractor's site office erected;	To prevent access to the site and control potential dust impacts from construction works.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Part III, Clause 13 (c), Air Pollution Control (Construction Dust) Regulations*
3.5	A2	**Access Road** • the portion of any road leading only to a construction site that is within 30 m of a discernible or designated vehicle entrance or exit should be kept clear of dusty materials;	To control potential dust impacts from vehicle movements.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Part III, Clause 14, (b), Air Pollution Control (Construction Dust) Regulations*
3.5	A3	**Stockpiling of Dusty Materials** • any stockpile of dusty materials should be either covered entirely by impervious sheeting and placed in an area sheltered on the top and the 3 sides or sprayed with water so as to maintain the entire surface wet;	To control potential dust impacts during excavation and stockpiling activities.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Part IV, Clause 18, (a, b & c), Air Pollution Control (Construction Dust) Regulations*
3.5	A4	**Loading, unloading or transfer of dusty materials** • all dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading and unloading so as to maintain the dusty materials wet;	To control potential dust impacts during material handling and truck movements.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Part IV, Clause 19, Air Pollution Control (Construction Dust) Regulations*
3.5	A5	**Use of vehicles** • every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving a construction site;	To control potential dust impacts from vehicle movements.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Part IV, Clause 21, (1), Air Pollution Control (Construction*

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des.	C	O*	Dec.	
3.5	A6	◦ where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle;	To control potential dust impacts during material transportation.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Dust) Regulations Part IV, Clause 21, (2), Air Pollution Control (Construction Dust) Regulations*
3.5	A7	**Power-driven drilling, and cutting** ◦ water should be continuously sprayed on the surface where any mechanical breaking operation that causes dust emission is carried out, unless the process is accompanied by the operation of an effective dusty extraction and filtering device;	To control potential dust impacts during mechanical breaking.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Part IV, Clause 22, Air Pollution Control (Construction Dust) Regulations*
3.5	A8	**Excavation and earth moving** ◦ the working area of excavation should be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet;	To control potential dust impacts arising from excavation works.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Part IV, Clause 24, Air Pollution Control (Construction Dust) Regulations*
3.5	A9	**Construction of the superstructure of a building** ◦ where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the round floor level of the SPS, or if a canopy is provided a the first floor level, from the first floor level, up to the highest level of the scaffolding; and	To control potential dust impacts from SPS building construction works.	Full duration of SPS construction contract.	The Contractor		✓			*Part I, Clause 6, (a), Air Pollution Control (Construction Dust) Regulations*
3.5	A10	◦ any skip hoist for material transport should be totally enclosed by the impervious sheeting.	To control potential dust impacts during material transportation.	Full duration of SPS construction contract.	The Contractor		✓			*Part I, Clause 6, (b), Air Pollution Control (Construction Dust) Regulations*

EIA Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	Co	O	Dec	
		NOISE - *Construction Phase*								
4.7.1	B1	***General Site Clearance – Demolition Works*** ◦ Use of quiet PME which meet the SWLs taken from British Standard, *Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997 (Examples of these PME are shown in Table F2)*,	To control potential noise impacts during site clearance and demolition works	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Annex 5 of EIAO-TM*
4.7.1	B2	***Construction of Sewage Pumping Stations P1, P2 & P3*** ◦ Use of quiet PME which meet the SWLs taken from British Standard, *Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997*,	To minimise potential noise impacts arising during the construction of *P1, P2 & P3*	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Annex 5 of EIAO-TM*
		◦ Adoption of temporary noise barrier, in the form of a site hoarding (with a superficial density of at least 20kg/m2, with no substantial gaps), along the site boundary of the pumping station sites.	To minimise potential noise impacts arising during the construction of *P1, P2 & P3*	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Annex 5 of EIAO-TM*
4.7.1	B3	***Sewers and Rising Mains using Open Trench Method*** ◦ Use of quiet PME which meet the SWLs taken from British Standard, *Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997*,	To control potential noise impacts during excavation works.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Annex 5 of EIAO-TM*
4.7.1	B4	◦ Use of handheld breakers for all initial road opening activities, when breaking tarmac/concrete road surface to a depth of 300mm or when granular material is reached.	To control potential noise impacts during road opening activities.	Where there are NSRs located within 50m of the line of sight. Throughout the full duration of the road opening activities.	The Contractor		✓			
4.7.1	B5	◦ Use of movable noise barriers or 3 sided enclosures for all initial road opening activities	To control potential noise impacts during road opening	Where there are NSRs located within 50m of the	The Contractor		✓			

EIA Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the Measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
		enclosures for all initial road opening activities (breaking tarmac/concrete road surface to a depth of 300mm or when granular material is reached), where there are NSRs located within 50m of the line of sight from the works area.	activities.	line of sight: Throughout the full duration of the road opening activities.						
		Sewers and Rising Mains using Pipe Jacking Method								
4.7.1	B6	◦ Use of quiet PME which meet the SWLs taken from British Standard, *Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997,*	To control potential noise impacts from PME during construction works	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Annex 5 of EIAO-TM*
		Road Pavement and Finishes								
4.7.1	B7	◦ Use of quiet PME which meet the SWLs taken from British Standard, *Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997,*	To control potential noise impacts from PME during pavement and finish works	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Annex 5 of EIAO-TM*
		WATER QUALITY - *Construction Phase* No water quality monitoring is required under this study.								
		WASTE - *Construction Phase*								
6.6.2	D1	The Contractor shall obtain the necessary waste disposal permits from the appropriate authorities for the disposal of chemical and C&D waste, ◦ Chemical Waste Producer and Chemical Waste Disposal Licence *(Waste Disposal (Chemical Waste) (General) Regulations); and* ◦ Dumping Licence (*Land (Miscellaneous Provisions) Ordinance (Cap 28))*	To monitor the collection, handling and disposal of chemical waste and C&D waste, and in compliance with relevant Hong Kong Standards and Regulations.	Site wide and throughout the full duration of the construction contract.	The Contractor	✓	✓			*Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste)(General) Regulation (Cap 354), the Land (Miscellaneous Provisions) Ordinance (Cap 28))*

EIA Ref.	EMCA Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des.	C.	O.	Dec.	
6.6.2	D2	*Chemical Waste* Chemical waste that is produced, as defined by Schedule 1 of the *Waste Disposal (Chemical Waste) (General) Regulation*, should be handled in accordance with the regulations and Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows. All chemical waste producers should be registered with the EPD. Storage, Packaging and Labelling of Chemical Waste	To control the handling, storage and disposal of chemical waste, in order to minimise potential spillages/leakages and human health and environmental impacts.	To be implemented at all worksites throughout the full duration of the construction phase.	The Contractor		✓			*Part II, (6) Waste Disposal (Chemical Waste) (General) Regulation*
6.6.2	D3	Containers used for storage of chemical wastes should: • be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; • have a capacity of less than 450 L unless the specifications have been approved by the EPD; and • display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.	To ensure the proper storage, packaging and labelling of chemical waste in accordance with the Regulations.	To be implemented at all worksites throughout the full duration of the construction phase.	The Contractor		✓			*Part IV, (9, 10, 11 & 12) Waste Disposal (Chemical Waste) (General) Regulation*
6.6.2	D4	Storage of chemical waste The storage area for chemical wastes should: • be clearly labelled and used solely for the storage of chemical waste; • be enclosed on at least 3 sides; • have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; • have adequate ventilation; • be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste, if necessary); and • be arranged so that incompatible materials are	To ensure the proper storage of chemical waste in accordance with the Regulations.	To be implemented at all worksites throughout the full duration of the construction phase.	The Contractor		✓			*Part IV, (13, 14, 15, 16, 17, & 18) Waste Disposal (Chemical Waste) (General) Regulation*

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des.	C	O	Dec.	
		adequately separate								
		Disposal of chemical waste ◦ The Contractor should ensure that the disposal of chemical waste is via a licensed Waste Collector and in accordance with the *Waste Disposal (Chemical Waste) (General) Regulations.*	To control the disposal of chemical waste in accordance with the Regulations.	To be implemented at all worksites throughout the full duration of the construction phase.	The Contractor		✓			*Part IV, (20 -25) Waste Disposal (Chemical Waste) (General) Regulation*
6.6.2	D5	*Management of Waste Disposal* A trip-ticket system should be established which monitors the disposal of C&DM and solid wastes at public filling facilities and landfills and to control fly-tipping, in accordance with *Land (Miscellaneous Provisions) Ordinance (Cap28)* and the *Works Bureau Technical Circular No. 5/99.*	To monitor the disposal of C&DM and solid wastes at public filling facilities and landfills and to control fly-tipping.	To be implemented at all worksites throughout the full duration of the construction phase.	The Engineer/ Contractor		✓			*Land (Miscellaneous Provisions) Ordinance (Cap 295) and Works Bureau Technical Circular No. 5/99.*
		LAND CONTAMINATION- *Construction Phase*								
7.5.6	E1	A revised CAP should be submitted to the EPD for approval before the commencement of the construction works. Following receipt of the EPD's approval, the CAP shall be implemented and the findings of the investigations will be reported in the Contaminated Assessment Report (CAR), before ground disturbance is allowed at the concerned sites. If land contamination is confirmed, a Remediation Action Plan (RAP) shall be prepared, and both the CAR and the RAP shall be submitted as a combined report to the EPD for approval before disturbing the ground of the concerned sites. If applicable and required in consultation with the	To determine the presence of soil and groundwater contamination and remedy any potential concerns to acceptable levels.	To be implemented before the commencement of the construction works.	To be implemented by DSD or their sub-consultants at the Detailed Design Stage, depending upon when site access can be gained.	✓				*EIAO TM Annex 19/3.1.1 & 3.1.2*

EIA Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the Measure	Implementation Agent	Implementation Stage**				Relevant Legislation & Guidelines
						Des	C	O	Dec	
		EPD, the contaminated site(s) shall be remediated in accordance with the approved CAR/RAP.								
		ECOLOGY - *Construction Phase*								
		Mitigation Measures Adopted - Avoidance								
8.7.1	F1	Construction activities shall be prohibited during the winter season (November to March) along the section of the proposed sewerage alignment, which fall within the Deep Bay Wetland Conservation Area and the Deep Bay Wetland Buffer Area (WCA and WBA) and close to the locations of ecologically sensitive species (including Intermediate Egret, Black-faced Spoonbill, Buzzard, Imperial Eagle and Avocet). (See Figure 8.7a attached). Regular site inspections (at least twice a month) should be conducted by the Environmental Team during the winter season (November to March) to ensure proper implementation of this restriction	To schedule construction works in order to minimise potential impacts to winter visiting birds. To be confirmed by regular site inspections.	At identified location (*Figure 8.7a*) for the full duration of the construction contract.	The Contractor		✓			
		Mitigation Measures Adopted - Minimisation								
8.7.2	F2	Pipe jacking method should be used instead of dredging where sewers and rising mains cross over existing MDC within the WCA and WBA.	To minimise potential construction noise impacts to ecological sensitive receivers within the WCA/WBA.	For the full duration of the construction contract.	The Contractor		✓			
8.7.2	F4	Regular inspections (at least twice a month) should be conducted by the ET during the winter season (November to March) for the remaining sections of the proposed sewerage alignment (including parts of S4, S5 and S6) within the WCA and WBA, where construction activities cannot be rescheduled. The site inspections shall check and report the number of workfronts and implementation of	To schedule noisy construction activities to minimise potential impacts to winter visiting birds.	Work fronts other than identified sections within WBA & WCA (see *Figure 8.7a* attached) throughout the full duration of the construction contract.	The Contractor		✓			

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location of the Measures	Implementation Agent	Implementation Stage*				Relevant Legislation & Guidelines
						Des.	C	O	Dec.	
		mitigation measures (i.e. erection of movable noise barriers with a suitable footing along the sites) in the monthly EM&A reports.								
8.7.3	F5	*Mitigation Measures Adopted* Quietened construction plant and equipment (as shown in *Table F2*) should be used for the construction of pumping stations (P3 and P2) and sewerage alignment (S4, S5 and S6) located within the WCA and WBA.	Quiet construction plant shall minimise potential noise impacts to the wildlife, particularly rare birds including Black-faced Spoonbill, Buzzard, Hobby, Imperial Eagle, Intermediate Egret, Avocet and Black-eared Kite	At described locations and throughout the full duration of the construction contract.	The Contractor		✓			
8.7.4	F6	Erection of fences along the boundary of pumping station construction sites (P1 to P3) before the commencement of construction works to prevent tipping, vehicle movements, and encroachment of personnel into adjacent areas, and P2 to avoid disturbance to the remaining pond areas (0.7 ha);	To erect fences to prevent encroachment of construction activities onto adjacent areas.	At P1 to P3 for full duration of the construction contract.	The Contractor		✓			
8.7.4	F7	No filling and dumping to the remaining abandoned fishpond at P2,	To avoid disturbance to abandoned fishponds from construction activities and illegal dumping.	At P2 for full duration of the construction contract	The Contractor		✓			
8.7.4	F8	Installation and operation of silt removal facilities at construction sites of P1 to P3. The silt removal facilities should be designed in accordance with Appendix A1 of ProPECC Note PN1/94 Construction Site Drainage. The minimal total combined volume of the silt removal facilities at Nam Sang Wai SPS (P3) should be $15m^3$.	To install silt removal facilities in potentially impact streams and ponds to prevent sedimentation.	At P1 to P3 for full duration of the construction contract.	The Contractor		✓			
8.7.4	F9	No open fires within the site boundary during	To prohibit open fires, thereby	Site wide and throughout	The Contractor		✓			*Air Pollution Control*

EIA Ref	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
8.7.4	F7	construction and provide temporary fire fighting equipment in the work areas. No filling and dumping to the remaining abandoned fishpond at P2.	minimising potential damage to trees and shrubs. To avoid disturbance to abandoned fishponds from construction activities and illegal dumping.	the full duration of the construction contract. At P2 for full duration of the construction contract	The Contractor		✓			*(Open Burning) Regulation*
8.7.4	F8	Installation and operation of silt removal facilities at construction sites of P1 to P3. The silt removal facilities should be designed in accordance with Appendix A1 of ProPECC Note PN1/94 Construction Site Drainage.	To install silt removal facilities in potentially impact streams and ponds to prevent sedimentation.	At P1 to P3 for full duration of the construction contract.	The Contractor		✓			
8.7.4	F9	No open fires within the site boundary during construction and provide temporary fire fighting equipment in the work areas.	To prohibit open fires, thereby minimising potential damage to trees and shrubs.	Site wide and throughout the full duration of the construction contract.	The Contractor		✓			*Air Pollution Control (Open Burning) Regulation*
		FISHERIES - *Construction Phase* No specific mitigation measures are required for inclusion in the EP.								
		CULTURAL HERITAGE – Not Applicable for Package 1A-1T (DC/2005/02)								
		LANDSCAPE AND VISUAL - *Construction Phase*								
	H1	The site inspections shall check and report the implementation of mitigation measures (i.e. top-soil are reused and new compensatory planting works are carried out immediately after the construction of the civil structure) in the monthly EM&A reports. The first monthly EM&A Report should also report the appearance of the temporary hoarding barriers.	To minimise potential landscape and visual impacts.	To be implemented during the construction phases of the project.	The Contractor		✓			
	H2	Prior to application for an Environmental Permit, a set of landscape plans and building elevations of the proposed pumping stations should be	To minimise potential landscape and visual impacts.	To be implemented during the design and construction phases of the	DSD and The Contractor	✓	✓			

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des.	C.	O.	Dec.	
		submitted for approval by the EPD. The landscape plans and pumping station elevations should demonstrate that the following elements are considered: • existing landscape elements (such as mature trees), transplantation of valuable trees, new compensatory planting		project.						
		• incorporate information on materials, details and textures so as to be as visually recessive as possible and in a style that fits with the surrounding village buildings. • colour should be of low chromatic intensity to reduce the potential contrast between the structures and their background. The external finishing of the Pumping Stations shall be designed in conjunction with the landscape scheme. • a minimum screen planting of 3m width and use of trees with a dense canopy of up to 5 m in height subject to constraints such as engineering and land availability. • felling of mature trees are kept to a minimum.								
3.7	11	EM&A REQUIEMENTS - *Construction Phase* *Air Quality* Subject to the Environmental Protection Departments (EPDs) agreement, construction phase dust monitoring shall be undertaken at the following locations in accordance with the recommendations of the EIA. • Worksite boundary facing Scattered house in Nam Sang Wai (AM1); • Worksite boundary facing Fung Kat Heung (AM5); • Worksite boundary facing Scattered House near Route 3 (AM6);	Installations of the dust monitoring stations to ensure the action and limit levels are not exceeded.	At specified dust monitoring locations for the duration of the construction works.	To be undertaken by the Environmental Team (ET) and reviewed and audited by the Engineer /DSD		✓			*Air Pollution Control (Construction Dust) Regulations*

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
						Des	C	O	Dec	
4.9.1	I2	• at any additional locations, where considered necessary, in agreement with EPD. *Construction Noise* Subject to the Environmental Protection Departments (EPDs) agreement, construction phase noise monitoring shall be undertaken at the following locations in accordance with the recommendations of the EIA. • (NM3) Scattered House in Nam San Wai (D12); • (NM4) Scattered House in Nam San Wai (D11); • (NM6) Scattered House near Route 3 (D17); • (NM7) Fung Kat Heung (D19); • and at any additional locations, where considered necessary, in agreement with EPD	Installations of the noise monitoring stations to ensure the action and limit levels are not exceeded.	At specified noise monitoring locations throughout the duration of the construction works.	To be undertaken by the Environmental Team (ET) and reviewed and audited by the Engineer		✓			*Noise Control Ordinance*

Des = Design, C = Construction, O = Operation, Dec = Decommissioning

Annex H

Equipment Calibration Certificates

Equipment Calibration List for Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long Project

Item	Aspect	Description of Equipment	Serial No.	Date of Calibration	Date of Next Calibration
1	Air	Greasby Anderson GMWS2310 High Volume Sampler	0329 (AM1)	21 Feb 07	21 May 07
2		Greasby Anderson GMWS2310 High Volume Sampler	0355 (AM5)	15 Jan 07	15 Apr 07
3		Greasby Anderson GMWS2310 High Volume Sampler	10394 (AM6)	03 Jan 07	03 Apr 07
4		Greasby Anderson GMWS2310 High Volume Sampler	1283 (AM7)	21 Feb 07	21 May 07
5	Noise	Bruel & Kjaer 4231 Acoustical Calibrator	2292167	13 Apr 06	13 Apr 07
6		Bruel & Kjaer 2238 Integrating Sound Level Meter	2285721	24 Apr 06	24 Apr 07

Note: Calibration certificates will only be provided if monitoring equipment is re-calibrated or new.
** Calibration done in this reporting month, see calibration certificate attached.*

Annex I

Meteorological Data in the Reporting Month

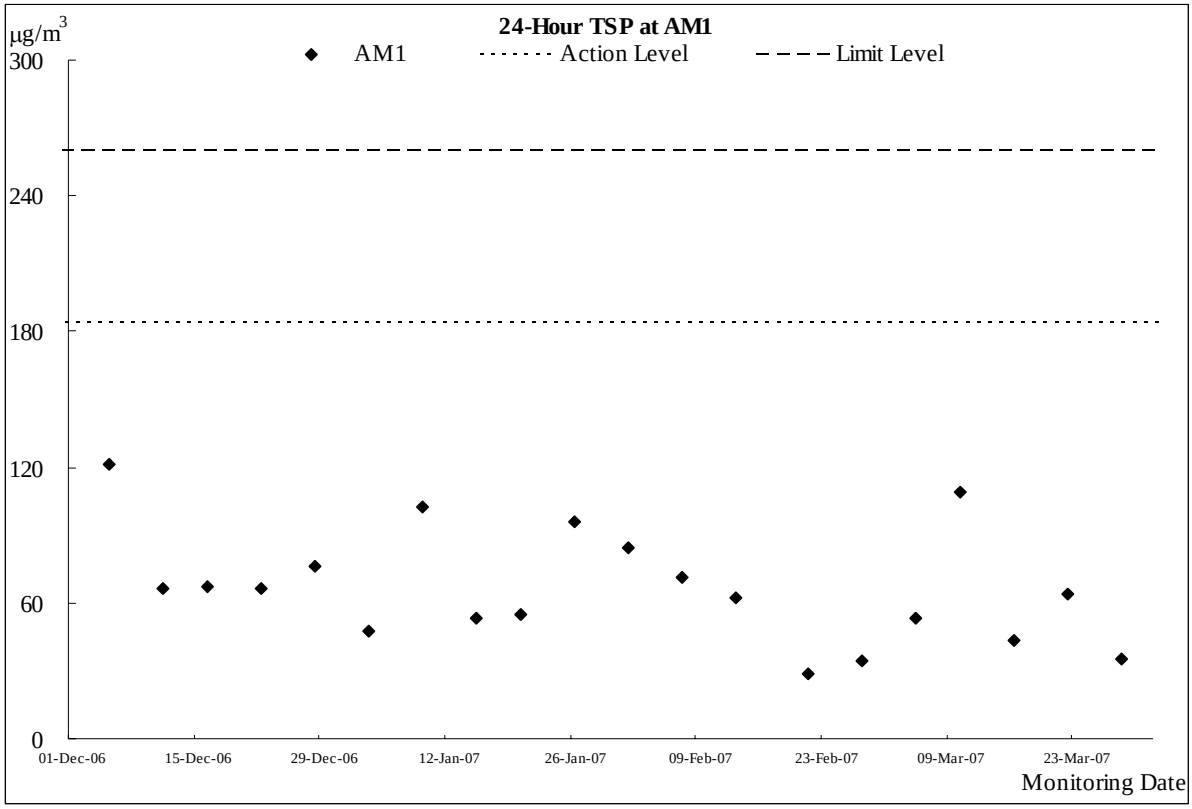
Meteorological Data Extracted From the HK Observatory at Lau Fau Shan Weather Station

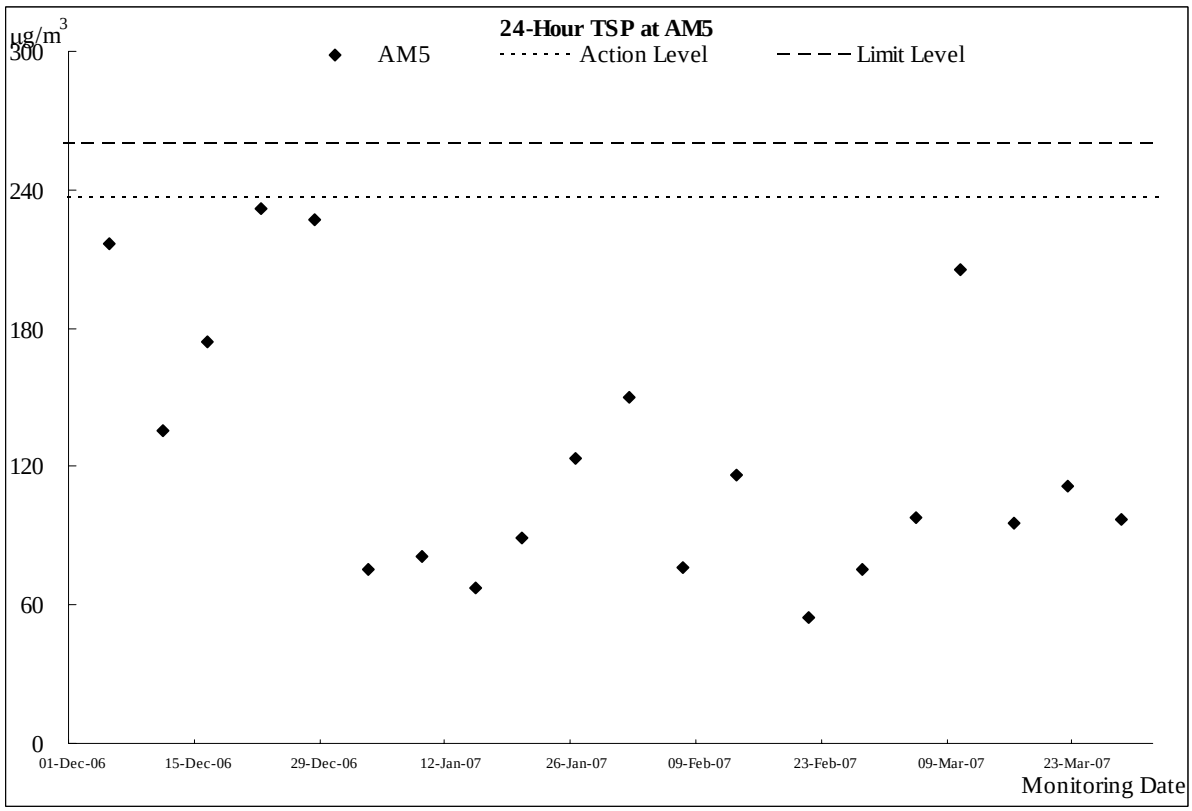
Date		Weather		Lau Fau Shan Station			
			Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
1-Mar-07	Thu	cloudy/ rain/ mist	Trace	20.5	15	80	E
2-Mar-07	Fri	sunny/ cloudy/ moderate	-	22.4	12	85	E/SE
3-Mar-07	Sat	fine/ misty/ moderate	-	23.5	9	95	E
4-Mar-07	Sun	fine/ moderate	0.1	23.4	18	90	W
5-Mar-07	Mon	sunny/ dry/ cool/ cloudy/ moderate	3.4	21	15	60	NE/E
6-Mar-07	Tue	cloudy/ cool/ rain/ moderate	8.1	14.5	19	65	NE/E
7-Mar-07	Wed	cloudy/ rain/ cool/ moderate	1	11.1	13	80	NE/E
8-Mar-07	Thu	cloudy/ rain/ mist/ moderate	0.1	12.4	15	85	NE/E
9-Mar-07	Fri	cloudy/ rain/ mist/ moderate	Trace	14.3	12	90	NE/E
10-Mar-07	Sat	cloudy/ fog/ rain/ moderate	Trace	19	12	95	SW/W
11-Mar-07	Sun	cloudy/ rain/ fog	0.1	17.1	12	90	NE/E
12-Mar-07	Mon	cloudy/ misty/ rain/ moderate	Trace	19	15	85	E
13-Mar-07	Tue	cloudy/ mist/ sunny/ moderate	Trace	21.5	12	90	E/SE
14-Mar-07	Wed	misty/ sunny/ moderate	Trace	22.8	12	95	E/SE
15-Mar-07	Thu	misty/ sunny/ moderate	-	23.9	18	95	SE/S
16-Mar-07	Fri	rain/ sunny/ fog/ moderate	0.2	23.9	23	75	SE/S
17-Mar-07	Sat	cloudy/ mist/ rain/ cool	0.6	19.9	20	90	E
18-Mar-07	Sun	cloudy/ rain	Trace	18.9	15	75	NE/E
19-Mar-07	Mon	cloudy/ rain/ bright/ moderate	7.1	17	20	65	N/NE
20-Mar-07	Tue	fine/ dry/ moderate	-	16.2	20	65	NE/E
21-Mar-07	Wed	sunny/ moderate/ cloudy	-	19.2	15	55	E
22-Mar-07	Thu	cloudy/ rain/ moderate	Trace	20.5	14	80	E/SE
23-Mar-07	Fri	cloudy/ rain/ moderate	Trace	23.4	18	75	E/SE
24-Mar-07	Sat	cloudy/ rain/ moderate	1	22.2	12	90	NE/E
25-Mar-07	Sun	cloudy/ mist/ rain	Trace	23.7	9	85	SE
26-Mar-07	Mon	cloudy/ rain/ fog/ moderate	2	24	12	95	SE/S
27-Mar-07	Tue	sunny/ fog/ rain/ moderate	3.9	25	18	90	SW/W
28-Mar-07	Wed	sunny/moderate	Trace	24.2	12	75	SE/E
29-Mar-07	Thu	sunny/ moderate	-	24.2	12	85	W
30-Mar-07	Fri	cloudy/ sunny/ moderate	-	25.5	15	90	SE/S
31-Mar-07	Sat	sunny/ cloudy/ moderate	Trace	26.2	10	90	SE/S

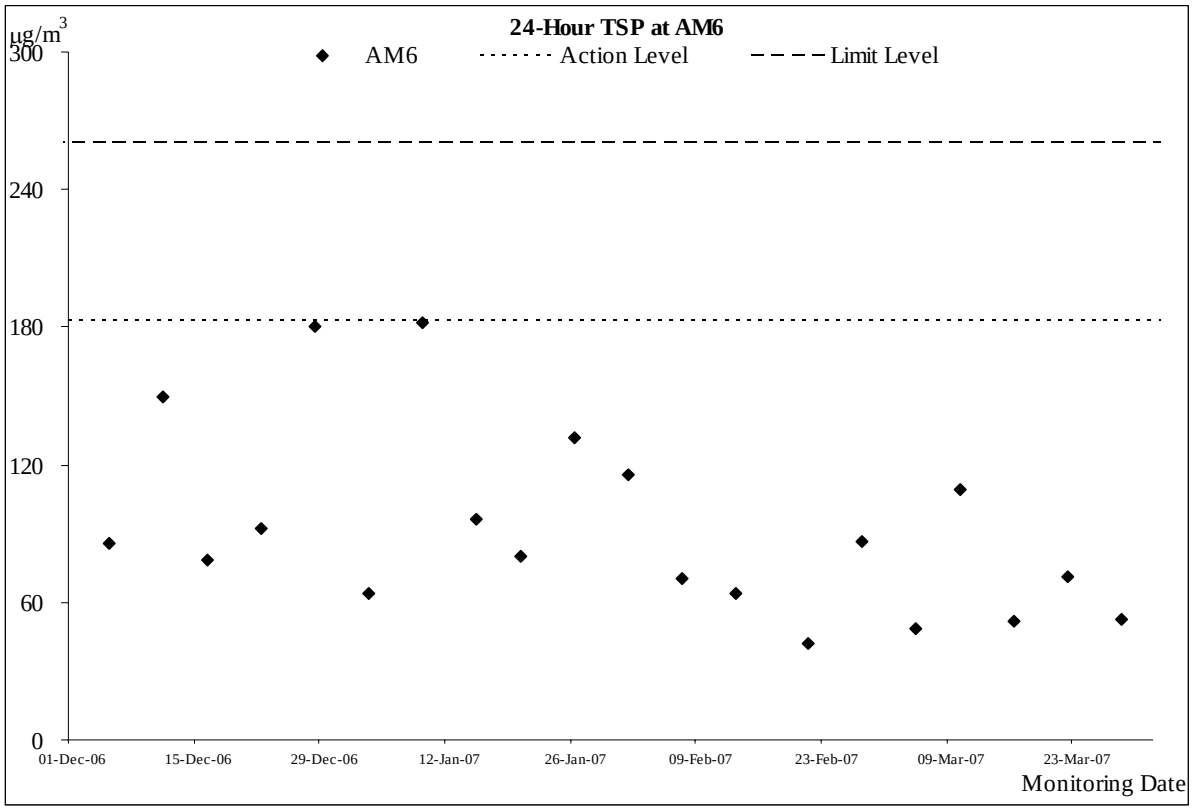
Annex J

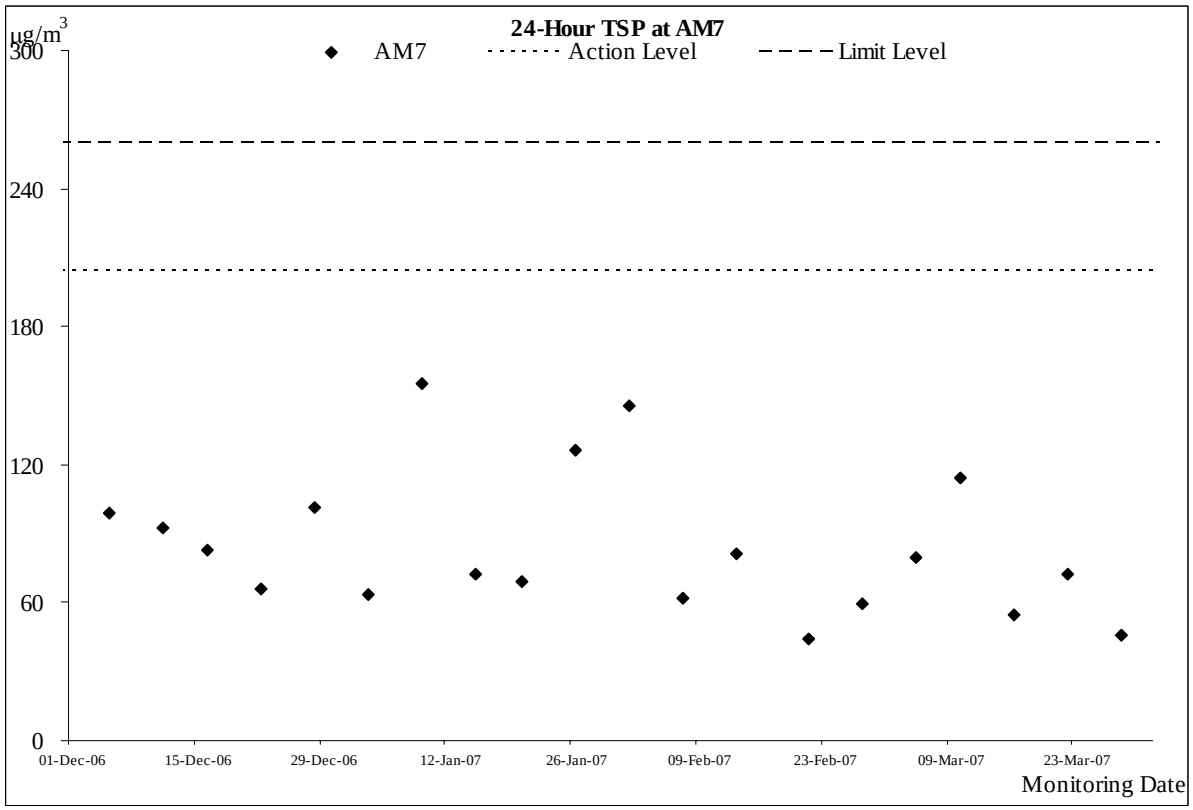
Graphical Plots of Air Quality
&
Noise Monitoring Results

Air Quality Monitoring Results

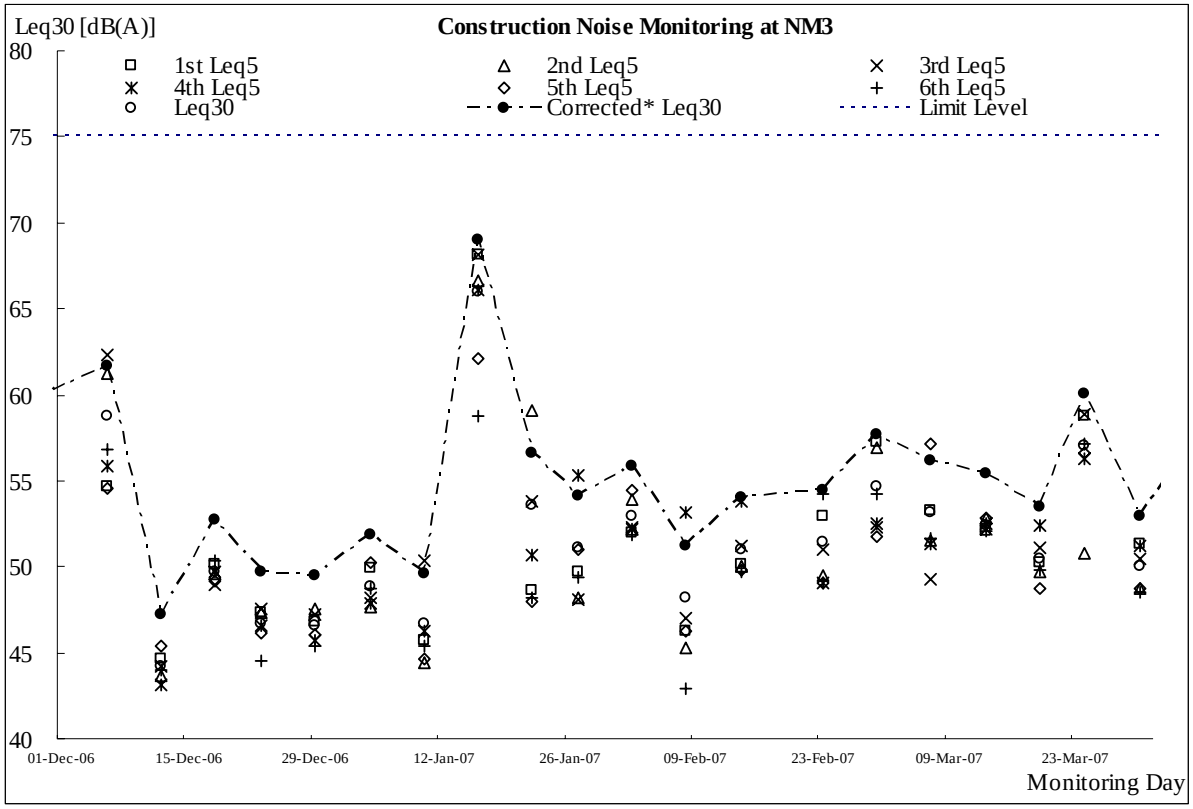


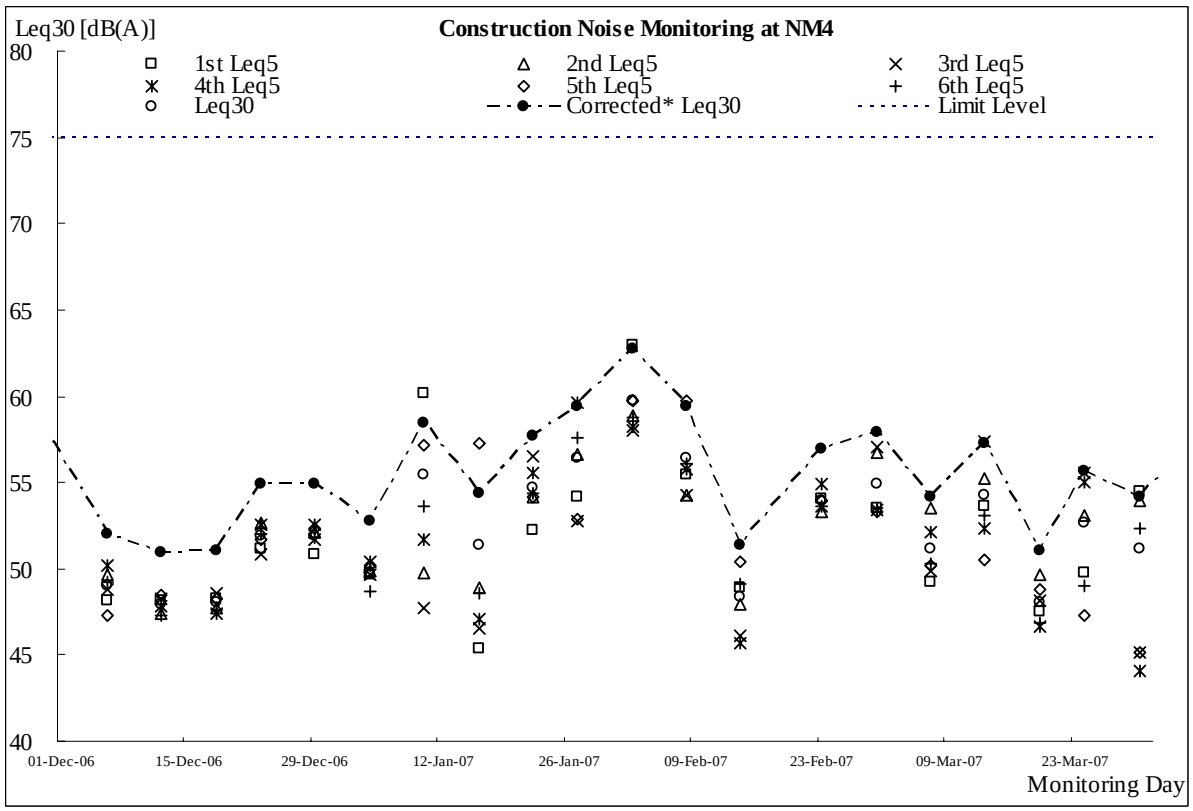


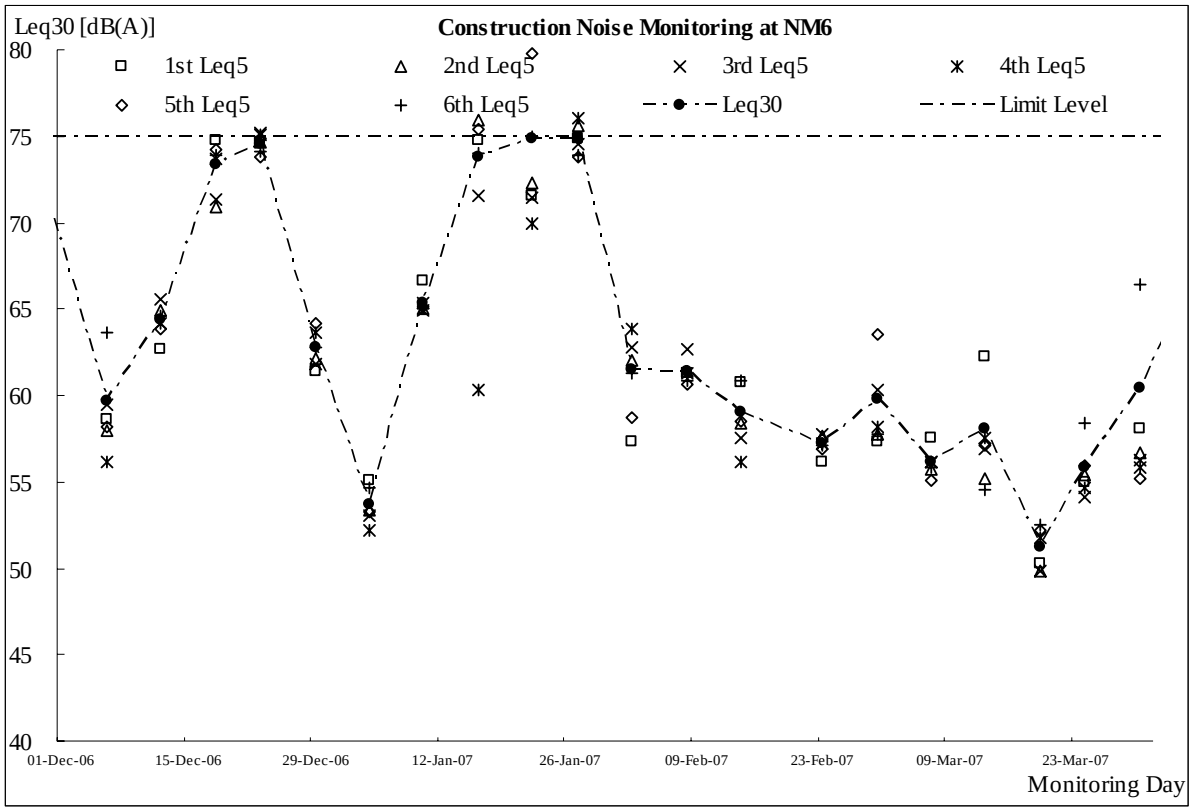

24-Hour TSP at AM6
µg/m3
AM6
Action Level
Limit Level
300
240
180
120
60
0
01-Dec-06
15-Dec-06
29-Dec-06
12-Jan-07
26-Jan-07
09-Feb-07
23-Feb-07
09-Mar-07
23-Mar-07
Monitoring Date

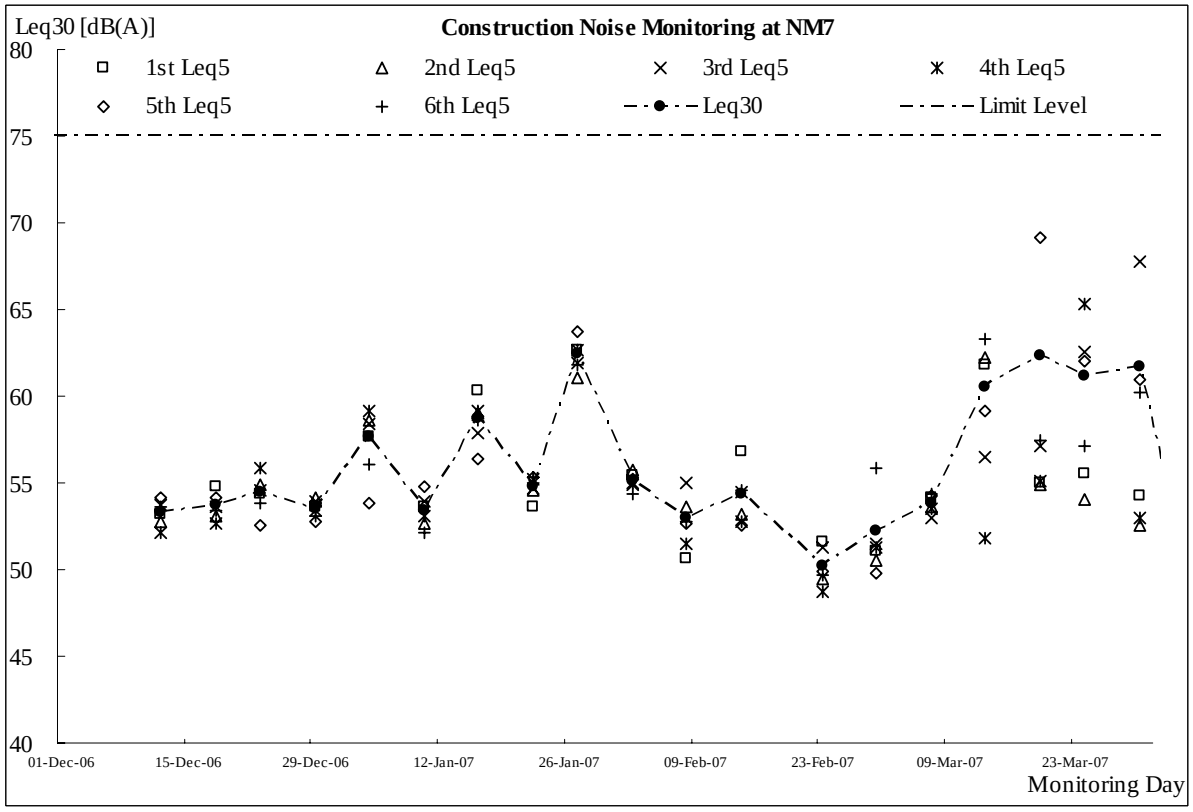

24-Hour TSP at AM7
µg/m3
AM7
Action Level
Limit Level
300
240
180
120
60
0
01-Dec-06
15-Dec-06
29-Dec-06
12-Jan-07
26-Jan-07
09-Feb-07
23-Feb-07
09-Mar-07
23-Mar-07
Monitoring Date

Construction Noise Monitoring Results






Leq30 [dB(A)]
Construction Noise Monitoring at NM6
1st Leq5
2nd Leq5
3rd Leq5
4th Leq5
5th Leq5
6th Leq5
Leq30
Limit Level
80
75
70
65
60
55
50
45
40
01-Dec-06
15-Dec-06
29-Dec-06
12-Jan-07
26-Jan-07
09-Feb-07
23-Feb-07
09-Mar-07
23-Mar-07
Monitoring Day


Leq30 [dB(A)]
Construction Noise Monitoring at NM7
1st Leq5
2nd Leq5
3rd Leq5
4th Leq5
5th Leq5
6th Leq5
Leq30
Limit Level
80
75
70
65
60
55
50
45
40
01-Dec-06
15-Dec-06
29-Dec-06
12-Jan-07
26-Jan-07
09-Feb-07
23-Feb-07
09-Mar-07
23-Mar-07
Monitoring Day

Annex K

Proforma of Site Inspection and IEC Audit in the Reporting Period

AUES

Site Inspection Checklist (SF-17)

Project	DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long	**Contractor:**	Leader Civil Engineering Corp. Ltd
		Engineer:	Babtie Asia Ltd
Inspected by:	**ET Auditor:** Ken Wong	**IEC:**	Mott Connell Ltd
	Contractor Rep: Benny / Edwin	**Environmental Team:**	Action-United Environmental Services & Consulting
	IEC's Rep: Nil	**Inspection Date & Time:**	06 March 2007
	RE's Rep: Mr. S L Hui	**Checklist Reference No.:**	DSD-AT060307

General Meteorological Information

Weather [ ] Sunny [ ] Fine [ ] Cloudy [ ] Overcast [✓] Drizzle [ ] Rain [ ] Hazy

Temp: [16] °C

Humidity: [✓] High (RH > 90%) [ ] Moderate (90% > RH > 50%) [ ] Low (RH < 50%)

Wind: [ ] Calm [✓] Light [ ] Breeze [ ] Strong

Air Quality	**Yes**	**No**	**NA**	**NC**	**Follow-up**	**Remarks**
Is hoarding of not less than 2.4m provided?	✓					
Are site vehicles traveling within controlled speed limit?	✓					
Are site vehicles movement confined to designated haul roads?	✓					
Are public roads outside site exits kept clean and free from dust?	✓					
Are haul roads and unpaved surfaces watered regularly to avoid dust generation?	✓					
Are there wheel washing facilities provided at site exits?	✓					
Is water spraying used during the main dust-generating activities?	✓					
Are the excavated or stockpile of dusty materials kept wet?	✓					
Is exposed area of ground covered or watered frequently?	✓					
Are load on vehicles covered by clean impervious sheeting?			✓			
Are vehicles and equipment switched off while not in use?	✓					
Is smoky emissions from plants/equipment avoided?	✓					
Is open burning avoided?	✓					

Observable dust sources [ ] Wind erosion [ ] Vehicle/equipment movements

[ ] Loading/unloading of materials [✓] Others Nil

Construction Noise

Are the construction works scheduled to minimize noise nuisance?	✓					
Are the works or equipment sited to minimize noise nuisance?	✓					
Are all plant and equipment well maintained and in good operating condition?	✓					
Is idle equipment turned off or throttled down?	✓					
Is powered mechanical equipment covered or shielded by appropriate acoustic materials?	✓					
Is silenced equipment used where appropriate?	✓					
Are noise enclosures or noise barriers used where necessary?	✓					
Does specified equipment has valid noise label?	✓					
Are Construction Noise Permits (CNPs) available for inspection?			✓			

Major Noise Source [ ] Traffic [✓] Construction activities inside of site

[ ] Construction activities outside of site [ ] Others

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge license obtained for the Project?		✓					
Is site effluent discharged in accordance with the discharge license?		✓					
Is the discharge of silty water avoided?		✓					
Is drainage adequate?		✓					
Is drainage system well maintained?		✓					
Are there temporary ditches for runoff discharge into appropriate watercourse?		✓					
Are there sedimentation tanks for settling runoff prior to discharge?		✓					
Are the sedimentation tanks:	Constructed of pre-formed individual cells?	✓					
	With adequate capacity?	✓					
	Free from silt and sediment?	✓					
Are there neutralization tanks for concrete batching/mixing discharge?				✓			
Are there oil interceptors in drainage system?				✓			
Is wheel wash facility provided at every site exit?		✓					
Are vehicles and plant cleaned of earth, mud & debris before leaving the site?		✓					
Are wheel washing facilities regularly inspected and maintained?				✓			
Are toilets provided on site? If so, are they properly maintained?		✓					
Are manholes covered and sealed?		✓					
Is oil leakage or spillage avoided?		✓					
Waste Management and Potential Land Contamination							
General Refuse:	Are receptacles (rubbish bins) available?	✓					
	Is there regular and proper disposal?	✓					
	Is proper sorting and recycling implemented?	✓					
Construction Waste:	Is generation of construction waste minimized?	✓					
	Is waste sorting implemented on site?	✓					
	Is construction waste reused where practicable?	✓					
	Is construction waste properly disposed of?	✓					
	Are disposal records available for inspection?	✓					
Chemical waste/waste oil	Is there designated storage area?			✓			
	Is chemical waste stored properly?			✓			
	Is there proper disposal?			✓			
	Is chemical waste license available for inspection?			✓			
Excavated Materials	Do excavated materials appear uncontaminated?	✓					
	Are appropriate procedures followed if contaminated materials exist?	✓					
	Are disposal records available for inspection?	✓					
Chemical/Fuel	Is chemical/fuel stored in bunded area?	✓					
	Is bund capacity adequate (>110% of the largest tank)?	✓					
	Are storage areas lockable?	✓					
Is foam, oil, grease or other objectionable matters in water or nearby drains of sewer avoided?		✓					

Remarks:

Previous Audit Follow-up:

1. No environmental issue was found during the site inspection. In general, the work area was kept clean and tidy.

Observations Recorded in this Site Inspection:

2. Grouting platform without entirely cover by the tarpaulin sheet (without topside) was observed at the Nam Sam Wai work front, the Contractor was reminded to rectify in proper condition.

Signatures:

Env. Auditor	Contractor's Representative	IC(E) Auditor	Resident Site Staff
Name :Ken Wong	Name:	Name:	Name:

AUES

Site Inspection Checklist (SF-17)

Project	DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long	**Contractor:**	Leader Civil Engineering Corp. Ltd
		Engineer:	Babtie Asia Ltd
Inspected by:	**ET Auditor:** Ken Wong	**IEC:**	Mott Connell Ltd
	Contractor Rep: Benny / Edwin	**Environmental Team:**	Action-United Environmental Services & Consulting
	IEC's Rep: Nil	**Inspection Date & Time:**	16 March 2007
	RE's Rep: Mr. S L Hui	**Checklist Reference No.:**	DSD-AT160307

General Meteorological Information

Weather [ ] Sunny [✓] Fine [ ] Cloudy [ ] Overcast [ ] Drizzle [ ] Rain [ ] Hazy

Temp: [25] °C

Humidity: [✓] High (RH > 90%) [ ] Moderate (90% > RH > 50%) [ ] Low (RH < 50%)

Wind: [ ] Calm [✓] Light [ ] Breeze [ ] Strong

Air Quality	**Yes**	**No**	**NA**	**NC**	**Follow-up**	**Remarks**
Is hoarding of not less than 2.4m provided?	✓					
Are site vehicles traveling within controlled speed limit?	✓					
Are site vehicles movement confined to designated haul roads?	✓					
Are public roads outside site exits kept clean and free from dust?	✓					
Are haul roads and unpaved surfaces watered regularly to avoid dust generation?		✓				
Are there wheel washing facilities provided at site exits?	✓					
Is water spraying used during the main dust-generating activities?	✓					
Are the excavated or stockpile of dusty materials kept wet?	✓					
Is exposed area of ground covered or watered frequently?	✓					
Are load on vehicles covered by clean impervious sheeting?			✓			
Are vehicles and equipment switched off while not in use?	✓					
Is smoky emissions from plants/equipment avoided?	✓					
Is open burning avoided?	✓					

Observable dust sources [✓] Wind erosion [ ] Vehicle/equipment movements [ ] Loading/unloading of materials [ ] Others Nil

Construction Noise

Are the construction works scheduled to minimize noise nuisance?	✓					
Are the works or equipment sited to minimize noise nuisance?	✓					
Are all plant and equipment well maintained and in good operating condition?	✓					
Is idle equipment turned off or throttled down?	✓					
Is powered mechanical equipment covered or shielded by appropriate acoustic materials?	✓					
Is silenced equipment used where appropriate?	✓					
Are noise enclosures or noise barriers used where necessary?	✓					
Does specified equipment has valid noise label?	✓					
Are Construction Noise Permits (CNPs) available for inspection?			✓			

Major Noise Source [ ] Traffic [✓] Construction activities inside of site [ ] Construction activities outside of site [ ] Others

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge license obtained for the Project?		✓					
Is site effluent discharged in accordance with the discharge license?		✓					
Is the discharge of silty water avoided?			✓				
Is drainage adequate?		✓					
Is drainage system well maintained?			✓				
Are there temporary ditches for runoff discharge into appropriate watercourse?		✓					
Are there sedimentation tanks for settling runoff prior to discharge?		✓					
Are the sedimentation tanks:	Constructed of pre-formed individual cells?	✓					
	With adequate capacity?	✓					
	Free from silt and sediment?	✓					
Are there neutralization tanks for concrete batching/mixing discharge?				✓			
Are there oil interceptors in drainage system?				✓			
Is wheel wash facility provided at every site exit?		✓					
Are vehicles and plant cleaned of earth, mud & debris before leaving the site?		✓					
Are wheel washing facilities regularly inspected and maintained?				✓			
Are toilets provided on site? If so, are they properly maintained?		✓					
Are manholes covered and sealed?		✓					
Is oil leakage or spillage avoided?		✓					
Waste Management and Potential Land Contamination							
General Refuse:	Are receptacles (rubbish bins) available?	✓					
	Is there regular and proper disposal?	✓					
	Is proper sorting and recycling implemented?	✓					
Construction Waste:	Is generation of construction waste minimized?	✓					
	Is waste sorting implemented on site?	✓					
	Is construction waste reused where practicable?	✓					
	Is construction waste properly disposed of?	✓					
	Are disposal records available for inspection?	✓					
Chemical waste/waste oil	Is there designated storage area?			✓			
	Is chemical waste stored properly?			✓			
	Is there proper disposal?			✓			
	Is chemical waste license available for inspection?			✓			
Excavated Materials	Do excavated materials appear uncontaminated?	✓					
	Are appropriate procedures followed if contaminated materials exist?	✓					
	Are disposal records available for inspection?	✓					
Chemical/Fuel	Is chemical/fuel stored in bunded area?	✓					
	Is bund capacity adequate (>110% of the largest tank)?	✓					
	Are storage areas lockable?	✓					
Is foam, oil, grease or other objectionable matters in water or nearby drains of sewer avoided?		✓					

Remarks:

Previous Audit Follow-up:

Suitable cover setup had been provided to the grouting platform at the Nam Sam Wai work front.

Observations Recorded in this Site Inspection:

Muddy water discharge was observed at the Shan Pui River work front, the Contractor was reminded to review the efficient/effective of the on-site desilting system.

Fugitive dust emission from the dry/dusty haul road was observed at Kam Tin River work front, the Contractor was reminded to implement the dust suppression measures more frequently.

Some excavated sediment accumulated on-site without covered entire was observed at the Nam San Wai work front, the Contractor was reminded to cover entirely and remove on-site as soon as possible.

Signatures:

Env. Auditor	Contractor's Representative	IC(E) Auditor	Resident Site Staff
Name :Ken Wong	Name:	Name:	Name:

AUES

Site Inspection Checklist (SF-17)

Project	DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long	**Contractor:**	Leader Civil Engineering Corp. Ltd
		Engineer:	Babtie Asia Ltd
Inspected by:	**ET Auditor:** Ken Wong	**IEC:**	Mott Connell Ltd
	Contractor Rep: Benny / Edwin	**Environmental Team:**	Action-United Environmental Services & Consulting
	IEC's Rep: Nil	**Inspection Date & Time:**	21 March 2007
	RE's Rep: Mr. S L Hui	**Checklist Reference No.:**	DSD-AT210307

General Meteorological Information

Weather [ ] Sunny [✓] Fine [ ] Cloudy [ ] Overcast [ ] Drizzle [ ] Rain [ ] Hazy

Temp: [19] °C

Humidity: [ ] High (RH > 90%) [✓] Moderate (90% > RH > 50%) [ ] Low (RH < 50%)

Wind: [ ] Calm [✓] Light [ ] Breeze [ ] Strong

Air Quality	**Yes**	**No**	**NA**	**NC**	**Follow-up**	**Remarks**
Is hoarding of not less than 2.4m provided?	✓					
Are site vehicles traveling within controlled speed limit?	✓					
Are site vehicles movement confined to designated haul roads?	✓					
Are public roads outside site exits kept clean and free from dust?	✓					
Are haul roads and unpaved surfaces watered regularly to avoid dust generation?	✓					
Are there wheel washing facilities provided at site exits?	✓					
Is water spraying used during the main dust-generating activities?	✓					
Are the excavated or stockpile of dusty materials kept wet?	✓					
Is exposed area of ground covered or watered frequently?	✓					
Are load on vehicles covered by clean impervious sheeting?			✓			
Are vehicles and equipment switched off while not in use?	✓					
Is smoky emissions from plants/equipment avoided?	✓					
Is open burning avoided?	✓					

Observable dust sources [ ] Wind erosion [ ] Vehicle/equipment movements [ ] Loading/unloading of materials [✓] Others Nil

Construction Noise

Are the construction works scheduled to minimize noise nuisance?	✓					
Are the works or equipment sited to minimize noise nuisance?	✓					
Are all plant and equipment well maintained and in good operating condition?	✓					
Is idle equipment turned off or throttled down?	✓					
Is powered mechanical equipment covered or shielded by appropriate acoustic materials?	✓					
Is silenced equipment used where appropriate?	✓					
Are noise enclosures or noise barriers used where necessary?	✓					
Does specified equipment has valid noise label?	✓					
Are Construction Noise Permits (CNPs) available for inspection?			✓			

Major Noise Source [ ] Traffic [✓] Construction activities inside of site [ ] Construction activities outside of site [ ] Others

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge license obtained for the Project?		✓					
Is site effluent discharged in accordance with the discharge license?		✓					
Is the discharge of silty water avoided?		✓					
Is drainage adequate?		✓					
Is drainage system well maintained?		✓					
Are there temporary ditches for runoff discharge into appropriate watercourse?		✓					
Are there sedimentation tanks for settling runoff prior to discharge?		✓					
Are the sedimentation tanks:	Constructed of pre-formed individual cells?	✓					
	With adequate capacity?	✓					
	Free from silt and sediment?	✓					
Are there neutralization tanks for concrete batching/mixing discharge?				✓			
Are there oil interceptors in drainage system?				✓			
Is wheel wash facility provided at every site exit?		✓					
Are vehicles and plant cleaned of earth, mud & debris before leaving the site?		✓					
Are wheel washing facilities regularly inspected and maintained?				✓			
Are toilets provided on site? If so, are they properly maintained?		✓					
Are manholes covered and sealed?		✓					
Is oil leakage or spillage avoided?		✓					
Waste Management and Potential Land Contamination							
General Refuse:	Are receptacles (rubbish bins) available?	✓					
	Is there regular and proper disposal?	✓					
	Is proper sorting and recycling implemented?	✓					
Construction Waste:	Is generation of construction waste minimized?	✓					
	Is waste sorting implemented on site?	✓					
	Is construction waste reused where practicable?	✓					
	Is construction waste properly disposed of?	✓					
	Are disposal records available for inspection?	✓					
Chemical waste/waste oil	Is there designated storage area?			✓			
	Is chemical waste stored properly?			✓			
	Is there proper disposal?			✓			
	Is chemical waste license available for inspection?			✓			
Excavated Materials	Do excavated materials appear uncontaminated?	✓					
	Are appropriate procedures followed if contaminated materials exist?	✓					
	Are disposal records available for inspection?	✓					
Chemical/Fuel	Is chemical/fuel stored in bunded area?	✓					
	Is bund capacity adequate (>110% of the largest tank)?	✓					
	Are storage areas lockable?	✓					
Is foam, oil, grease or other objectionable matters in water or nearby drains of sewer avoided?		✓					

Remarks:

Previous Audit Follow-up:

No muddy water discharge was observed at the Shan Pui River work front.

A dust suppression measure was applied at the Kam Tin River work front.

Excavated sediment accumulated on-site was covered entirely by the tarpaulin sheet.

Observations Recorded in this Site Inspection:

No environmental issue was recorded during the site inspection.

Signatures:

Env. Auditor	Contractor's Representative	IC(E) Auditor	Resident Site Staff
Name :Ken Wong	Name:	Name:	Name:

AUES

Site Inspection Checklist (SF-17)

Project	DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long	**Contractor:**	Leader Civil Engineering Corp. Ltd
		Engineer:	Babtie Asia Ltd
Inspected by:	**ET Auditor:** Ken Wong	**IEC:**	Mott Connell Ltd
	Contractor Rep: Benny / Edwin	**Environmental Team:**	Action-United Environmental Services & Consulting
	IEC's Rep: Nil	**Inspection Date & Time:**	30 March 2007
	RE's Rep: Mr. S L Hui	**Checklist Reference No.:**	DSD-AT300307

General Meteorological Information

Weather [ ] Sunny [✓] Fine [ ] Cloudy [ ] Overcast [ ] Drizzle [ ] Rain [ ] Hazy

Temp: [27] °C

Humidity: [ ] High (RH > 90%) [✓] Moderate (90% > RH > 50%) [ ] Low (RH < 50%)

Wind: [✓] Calm [ ] Light [ ] Breeze [ ] Strong

Air Quality	Yes	No	NA	NC	Follow-up	Remarks
Is hoarding of not less than 2.4m provided?	✓					
Are site vehicles traveling within controlled speed limit?	✓					
Are site vehicles movement confined to designated haul roads?	✓					
Are public roads outside site exits kept clean and free from dust?	✓					
Are haul roads and unpaved surfaces watered regularly to avoid dust generation?	✓					
Are there wheel washing facilities provided at site exits?	✓					
Is water spraying used during the main dust-generating activities?	✓					
Are the excavated or stockpile of dusty materials kept wet?	✓					
Is exposed area of ground covered or watered frequently?	✓					
Are load on vehicles covered by clean impervious sheeting?			✓			
Are vehicles and equipment switched off while not in use?	✓					
Is smoky emissions from plants/equipment avoided?	✓					
Is open burning avoided?	✓					

Observable dust sources [ ] Wind erosion [ ] Vehicle/equipment movements [ ] Loading/unloading of materials [✓] Others Nil

Construction Noise

Are the construction works scheduled to minimize noise nuisance?	✓					
Are the works or equipment sited to minimize noise nuisance?	✓					
Are all plant and equipment well maintained and in good operating condition?	✓					
Is idle equipment turned off or throttled down?	✓					
Is powered mechanical equipment covered or shielded by appropriate acoustic materials?	✓					
Is silenced equipment used where appropriate?	✓					
Are noise enclosures or noise barriers used where necessary?	✓					
Does specified equipment has valid noise label?	✓					
Are Construction Noise Permits (CNPs) available for inspection?			✓			

Major Noise Source [ ] Traffic [✓] Construction activities inside of site [ ] Construction activities outside of site [ ] Others

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge license obtained for the Project?		✓					
Is site effluent discharged in accordance with the discharge license?		✓					
Is the discharge of silty water avoided?		✓					
Is drainage adequate?		✓					
Is drainage system well maintained?		✓					
Are there temporary ditches for runoff discharge into appropriate watercourse?		✓					
Are there sedimentation tanks for settling runoff prior to discharge?		✓					
Are the sedimentation tanks:	Constructed of pre-formed individual cells?	✓					
	With adequate capacity?	✓					
	Free from silt and sediment?	✓					
Are there neutralization tanks for concrete batching/mixing discharge?				✓			
Are there oil interceptors in drainage system?				✓			
Is wheel wash facility provided at every site exit?		✓					
Are vehicles and plant cleaned of earth, mud & debris before leaving the site?		✓					
Are wheel washing facilities regularly inspected and maintained?				✓			
Are toilets provided on site? If so, are they properly maintained?		✓					
Are manholes covered and sealed?		✓					
Is oil leakage or spillage avoided?		✓					
Waste Management and Potential Land Contamination							
General Refuse:	Are receptacles (rubbish bins) available?	✓					
	Is there regular and proper disposal?	✓					
	Is proper sorting and recycling implemented?	✓					
Construction Waste:	Is generation of construction waste minimized?	✓					
	Is waste sorting implemented on site?	✓					
	Is construction waste reused where practicable?	✓					
	Is construction waste properly disposed of?	✓					
	Are disposal records available for inspection?	✓					
Chemical waste/waste oil	Is there designated storage area?			✓			
	Is chemical waste stored properly?			✓			
	Is there proper disposal?			✓			
	Is chemical waste license available for inspection?			✓			
Excavated Materials	Do excavated materials appear uncontaminated?	✓					
	Are appropriate procedures followed if contaminated materials exist?	✓					
	Are disposal records available for inspection?	✓					
Chemical/Fuel	Is chemical/fuel stored in bunded area?	✓					
	Is bund capacity adequate (>110% of the largest tank)?	✓					
	Are storage areas lockable?	✓					
Is foam, oil, grease or other objectionable matters in water or nearby drains of sewer avoided?		✓					

Remarks:

Previous Audit Follow-up:

Nil

Observations Recorded in this Site Inspection:

Excavated sediment accumulated at the Nam Shan Wai work front without cover entirely by the tarpaulin sheet was observed, the Contactor was reminded to cover entirely or remove on-site as soon as possible.

Signatures:

Env. Auditor	Contractor's Representative	IC(E) Auditor	Resident Site Staff
Name :Ken Wong	Name:	Name:	Name: