

**JOB NO.: TCS00310/06** 

**VERSION No.: 1** 

DRAINAGE SERVICES DEPARTMENT 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

MONTHLY ENVIRONMENTAL MONITORING & AUDIT (EM&A) REPORT FOR MARCH 2010 (NO. 48) (DESIGNATED ELEMENTS)

PREPARED FOR

LEADER CIVIL ENGINEERING CORPORATION LIMITED

#### **Quality Index**

Date	Refe	rence No.		
13 April 2010	TCS00310/	/06/600/R1071v1		
<b>Prepared l</b> Nicola Ho	•	rtified By vid Yeung	<b>Approved By</b> TW Tam	<b>Verified By</b> Dr. Anne F Kerr
An	le &		Firm	Le Flan
Environmental Co	onsultant Environme	ntal Team Leader	General Manager	Independent Environmental Checker
		1		
Version No.	Date		Remarks	
1	13 April 2010	First Submission		

This report has been prepared by Action-United Environmental Services & Consulting with all reasonable skill, care and diligence within the terms of the Agreement with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client. We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.



#### **EXECUTIVE SUMMARY**

- ES01. Leader Civil Engineering Corporation Limited (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.
- ES02. This Monthly Environmental Monitoring and Audit (EM&A) Report for March 2010 (No. 48) presents the environmental impact monitoring and audit (EM&A) program conducted from 1 to 31 March 2010 for the Designated Elements. The EM&A program in March 2010 covered air quality, construction noise and waste management only.

#### BREACH OF ACTION AND LIMIT (AL) LEVELS

- ES03. There were no breaches of Action or Limit level for air monitoring in this reporting month.
- ES04. No construction noise complaint (Action Level) or exceedance was recorded in this reporting month.

#### COMPLAINT LOG

ES05. No environmental complaint was received in this month.

#### NOTIFICATION OF ANY SUMMONS AND SUCCESSFUL PROSECUTION

ES06. There was no environmental summons or prosecution in this month.

#### **REPORTING CHANGES**

ES07. There are no changes in the reporting format or content in this month.

#### **FUTURE KEY ISSUES**

ES08. Construction activities to be undertaken in **April 2010** include sheet piling, excavation, pipe laying, backfilling, concreting and extract sheet pile. Potential environmental impacts arising from the works include construction waste, air quality, noise and water quality (particularly site runoff during rainy seasons). Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule to ensure site environmental performance is acceptable.



#### **TABLE OF CONTENTS**

1.0	BASIC	PROJECT INFORMATION1
2.0	Envir	ONMENTAL STATUS2
3.0	SUMM	ARY OF EM&A REQUIREMENTS4
4.0		MENTATION STATUS5
5.0		FORING RESULTS6
		RT ON NON-COMPLIANCE, COMPLAINTS, NOTIFICATIONS OF SUMMONS AND
0.0		SSFUL PROSECUTIONS
7.0		RS12
7.0	OIIILI	
<u>LIS</u>	T OF T	<u>CABLES</u>
TAB	<b>SLE 2-1</b>	WORK UNDERTAKEN AND ILLUSTRATIONS OF MITIGATION MEASURES
TAB	<b>BLE 2-2</b>	DESCRIPTION OF THE MONITORING STATIONS
TAB	<b>SLE 3-1</b>	SUMMARY OF EM&A REQUIREMENTS
TAB	<b>BLE 3-2</b>	ACTION AND LIMIT LEVELS FOR AIR QUALITY
TAB	<b>BLE 3-3</b>	ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE
TAB	<b>SLE 4-1</b>	STATUS OF ENVIRONMENTAL LICENSES AND PERMITS
TAB	<b>SLE 5-1</b>	MONITORING EQUIPMENT USED IN IMPACT EM&A PROGRAM
TAB	BLE 5-2	LOCATION OF AIR QUALITY AND CONSTRUCTION NOISE MONITORING STATIONS/LOCATIONS
TAB	<b>SLE 5-3</b>	SUMMARY OF AIR QUALITY MONITORING RESULTS
TAB	<b>SLE 5-4</b>	SUMMARY OF NOISE MONITORING RESULTS AT NM3
TAB	<b>SLE 5-5</b>	SUMMARY OF NOISE MONITORING RESULTS AT NM4
TAB	<b>SLE 5-6</b>	SUMMARY OF NOISE MONITORING RESULTS AT NM6
TAB	<b>SLE 5-7</b>	SUMMARY OF NOISE MONITORING RESULTS AT NM7
TAB	<b>SLE 5-8</b>	MONITORING SCHEDULE FOR THE NEXT MONTH
TAB	LE <b>7-1</b>	SUMMARY OF WASTE QUANTITIES FOR DISPOSAL
TAB	<b>SLE 7-2</b>	SUMMARY OF WASTE QUANTITIES FOR REUSE/RECYCLING
LIS	T OF A	<u>ANNEXES</u>
Ann	NEX A	PROJECT SITE LAYOUT
ANN	NEX B	PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE
ANN	NEX C	CONSTRUCTION PROGRAM
ANN	NEX D	PHOTOGRAPHICAL RECORDS – NOISE BARRIER ON-SITES
ANN	NEX E	LOCATIONS OF MONITORING STATIONS
Ann	NEX F	EVENT AND ACTION PLAN
Ann	NEX G	MITIGATION IMPLEMENTATION SCHEDULE
Ann	NEX H	EQUIPMENT CALIBRATION CERTIFICATES
Ann	NEX I	METEOROLOGICAL DATA
Ann	NEX J	GRAPHICAL PLOTS OF AIR QUALITY AND CONSTRUCTION NOISE MONITORING RESULTS

ANNEX K PROFORMA OF SITE INSPECTION AND IEC AUDIT



#### 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 Monthly EM&A Report for March 2010 (No. 48) (Designated Elements Construction Phase) summarizes the impact monitoring results and audit findings from 1 to 31 March 2010.

#### **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 THIS MONTH

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

#### MANAGEMENT STRUCTURE

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

#### CONSTRUCTION ACTIVITIES UNDERTAKEN IN THIS MONTH

1.06 The major construction activities undertaken during this month under the Environmental Permit (EP-220/2005) were as follows:-

	Construction Activities						
Location	Sheet piling	Excavation	Pipe laying	Backfilling	Concreting	Extract Sheet Pile	
Kam Tin Pumping Station(P1)		X	X	X	X		
Sha Po Pumping Station(P2)		X		X	X		
Nam Sang Wai P/S(P3)				X	X		
Nam Sang Wai Road(S4)	X	X	X	X	X	X	
Pok Wai South Road(S5 & S6)	X	X	X	X	X	X	



#### 2.0 ENVIRONMENTAL STATUS

#### WORKS UNDERTAKEN IN THIS MONTH

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

Table 2-1 Work Undertaken and Illustrations of Mitigation Measures

Locations	Description of Construction Activities	Environmental Mitigation Measures	EM&A Ref.
P1 (Kam Tin	<ul> <li>Excavation</li> </ul>	• Erect 2.4m high noise barrier hoarding around the works	A1 & F6
Pumping	• Pipe laying	area at P1, P2 and P3	
Station)	Backfilling	1 3	A2
	• Concreting	r in r r	A3
		<ul> <li>Spray water to all dusty materials immediately before loading and unloading</li> </ul>	A4
P2 (Sha Po Pumping	<ul><li> Excavation</li><li> Backfilling</li></ul>	• Erect 2.4m high noise barrier hoarding around the works area at P1, P2 and P3	A1 & F6
Station) and	<ul> <li>Concreting</li> </ul>	• Remove dust and spray water at the construction access	A2
		Cover the stockpiles of dusty material properly	A3
		<ul> <li>Spray water to all dusty materials immediately before loading and unloading</li> </ul>	A4
P3 (Nam Sang Wai	<ul><li>Backfilling</li><li>Concreting</li></ul>	• Erect 2.4m high noise barrier hoarding around the works area at P1, P2 and P3	A1 & F6
Pumping			A5
Station		1 1 1	A6
		- T - J	A7
		~ F-u,,,	A8
		1	B1, B2
			& F5
		Apply and obtain appropriate waste disposal licenses	D1
S4 (Nam	<ul> <li>Sheet piling</li> </ul>	1	A2
Sang Wai	• Excavation		A3
Road) and	• Pipe laying	Spray water to all dusty materials immediately before	A4
	<ul><li>Backfilling</li><li>Concreting</li></ul>	loading and unloading	۸.5
	• Extract sheet pile	Wash the wheels of vehicles before leaving the site	A5
S5 & S6 (Pok	• Sheet piling	Handle, store and dispose of chemical wastes as per	D2. D3
Wai South	• Excavation	relevant regulations	& D4
Road)	<ul> <li>Pipe laying</li> </ul>		D5
	<ul> <li>Backfilling</li> </ul>	• Restrict open fires and provide fire fighting equipment	F9
	<ul> <li>Concreting</li> </ul>	in the works area	
	• Extract sheet pile	<ul> <li>Perform weekly inspection with ET and monthly audit with IEC</li> </ul>	H1
		<ul> <li>Conduct noise and dust monitoring as per EM&amp;A Manual during construction</li> </ul>	I1 & I2
		<ul> <li>Provide sedimentation tanks for treating site discharge.</li> </ul>	_
		• Recycle wheel washing water and provide sedimentation	-
		tanks for treating site discharge.	

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 monitoring stations (AM1, AM5, AM6 & AM7) and four noise monitoring stations (NM3, NM4, NM6 & NM7) under the project EP. Locations of the monitoring stations and description are summarized in Table 2-2.

Table 2-2 Description of the Monitoring Stations

Station ID	Nature of Premise	Site Work	<b>Station Coordinates</b>		
Station ID	Nature of Frenise	Description	Northern	Eastern	
AM1	Site Boundary in NSW		835829	822910	
AM5	Site Boundary in FKH	excavation;	835121	823515	
AM6	Site Boundary in KT	sheet piling;	833308	823987	
AM7	Site Boundary in NSW	backfilling;	836171	822586	
NM3	Village House in NSW	pipe laying;	835808	822817	
NM4	Village House in NSW	concreting; and	835282	822811	
NM6	Village House in KT	extract sheet pile	833288	823999	
NM7	Village House in FKH		835121	823495	



#### 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 as the key monitoring parameters during the construction phase of the project.
- 3.02 A summary of the impact EM&A requirements for air quality and construction noise is shown in **Table 3-1**.

Table 3-1 Summary of EM&A Requirements

Environmental Aspect	Monitoring Parameters
Air Quality	24-hour TSP
Construction Noise	Leq 30min 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 Locations	Action Level (μg/m³)		Limit Level (μg/m³)	
Womtoring Locations	1-hour TSP	24-hour TSP	1-hour TSP	24-hour 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

Monitoring Period		d	Action Level	Limit Level	
0700-1900	hours	on	normal	When one or more documented	> 75 dB(A)
weekdays				complaints are received	> /3 UB(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 (EP-220/2005) 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 are summarized in **Table 2-1** and the implementation schedule as shown in **Annex G**.
- 4.02 The status of permits, licenses, and/or notifications related to environmental protection under this Project during the month is presented in **Table 4-1**.

Table 4-1 Status of Environmental Licenses and Permits

Items	Item Description	License/Permit Status
1	Environmental Permit No.: EP-220/2005	Issued in June 2005
	· · · · · · · · · · · · · · · · · · ·	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 8 May 2006
5	Account for Disposal of Construction Waste No. 5004959	Registration on 27 Dec 2005



#### 5.0 MONITORING RESULTS

#### MONITORING METHODOLOGY OF AIR QUALITY MONITORING

- 5.01 The 24-hour TSP monitoring was carried out by a High Volume Air Sampler (HVAS) in compliance with the updated EM&A Manual. The HVAS employed complies with the PS specifications including.
  - Power supply of 220v/50 Hz for 24-hour continuous operation;
  - 0.6-1.7m<sup>3</sup>/min (20-60 SCFM) adjustable flow rate;
  - A 7-day mechanical timer for 24-hour operation;
  - An elapsed time indicator with  $\pm 2$  minutes accuracy for 24-hour operation;
  - Minimum exposed area of 63in<sup>2</sup>;
  - Flow control accuracy of  $\pm 2.5\%$  deviation over 24-hour operation;
  - An anodized aluminum shelter to protect the filter and sampler;
  - A motor speed-voltage control to control mass flow rate with accuracy of  $\pm 2.5\%$  deviation over 24-hour 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-hour 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. The validation of all monitoring practices and data were following the in-house QA/QC procedures. Blank filters samples were collected and delivered to the HOKLAS-accredited laboratory for QA/QC check.
- 5.03 The meteorological information in this month was obtained from Lau Fau Shan Station of the Hong Kong Observatory (HKO).

#### METHODOLOGY FOR CONSTRUCTION NOISE MONITORING

- 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 and associated acoustical calibrators in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specifications 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 5m/s or wind with gusts exceeding 10m/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-hour TSP filter papers.
- 5.09 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

Env. Aspect	Parameters	Monitoring Equipment			
Air Quality	24-hour TSP	Greasby Anderson GMWS2310 High Volume Air Sampler			
Noise		B&K Sound Level Meter (Type 2238) and Acoustics Calibrator (Type 4231)			

#### **EQUIPMENT CALIBRATION**

- 5.10 Initial calibration of the HVAS 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. HVAS of AM5 and AM6 was required calibration in this month, HVAS of AM5 and AM6 monitoring equipment required to calibrate in next month. Updated calibration certificate and schedule is shown in Annex H.
- 5.11 The sound level meters were calibrated using an acoustical 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 acoustical 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 Calibration certificates of the sound level meters will provide depend on the annual calibration had undertaken.

#### PARAMETERS MONITORED

5.13 The environmental parameters monitoring in this month 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 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/Locations

Air Quality (4 Statio	ons)
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
<b>Construction Noise</b>	(4 Locations)
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-hour TSP monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A Manual.
- 5.16 In this reporting period, a total of 6 monitoring days were scheduled at designated station AM1, AM5, AM6 and AM7. However, there are 11 events of unsuccessful 24-hour



monitoring due to the power failure of HVS occurred at AM1 and AM7.

#### MONITORING RESULTS AND SCHEDULE

5.17 Monitoring results in this month for air quality is summarized at **Table 5-3**.

Table 5-3 Summary of Air Quality Monitoring Results

Date	24-hour TSP (μg/m³)					
Date	AM1	AM5	AM6	AM7		
2-Mar-10	138	84	29	Power failure#		
8-Mar-10	Power failure#	190	138	Power failure#		
13-Mar-10	Power failure#	135	55	Power failure#		
19-Mar-10	Power failure#	198	68	Power failure#		
25-Mar-10	Power failure#	86	54	Power failure#		
31-Mar-10	Power failure#	188	78	Power failure#		
Average (Range)	NA	137 (84-198)	70 (29 – 138)	NA		
<b>Action / Limit</b>	> 184 / >260	> 237 / >260	> 183 / >260	> 204 / >260		

Note: All 24-hour TSP monitoring present was start at 00:00 on each monitoring date.

- 5.18 In this reporting period, there were no breaches of Action/ Limit level in 24-hour TSP air monitoring. However, a total of 11 events of power failure incident were happened at Station AM1 and AM7 as presented in Table 5-3. The ET has liaised with the Contractor for the power supply provision issue. The update for the maintenance works and resumption of power will be reported in next month.
- 5.19 Results of construction Noise monitoring in this month were summarized at 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
3-Mar-10	13:00	54.4	54.7	55.4	53.9	55.2	56.8	55.2	58.2
9-Mar-10	13:00	55.6	56.3	57.8	56.2	55.8	55.1	56.2	59.2
15-Mar-10	11:25	58.4	59.4	59.1	60.4	58.8	59.4	59.3	62.3
20-Mar-10	11:15	54.8	54.4	57.1	56.1	54.9	57.2	55.9	58.9
26-Mar-10	11:32	56.6	58.3	58.8	57.9	57.7	58.5	58.0	61.0
Limit Le	evel								75

Note: \* 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
3-Mar-10	10:40	57.9	58.8	60.3	57.4	58.2	57.3	58.4	61.4
9-Mar-10	10:20	55.6	57.3	56.9	56.4	57.9	55.8	56.7	59.7
15-Mar-10	13:20	56.7	59.3	57.4	57.5	58.2	57.9	57.9	60.9
20-Mar-10	09:20	56.1	54.8	54.4	57.7	54.9	56.3	55.9	58.9
26-Mar-10	09:55	55.4	57.3	55.9	55.5	56.8	58.3	56.7	59.7
Limit Lo	evel								75

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

<sup>#</sup> Monitoring was affected due to power failure.



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
3-Mar-10	11:30	64.7	65.0	64.9	64.5	64.4	65.1	64.8
9-Mar-10	13:00	65.4	65.7	65.9	65.4	65.6	65.8	65.6
15-Mar-10	13:01	64.8	64.7	65.0	65.2	65.4	64.9	65.0
20-Mar-10	10:14	68.4	68.9	68.6	68.7	69.0	68.6	68.7
26-Mar-10	13:02	66.2	65.8	66.0	65.9	66.3	66.2	66.1
Limit Lo	evel							75

Note: 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
3-Mar-10	09:55	55.6	52.4	53.6	54.3	53.3	56.2	54.4
9-Mar-10	11:00	53.7	54.2	55.4	54.6	53.9	53.1	54.2
15-Mar-10	10:30	61.2	60.7	60.9	63.7	61.9	60.6	61.6
20-Mar-10	08:35	54.3	56.2	55.6	55.5	54.9	55.8	55.4
26-Mar-10	09:10	56.9	56.6	58.7	57.2	56.3	55.8	57.0
Limit Lo	evel							75

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

- 5.20 No construction noise complaint (Action Level) was received; and also construction noise monitoring above the Limit Level was recorded in this month.
- 5.21 The tentative monitoring schedule for the coming month (**April 2010**) is shown in **Table 5-8**.

Table 5-8 Tentative Schedule of Monitoring for Next Month

Tubic 5 0		c Schedule of Monitoring to	
Date		Air Quality	Noise Leq 30min
Thu	1-Apr-10		
Fri	2-Apr-10		
Sat	3-Apr-10		
Sun	4-Apr-10		
Mon	5-Apr-10		
Tue	6-Apr-10		
Wed	7-Apr-10		
Thu	8-Apr-10		
Fri	9-Apr-10		
Sat	10-Apr-10		
Sun	11-Apr-10		
Mon	12-Apr-10		
Tue	13-Apr-10		
Wed	14-Apr-10		
Thu	15-Apr-10		
Fri	16-Apr-10		
Sat	17-Apr-10		
Sun	18-Apr-10		
Mon	19-Apr-10		
Tue	20-Apr-10		
Wed	21-Apr-10		
Thu	22-Apr-10		
Fri	23-Apr-10		
Sat	24-Apr-10	_	
Sun	25-Apr-10		
Mon	26-Apr-10		



Tue	27-Apr-10	
Wed	28-Apr-10	
Thu	29-Apr-10	
Fri	30-Apr-10	

Monitori	ng Da	y
Sunday	or	Public

#### WEATHER CONDITIONS DURING THE MONITORING MONTH

5.22 The meteorological data during the monitoring date are summarized in **Annex I**.

#### GRAPHICAL PLOTS OF TRENDS OF MONITORED PARAMETERS

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

#### WEATHER CONDITIONS THAT AFFECT THE MONITORING RESULTS

5.24 The weather conditions during 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 month.

#### **QA/QC RESULTS AND DETECTION LIMITS**

5.26 Not applicable.



## 6.0 REPORT ON NON-COMPLIANCE, COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

#### RECORD OF NON-COMPLIANCE OF ACTION AND LIMIT LEVELS

- 6.01 There were no breaches of Action or Limit level for air monitoring in this reporting month.
- 6.02 No construction noise complaint (Action Level) or monitoring noise level exceeding the Limit Level was recorded in this reporting month.

#### RECORD OF ENVIRONMENTAL COMPLAINTS RECEIVED

6.03 There were no environmental complaints received in this month.

#### RECORD OF NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTION

6.04 There were no notification of summons or prosecutions received in this month.

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

6.05 No complaints or notification of summons was received in this month.

#### **DESCRIPTION OF FOLLOW-UP ACTIONS TAKEN**

6.06 As mention in Section 6.05, no non-compliance, complaints or notification of summons was received in this month. Therefore, no follow-up action was needed. The Contractor was reminded to implement the environmental mitigation measures as present in **Table 2-1** as necessary.



#### 7.0 OTHERS

#### **FUTURE KEY ISSUES**

7.01 Construction activities to be undertaken in **April 2010** include excavation, pipe laying, backfilling, concreting and extract sheet pile. Potential environmental impacts arising from the works include construction waste, air quality, noise and water quality (particularly site runoff during rainy seasons). 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 month are summarized in **Tables 7-1** and **7-2**.

Table 7-1 Summary of Waste Quantities for Disposal

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) (tons) – Disposed	1,415	Tuen Mun 38 Fill Bank
C&D Materials (Inert) (tons) – Reused	0	DSD Contract DC/2005/02
C&D Materials (Non-Inert) (tons)	0	NA
Chemical Waste (Litres)	0	NA
General Refuse (tons)	64	Refuse Collector

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

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

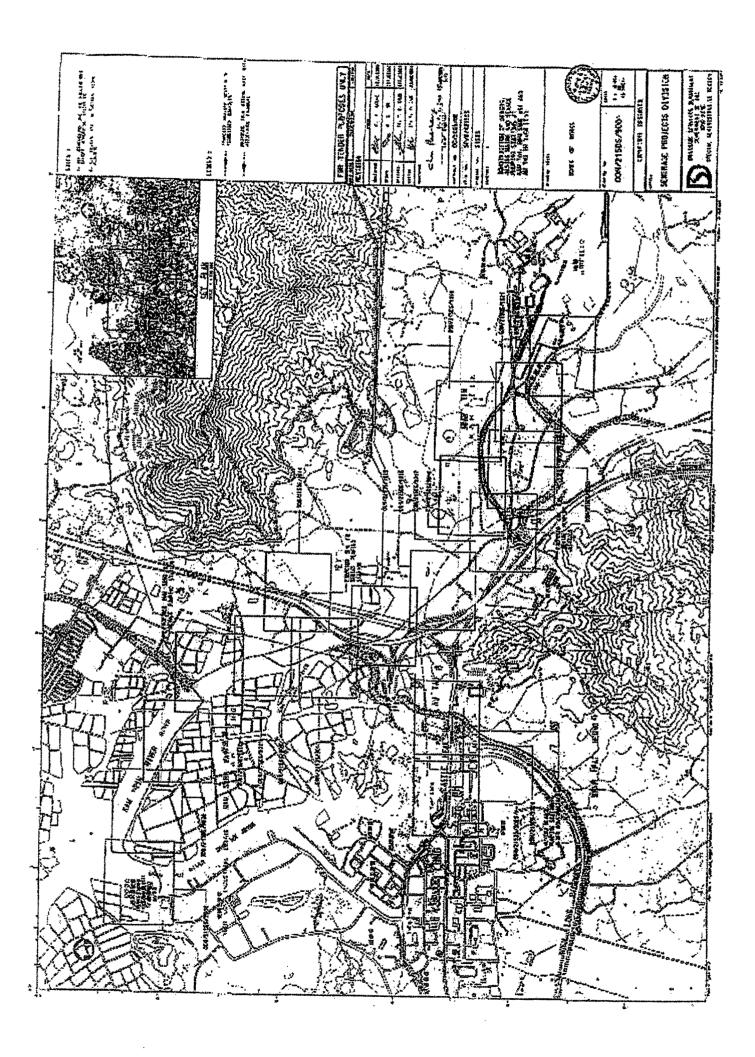
7.03 There was no site effluent discharged but an estimated volume of less than 50m³ of surface runoff was discharged in the month. The sampling of effluent had been carried out by the Contractor in compliance with the Discharge License (No.1U434/1) requirement in this month.

#### SUBMISSION OF PROFORMA

- 7.04 Representatives of the Engineer, the Contractor and ET carried out regular weekly site inspection on 3, 9, 16, 23 and 30 March 2010 to evaluate the site environmental performance. No non-compliance was found in this month. Seven observations were recorded from the ET weekly site inspections. The monthly site audit by the IEC in this reporting month was undertaken on 23 March 2010. No non-compliance but 1 observation was issued by IEC.
- 7.05 Records of the weekly site inspection and joint IEC site audit are presented in **Annex K**.



## ANNEX A PROJECT SITE LAYOUT

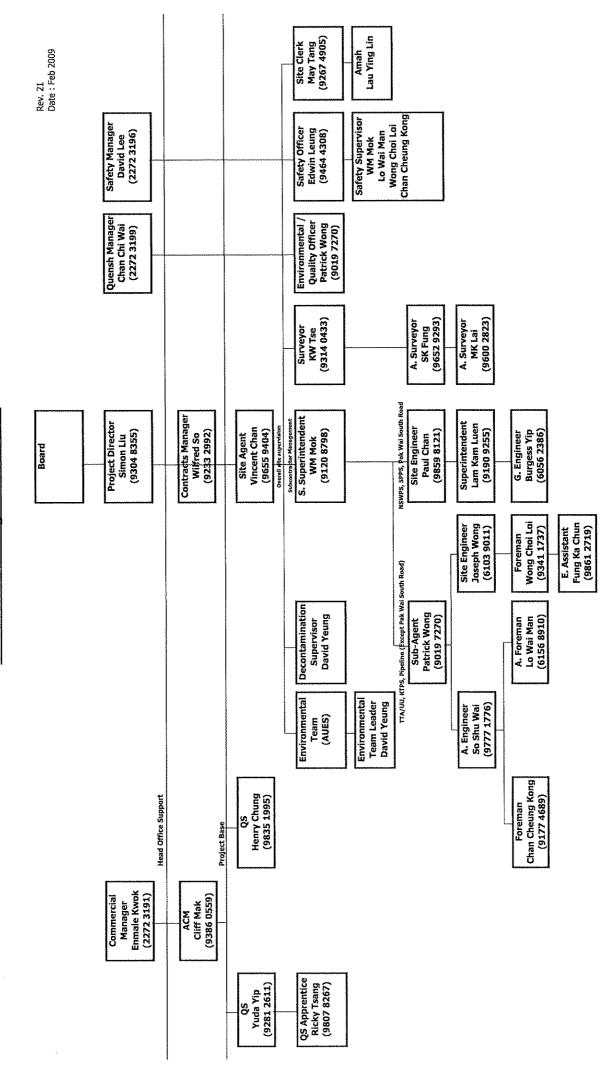




#### ANNEX B

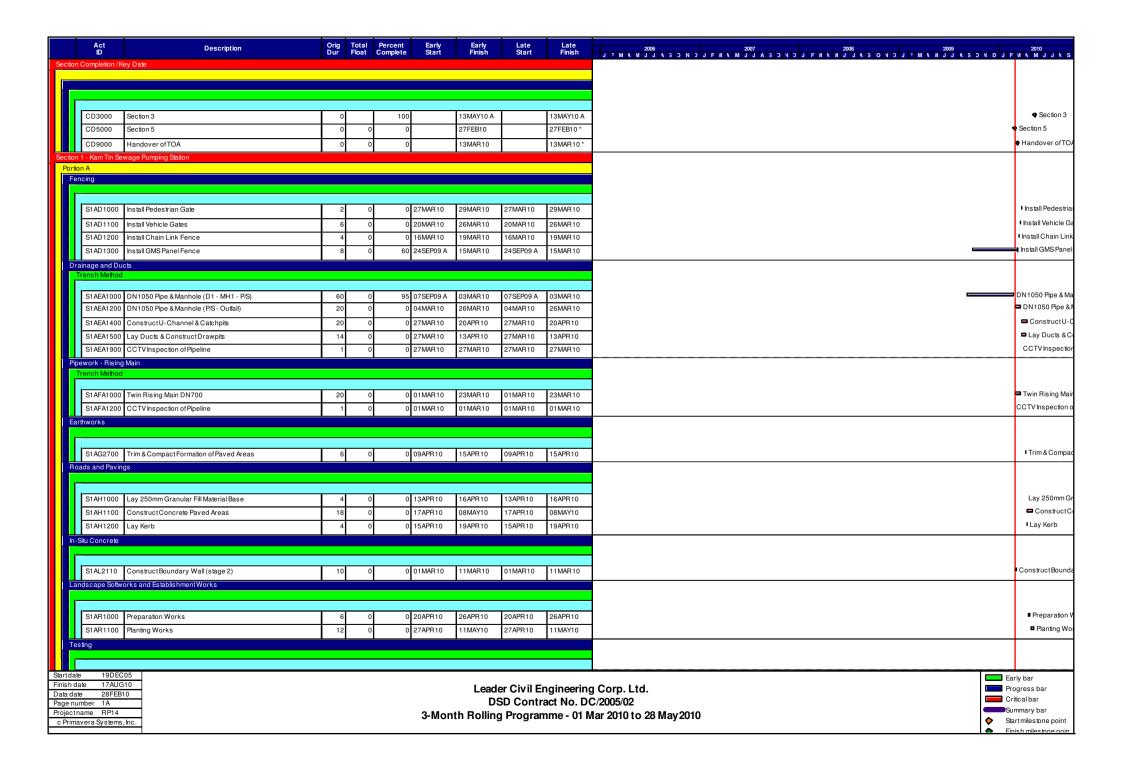
PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

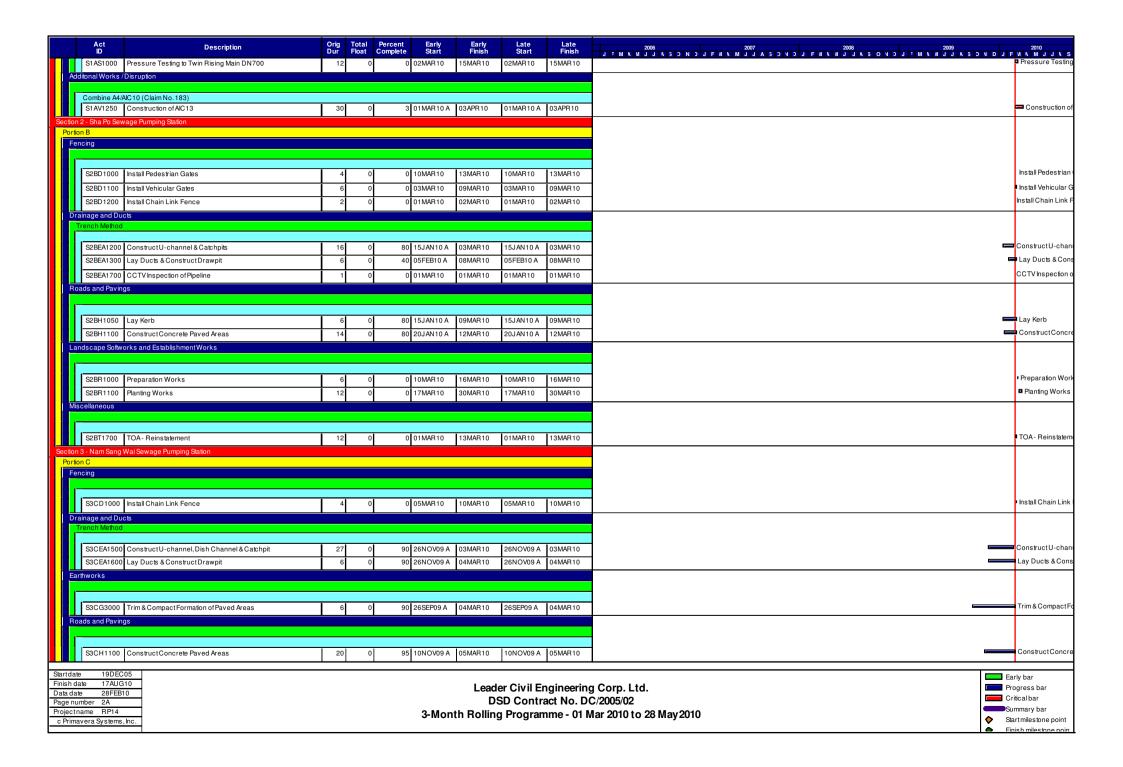
# Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin Nam Sang Wai and Au Tau in Yuen Long Contractor's Site Organization Chart DSD Contract No. DC/2005/02

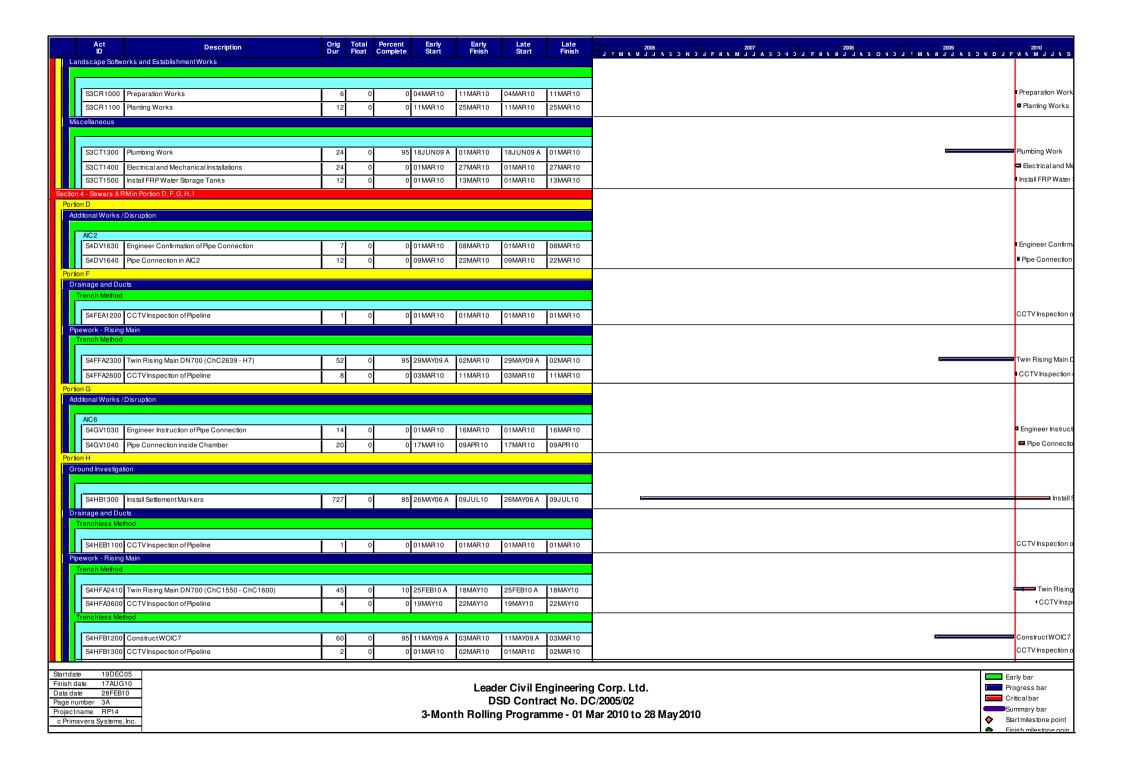


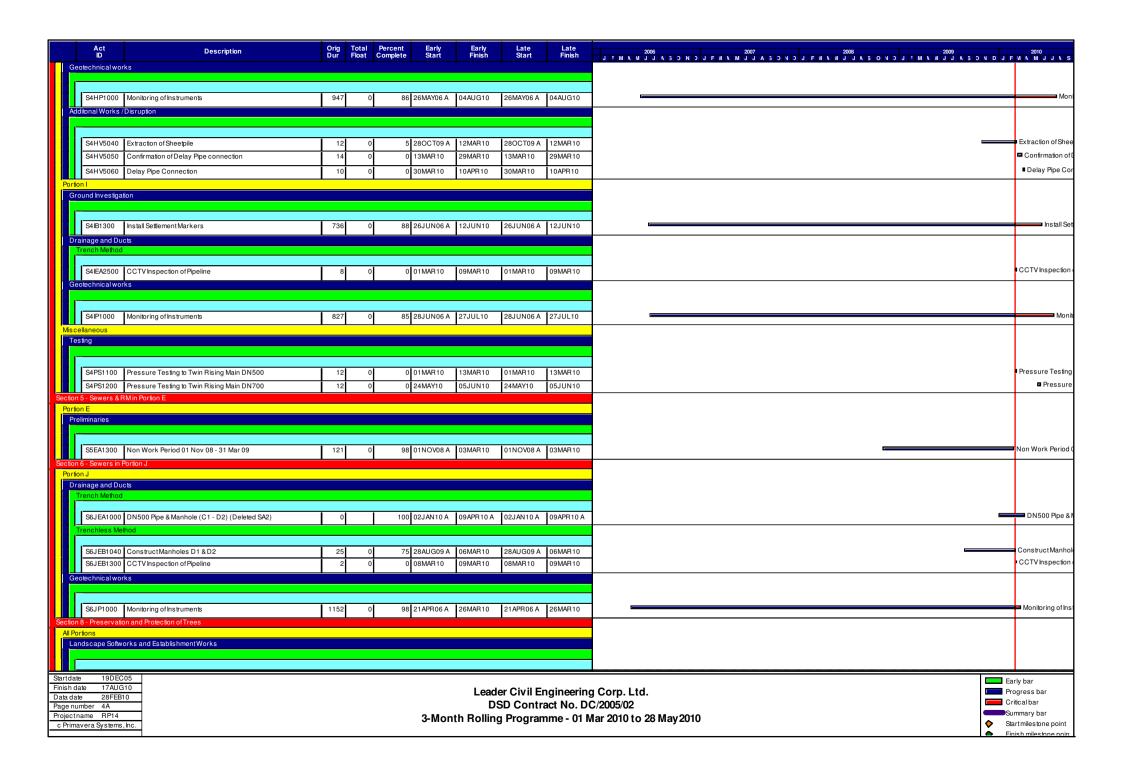


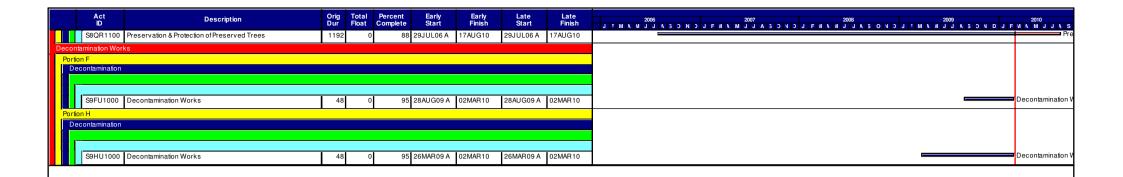
## ANNEX C CONSTRUCTION PROGRAM











Startdate 19DEC05 Finish date 17AUG10 Data date 28FEB10 Page number 5A Projectname RP14 c Primavera Systems, Inc.

Leader Civil Engineering Corp. Ltd.
DSD Contract No. DC/2005/02
3-Month Rolling Programme - 01 Mar 2010 to 28 May 2010





### ANNEX D

PHOTOGRAPHICAL RECORDS - NOISE BARRIER ON-SITE



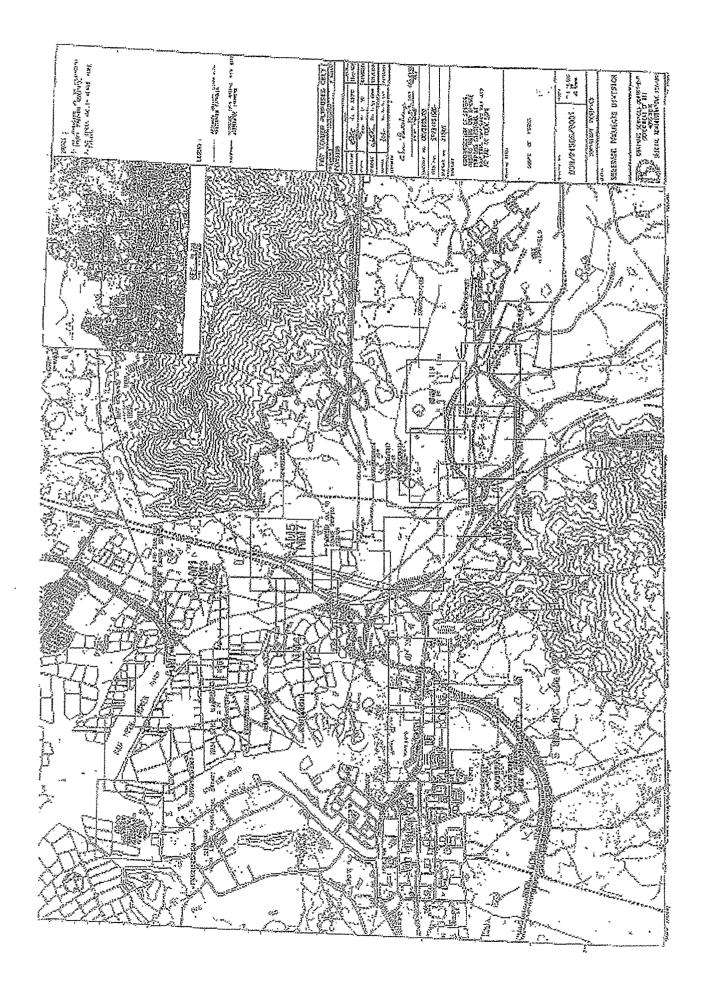


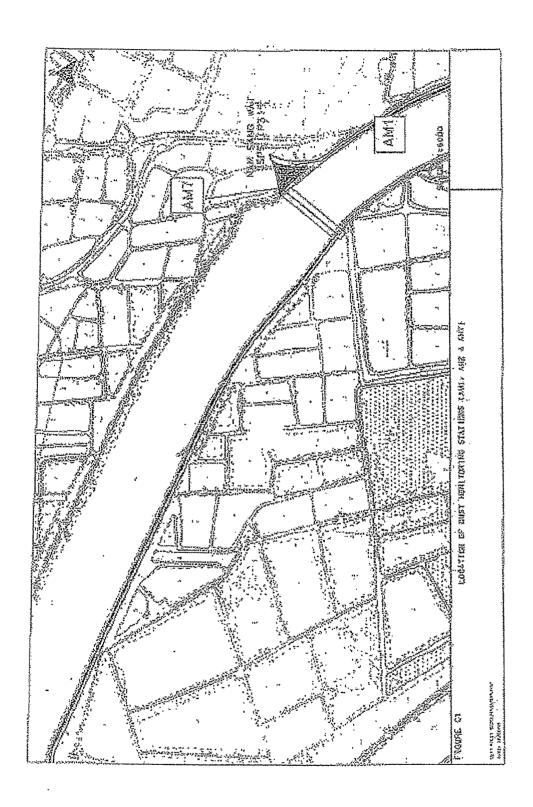


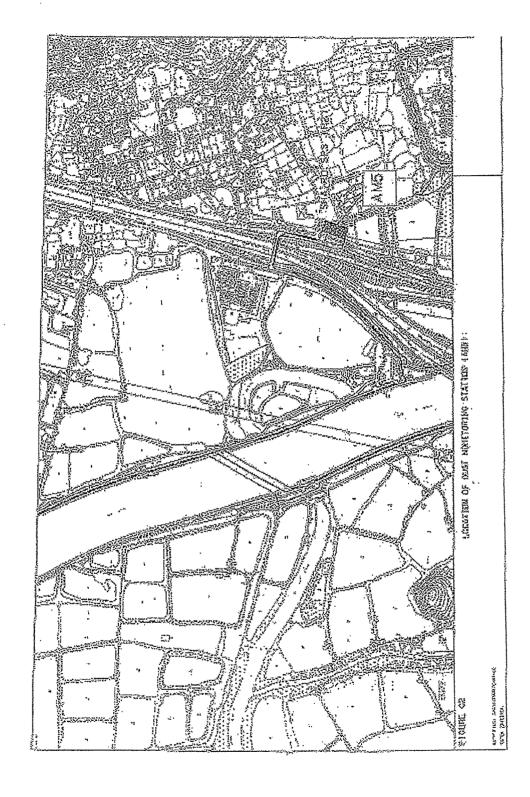


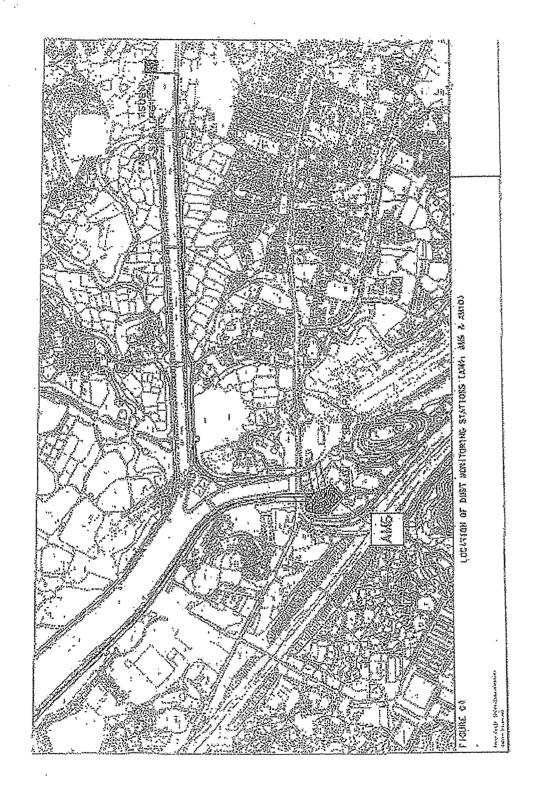


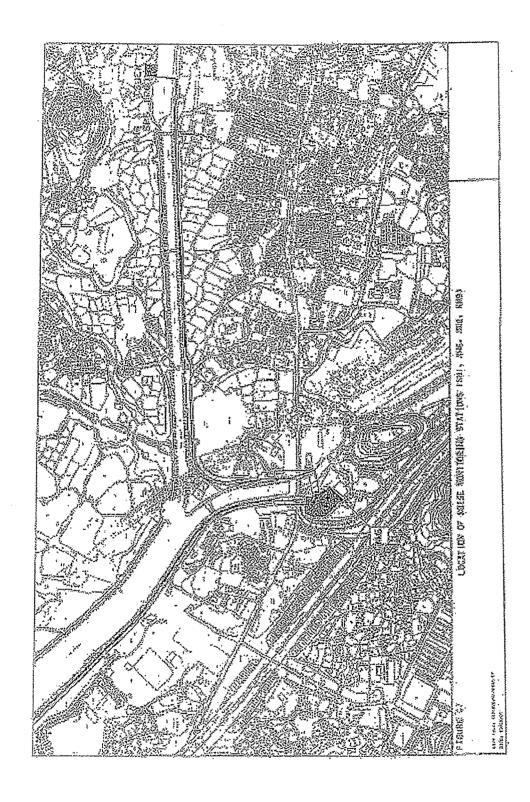
## ANNEX E LOCATIONS OF MONITORING STATIONS

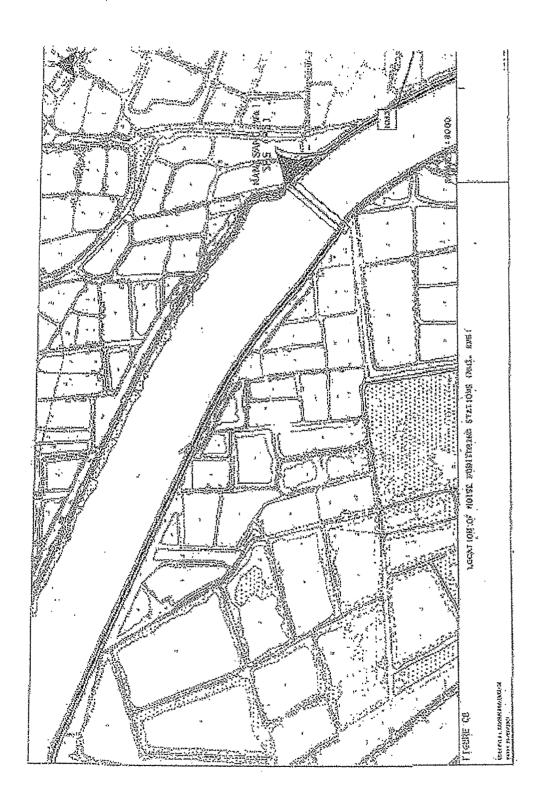


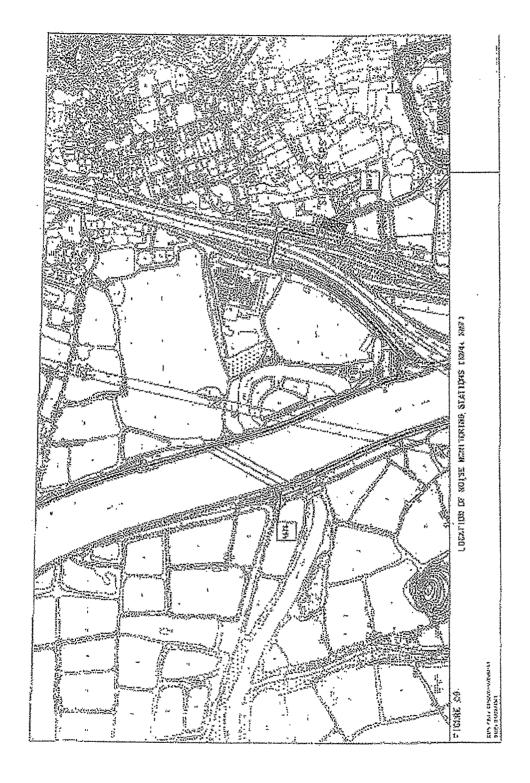














# ANNEX F EVENT AND ACTION PLAN





### **Event and Action Plan for Construction Phase Air Quality**

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



**Event and Action Plan for Construction Phase Air Quality** 

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



Event and Action Pl	an for Construction Noise			
EVENT		AC	CTION	
	ET Leader	IEC	Engineer	Contractor
Limit Level				
Exceedance for one sample	Identify source (s) of exceedance and inform IEC, Contractor and Engineer     Repeat dust measurements to confirm findings     If repeat measurements confirm exceedance ,increase monitoring frequency to daily     Assess efficacy of remedial measures and keep the Contractor, IEC, and Engineer informed     If exceedance stops, inform Contractor and cease additional noise monitoring	Check monitoring data submitted by ET     Check monitoring data trends and     Contractors working methods     Check and confirm Contractors proposed remedial actions and working methods are appropriate	Confirm receipt of notification of exceedance in writing     Remind the Contractor of his contractual obligations and review the Contractor's working methods     Discuss remedial actions with the Contractor and IEC     Inform complainant of actions taken, if necessary	Rectify any unacceptable practice     Liaise with Engineer and IEC to develop appropriate remedial measures to reduce noise impact     Amend working methods and remedial proposals if required by the Engineer or IEC     Implement the agreed remedial actions upon instruction from the Engineer and IEC
Exceedance for two or more consecutive samples	Identify source (s) of exceedance and inform IEC, Contractor and Engineer     Repeat measurements to confirm findings     Increase the monitoring frequency to daily     Discuss remedial actions with IEC, Engineer and the EPD     Assess the efficacy of remedial measures and keep the Contractor informed     If exceedance continues, arrange meeting with Engineer, IEC and Contractor to review working practices and identify further remedial actions     If exceedance stops, inform the Contractor and cease additional monitoring.	<ol> <li>Check monitoring data submitted by ET</li> <li>Check monitoring data trends and         Contractors working methods</li> <li>Discuss with Contractor and Engineer on         possible remedial measures</li> <li>Check and confirm Contractors proposed         remedial measures are appropriate</li> <li>Determine the efficacy of remedial         actions and keep the Engineer informed</li> </ol>	Confirm receipt of notification of exceedance in writing     Remind the Contractor of his contractual obligations and review the Contractor's working methods     Discuss remedial actions with the Contractor and IEC     Ensure remedial measures are properly implemented     If exceedance continues, instruct the Contractor to stop the relevant portion of work until the exceedance is abated     Inform complainant of actions taken, if necessary.	Rectify any unacceptable practice, if possible     Submit proposals for remedial actions to Engineer and IEC within three working days of notification     Discuss and amend remedial actions, if required, by the Engineer and IEC     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     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	Imple Stage	emen e**	tatio		Relevant Legislation & Guidelines
						Des	С	0	Dec	
		CONSTRUCTION PHASE								
		AIR QUALITY - Construction Phase  The following measures are enforceable under the Air Pollution Control (Construction Dust) Regulations  Site boundary and entrance								
3.5	A1	<ul> <li>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;</li> </ul>	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		<b>√</b>			Part III, Clause 13 (c), Air Pollution Control (Construction Dust) Regulations
		Access Road								
3.5	A2	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
		Stockpiling of Dusty Materials								
3.5	А3	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
		Use of vehicles								
3.5	A5	<ul> <li>every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving a construction site;</li> </ul>	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	Imple Stage		tatio		Relevant Legislation & Guidelines
						Des	C	0	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		<b>✓</b>			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		<b>✓</b>			Part IV, Clause 22, Air Pollution Control (Construction Dust) Regulations
3.5	A8	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		<b>✓</b>			Part IV, Clause 24, Air Pollution Control (Construction Dust) Regulations
3.5	А9	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		<b>✓</b>			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		<b>✓</b>			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				Relevant Legislation & Guidelines	
						Des	С	0	Dec	
		NOISE - Construction Phase								
		General Site Clearance – Demolition Works								
4.7.1	B1	<ul> <li>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),</li> </ul>	To control potential noise impacts during site clearance and demolition works	Site wide and throughout the full duration of the construction contract.	The Contractor		<b>✓</b>			Annex 5 of EIAO-TM
		Construction of Sewage Pumping Stations P1, P2 & P3								
4.7.1	B2	<ul> <li>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,</li> </ul>	To minimise potential noise impacts arising during the construction of <i>P1</i> , <i>P2</i> & <i>P3</i>	Site wide and throughout the full duration of the construction contract.	The Contractor		<b>✓</b>			Annex 5 of EIAO-TM
		<ul> <li>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.</li> </ul>	To minimise potential noise impacts arising during the construction of <i>P1</i> , <i>P2</i> & <i>P3</i>	Site wide and throughout the full duration of the construction contract.	The Contractor		<b>✓</b>			Annex 5 of EIAO-TM
		Sewers and Rising Mains using Open Trench Method								
4.7.1	В3	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		<b>✓</b>			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		<b>✓</b>			
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		✓			



EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent								Relevant Legislation & Guidelines
					Des	С	0	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											
В6	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		<b>√</b>			Annex 5 of EIAO-TM			
В7	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		<b>√</b>			Annex 5 of EIAO-TM			
	WATER QUALITY - Construction Phase  No water quality monitoring is required under this study.											
	WASTE - Construction Phase											
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	<b>✓</b>	<b>√</b>			Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste)(General) Regulation (Cap 354), the Land (Miscellaneous Provisions) Ordinance (Cap 28))			
	B6	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.  Sewers and Rising Mains using Pipe Jacking Method  6 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,  Road Pavement and Finishes  9 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,  WATER QUALITY - Construction Phase  No water quality monitoring is required under this study.  WASTE - Construction Phase  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 (Chemical Waste) (General) Regulations); and  • Dumping Licence (Land (Miscellaneous	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.  Sewers and Rising Mains using Pipe Jacking Method  6 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,  Road Pavement and Finishes  87 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,  WATER QUALITY - Construction Phase  No water quality monitoring is required under this study.  WASTE - Construction Phase  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 (Chemical Waste) (General) Regulations); and  • Dumping Licence (Land (Miscellaneous	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.  Sewers and Rising Mains using Pipe Jacking Method  86  • Use of quiet PME which meet the SWLs taken from British Standard, Noise and Vibration Control or Construction Open Sites, BS 5228: Part 1: 1997,  Road Pavement and Finishes  97  • Use of quiet PME which meet the SWLs taken from British Standard, Noise and Vibration Control or Construction Open Sites, BS 5228: Part 1: 1997,  Road Pavement and Finishes  • Use of quiet PME which meet the SWLs taken from British Standard, Noise and Vibration Control or Construction Open Sites, BS 5228: Part 1: 1997,  WATER QUALITY - Construction Phase  D1  The Contractor shall obtain the necessary waste disposal permits from the appropriate authorities for the disposal of chemical and C&D waste, waste plosposal (Chemical Waste Piosposal (Chemical Waste) (General) Regulations); and  • Dumping Licence (Land (Miscellaneous)	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.  Sewers and Rising Mains using Pipe Jacking 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,  Road Pavement and Finishes  • 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,  Road Pavement and Finishes  • 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,  WATER QUALITY - Construction Phase  No water quality monitoring is required under this study.  WASTE - Construction Phase  The Contractor shall obtain the necessary waste disposal permits from the appropriate authorities for the disposal of chemical and C&D waste, Chemical Waste Disposal (Chemical Waste Disposal (Chemical Waste Disposal (Chemical Waste) (General) Regulations); and  • Dumping Licence (Land (Miscellaneous	EM&A Ref Environmental Protection Measures  Recommended Measures & Location of the measure  Main Concerns    Control of the Measures   Concerns	### Recommended Measures & Main Concerns  ### Concerns    Coation of the measure   Coation of the construction contract.   Coation of the construction of the construction of the construction contract.   Coation of the construction contract.   Coation of the construction contract.	EM&A Ref Environmental Protection Measures Recommended Measures & Main Concerns    Coation of the measure   Stage**	EM&A Ref Environmental Protection Measures Recommended Measures & Main Concerns    Coation of the measure   Coation of the moad opening activities.   Coation of the full duration of the construction contract.   Coation of the moad opening activities.   Coation of the moad opening activities.   Coation of the full duration of the construction contract.   Coation of the moad opening activities.   Coation of the moad opening activi			



EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple		tatio		Relevant Legislation & Guidelines
						Des	С	0	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.	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	Storage, Packaging and Labelling of Chemical Waste 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		<b>✓</b>			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	Imple Stage		tatio	n	Relevant Legislation & Guidelines
						Des	С	0	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.  LAND CONTAMINATION- Construction Phase	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		<b>✓</b>			Land (Miscellaneous Provisions) Ordinance (Cap 295) and Works Bureau Technical Circular No. 5/99.
7.5.6		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.	<b>✓</b>				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	С	0	Dec	
		EPD, the contaminated site(s) shall be remediated in accordance with the approved CAR/RAP.								
8.7.1	F1	ECOLOGY - Construction Phase Mitigation Measures Adopted - Avoidance 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		✓			
8.7.2	F2	Mitigation Measures Adopted - Minimisation 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		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.	To schedule noisy construction activities to minimise potential impacts to winter visiting birds.	Work fronts other than identified sections within WBA & WCA (see <i>Figure 8.7a</i> attached) throughout the full duration of the construction contract.	The Contractor		✓			
		The site inspections shall check and report the number of workfronts and implementation of								



EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple		tatio		Relevant Legislation & Guidelines
						Des	С	0	Dec	
8.7.3	F5	mitigation measures (i.e. erection of movable noise barriers with a suitable footing along the sites) in the monthly EM&A reports.  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		<b>✓</b>			
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		<b>√</b>			
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		<b>✓</b>			
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 15m³.	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		<b>✓</b>			
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	Imple Stage		tatio		Relevant Legislation & Guidelines
						Des	С	0	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.	To minimise potential landscape and visual impacts.	To be implemented during the construction phases of the project.	The Contractor		<b>√</b>			
		The first monthly EM&A Report should also report the appearance of the temporary hoarding barriers.								
	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	Des (	mplementation itage**			Relevant Legislation & Guidelines	
						Des	С	0	Dec		
		submitted for approval by the EPD.		project.							
		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									
		<ul> <li>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.</li> <li>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.</li> <li>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.</li> <li>felling of mature trees are kept to a minimum.</li> </ul>									
		EM&A REQUIEMENTS - Construction Phase									
3.7	11	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);	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		<b>✓</b>			Air Pollution Control (Construction Dust) Regulations	
		<ul> <li>Worksite boundary facing Fung Kat Heung (AM5);</li> <li>Worksite boundary facing Scattered House near Route 3 (AM6);</li> </ul>									



EIA* Ref. EM&A R	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	ended Measures & Location of the measure Implementation						Relevant Legislation & Guidelines
					Des	С	0	Dec	
.9.1  2	<ul> <li>at any additional locations, where considered necessary, in agreement with EPD.</li> <li>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.         <ul> <li>(NM3) Scattered House in Nam San Wai (D12);</li> <li>(NM4) Scattered House in Nam San Wai (D11);</li> <li>(NM6) Scattered House near Route 3 (D17);</li> <li>(NM7) Fung Kat Heung (D19);</li> <li>and at any additional locations, where considered necessary, in agreement with EPD</li> </ul> </li> </ul>	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		<b>✓</b>			Noise Control Ordinance



# 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

Items	Aspect	Description of Equipment	Serial No.	Date of Calibration	Date of Next Calibration
1#		Greasby Anderson GMWS2310 High Volume Sampler	0329 (AM1)	9 Jan 10	9 Mar 10
2	Air	Greasby Anderson GMWS2310 High Volume Sampler	(AM5)	1 Feb 10	1 Apr 10
3	1	Greasby Anderson GMWS2310 High Volume Sampler	(AM6)	1 Feb 10	1 Apr 10
4#		Greasby Anderson GMWS2310 High Volume Sampler	1283 (AM7)	2 Oct 09	Upon power supply resume
5	Noise	Bruel & Kjaer 4231 Acoustical Calibrator	2326408	28 Apr 09	28 Apr 10
6	Noise	Bruel & Kjaer 2238 Integrating Sound Level Meter	T212509	28 Apr 09	28 Apr 10

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.
- \*\* Calibration will be done in next reporting month.
- # No power was received, thus equipment could not be re-calibrated.



# ANNEX I METEOROLOGICAL DATA



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

			Total	Lau	Fau Shai	n Weather S	Station
Date		Weather	Total Rain fall (mm)	Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	
Mon	1-Mar-10	Foggy. Moderate east to southeasterly winds.	0	25.9	24	76.2	S/SE
Tue	2-Mar-10	Sunny periods and coastal fog. Moderate southerly winds.	0	25.5	13.7	79	S/SE
Wed	3-Mar-10	Cloudy with mist. Moderate east to southeasterly winds.	0	26.3	17.5	75.7	S/SE
Thu	4-Mar-10	Sunny intervals with fog patches. Moderate south to southeasterly winds.	0.1	24.9	19.5	80.2	S/SE
Fri	5-Mar-10	Moderate southerly winds, fresh over offshore waters at first.	Trace	26.7	17.5	74.2	S/SE
Sat	6-Mar-10	Mainly cloudy with one or two showers.	Trace	25.9	17.7	79	S/SE
Sun	7-Mar-10	Cloudy to overcast with a few rain and mist patches.	4.9	18.8	13.5	87	E/NE
Mon	8-Mar-10	It will be cool. Moderate to fresh east to northeasterly winds	0.5	13.2	12.7	92.5	E/NE
Tue	9-Mar-10	Cloudy and cold. Fresh to strong northerly winds.	2.7	10.3	32.7	70.5	N/NE
Wed	10-Mar-10	Cold, fine and very dry. Fresh northerly winds	0	11.3	16.7	39.5	NE
Thu	11-Mar-10	ine and dry. Moderate east to northeasterly winds.	0	13.5	11.5	57.5	E/SE
Fri	12-Mar-10	Cloudy with one or two rain patches. Moderate easterly winds.	0.4	15.1	8.5	84	E/NE
Sat	13-Mar-10	Cloudy with fog and one or two rain patches. Light to moderate easterly winds.	Trace	19.7	8.2	83.5	Е
Sun	14-Mar-10	Foggy with one or two rain patches.	Trace	23.5	16.5	80	SE
Mon	15-Mar-10	Sunny periods. Light to moderate southeasterly winds.	Trace	25.1	12	80	S/SE
Tue	16-Mar-10	Cloudy. Moderate to fresh northerly winds.	Trace	19.2	18.5	79.2	E/NE
Wed	17-Mar-10	Mainly cloudy. Moderate easterly winds.	0	19.4	10.7	73	E/SE
Thu		Sunny periods with haze. Light to moderate northerly winds	0	21.2	10.7	74	W/SW
Fri	19-Mar-10	Mainly fine.Light to moderate easterly winds.	0	21.1	15.5	65	W/NW
	20-Mar-10	Sunny periods. Visibility relatively low. Light winds.	Trace	21.3	9	71	W
	21-Mar-10	Sunny periods with rather low visibility.	0	22.5	10.5	74.2	Е
Mon	22-Mar-10	Moderate to fresh easterly winds.	0	23.1	13	72	E/NE
Tue	23-Mar-10	Moderate easterly winds, becoming southeasterlies.	0	24.4	15	72.5	SE
Wed	24-Mar-10	Mist patches. Moderate south to southeasterly winds.	Trace	24.2	16	76.5	S/SE
Thu	25-Mar-10	It will be cool and dry . Fresh northerly winds	8.9	16.4	30.2	72	N/NE
Fri	26-Mar-10	Fine and very dry. Fresh easterly winds.	6	18	18.7	43	NE
Sat	27-Mar-10	It will be dry. Moderate easterly winds, fresh later.	0	18	15	61.5	E/NE
Sun	28-Mar-10	Mainly cloudy and very dry. Fresh easterly winds	0	20.4	12.2	52.5	N/NE
Mon	29-Mar-10	Cloudy. One or two light rain patches overnight.	0	18.6	16.5	51	Е
Tue	30-Mar-10	Cloudy. Fresh to strong easterly winds	Trace	20.4	20.2	67.5	Е
Wed	31-Mar-10	Sunny intervals. A couple of light rain patches at first. Moderate easterly winds.	Trace	24.4	15.2	70.5	Е



## ANNEX J

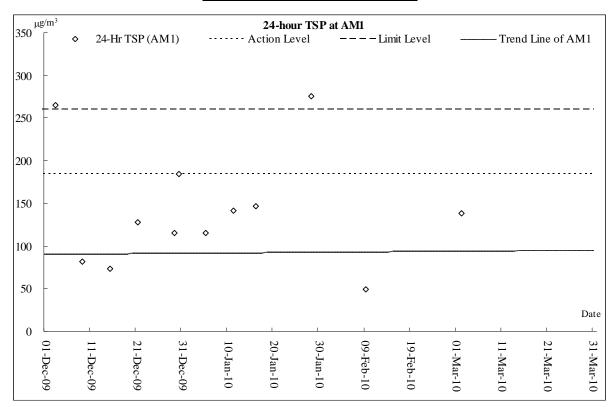
GRAPHICAL PLOTS OF AIR QUALITY AND CONSTRUCTION NOISE MONITORING RESULTS



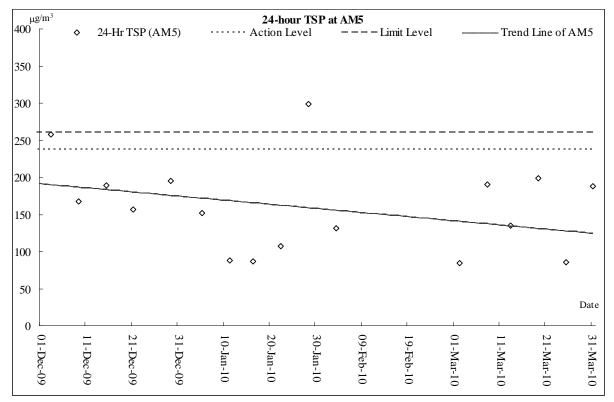
## AIR QUALITY



## **Air Quality Monitoring Results**



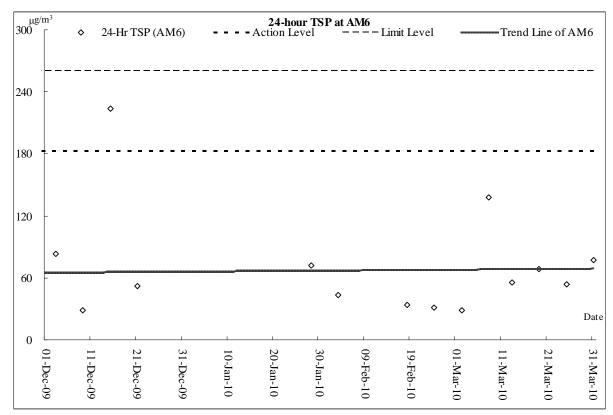
Note: power failure occurred on 22 January, 3, 18, 24 February, 8, 13, 19 and 25 March 2010 therefore no result on plotting is shown.



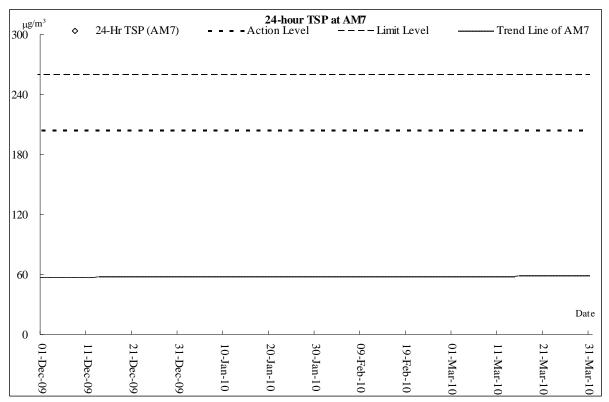
Note: cannot access the monitoring location between 4 and 24 February 2010 due to Lunar New Year holiday landowner's workshop closed therefore no result on plotting is shown.



## **Air Quality Monitoring Results**



Note: power failure occurred on 29 December 2009 and 5, 11, 16, 22 January and 9 February 2010 therefore no result on plotting is shown.



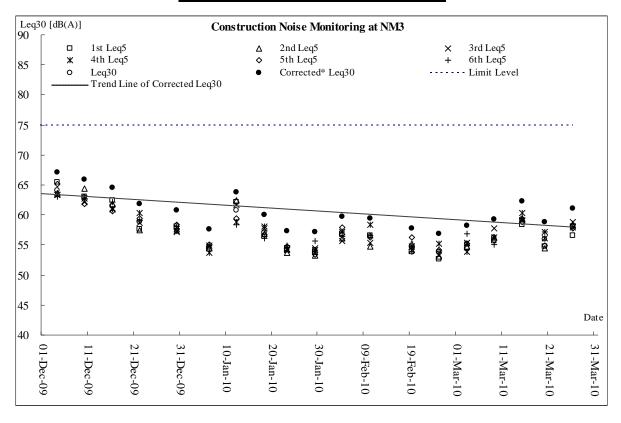
Note: power failure occurred between 16 November 2009 and 31 March 2010, therefore no result on plotting is shown.

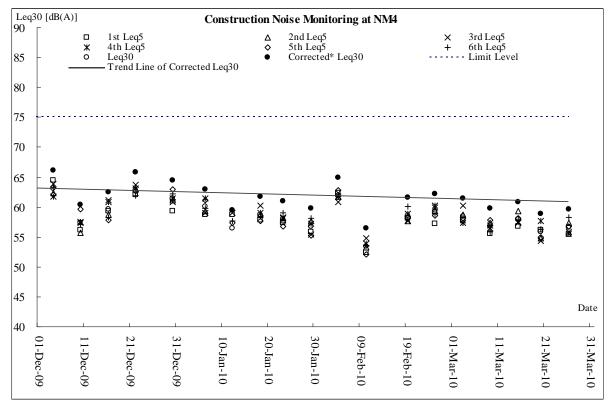


**CONSTRUCTION NOISE** 



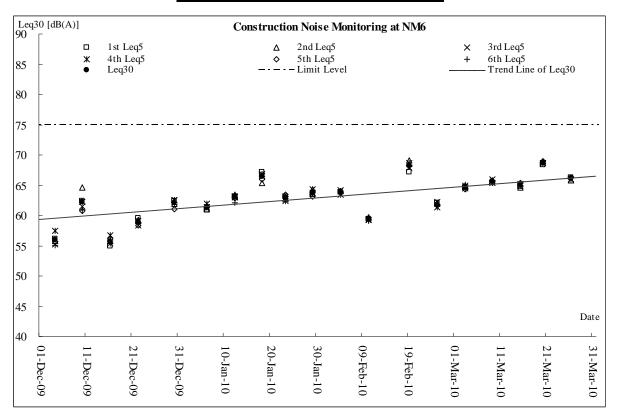
## **Construction Noise Monitoring Results**

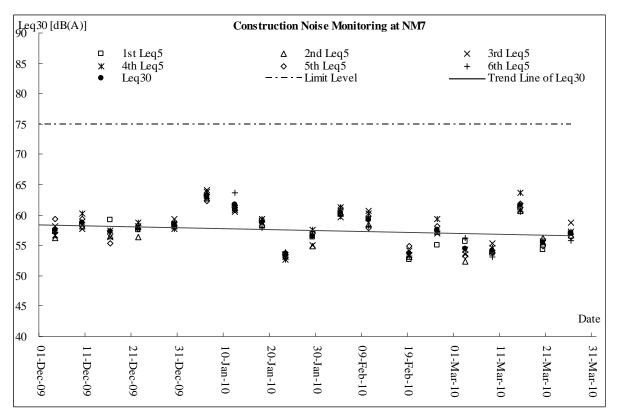






## **Construction Noise Monitoring Results**







## ANNEX K

## PROFORMA OF SITE INSPECTION & IEC AUDIT



Project	DC/2005/02 C Rising Mains Station at Kam Au Tau in Yuer	ige Pumping	Contractor:		Leader Civil Engineering Corp. Ltd							
	Ad rad in raon zong					Babtie Asia Ltd						
Inspected by:	ET Auditor:	Ray (	Cheung	IEC:		Mott MacDonald Hong Kong Ltd						
Dy.	Contractor		_	Environmo	Action-			ironmental				
	Rep:	Edwii	n Leung	Team: Inspection			nsulting (10:00am	)				
	IEC's Rep: Issac Chu				& Time: Checklist			n				
	RE's Rep: WK Tsang				Reference No.:		DSD-AT030310					
General Me	teorological Info	ormation										
Weather	✓Sunny	Fine	Cloudy	Overca	ast [	Drizz	le [	Rain	Hazy			
Temp:	26.9°C											
Humidity:	High (RH	> 90%)	✓ Moderate ( 50%)	(90% > RH :	> [	Low	(RH < 5	0%)				
Wind:	Calm	✓ Light	Breeze	Strong								
Air Quality				Yes	NO	NA	NC	Follow -up	Remarks			
Is hoarding	of not less than 2	.4m provide	d?	$\checkmark$								
Are site vehi	icles traveling wit	thin controlle	d speed limit?	$\checkmark$								
Are site vehi	icles movement o	confined to d	esignated haul	<b>√</b>								
Are public rodust?	oads outside site	exits kept cl	ean and free from	<b>V</b>								
Are haul roa avoid dust g		surfaces wa	tered regularly to	<b>V</b>								
Are there wh	neel washing faci	lities provide	ed at site exits?	$\checkmark$								
Is water spraactivities?	aying used during	g the main d	ust-generating	<b>V</b>								
	avated or stockp impermeable/tarp		materials kept we	t or								
Is exposed a	area of ground co	overed or wa	tered frequently?	<b>✓</b>								
Are load on	vehicles covered	l by clean im	pervious sheeting	J? ✓								
Are vehicles	and equipment	switched off	while not in use?	<b>√</b>								
Are smoky e	emissions from pl	ants/equipm	ent avoided?	$\checkmark$								



## Site Inspection Checklist (SF-17)

Is open burning avoided?	✓					
Observable dust Sources Wind er	osion	✓ NA	1			
Loading	/unloading of materials	Otl	hers			
<b>Construction Noise</b>						
Are the construction works schedul nuisance?	ed to minimize noise	<b>✓</b>				
Are the works or equipment sited to nuisance?	minimize noise	<b>✓</b>				
Are all plant and equipment well ma operating condition?	aintained and in good	<b>√</b>				
Is idle equipment turned off or throt	tled down?	✓				
Is powered mechanical equipment appropriate acoustic materials?	covered or shielded by			<b>✓</b>		
Is silenced equipment used where	appropriate?			<b>✓</b>		
Are noise enclosures or noise barrinecessary?	ers used where			<b>✓</b>		
Does specified equipment has valid	I noise label?			<b>√</b>		
Are Construction Noise Permits (CN inspection?	NPs) available for			<b>√</b>		
Major Noise Source Traffic		✓Co	nstructio	n activit	ies insid	e the site
Constru	ction activities outside of	Oth	ners Nil			



Water Qua	lity & Drainage	Yes	NO	NA	NC	Follow -up	Remarks
Is a wastewater disch	arge license obtained for the Project?	<b>√</b>					
Is site effluent dischar license?	ged in accordance with the discharge	<b>✓</b>					
Is the discharge of silt	y water avoided?	<b>✓</b>					
Is drainage adequate	?	✓					
Is drainage system we	ell maintained?	✓					
Are there temporary cappropriate watercount	itches for runoff discharge into	<b>✓</b>					
Are there sedimentation discharge?	on tanks for settling runoff prior to	<b>√</b>					
Are the sedimentation tanks:	Constructed of pre-formed individual cells?	<b>✓</b>					
	With adequate capacity?	$\checkmark$					
	Free from silt and sediment?	$\checkmark$					
Are there neutralization discharge?	on tanks for concrete batching/mixing			<b>✓</b>			
Are there oil intercept	ors in drainage system?			<b>✓</b>			
Is wheel wash facility	provided at every site exit?	✓					
Are vehicles and plan leaving the site?	t cleaned of earth, mud & debris before	<b>√</b>					
Are wheel washing famaintained?	cilities regularly inspected and	<b>✓</b>					
Are toilets provided or maintained?	n site? If so, are they properly	<b>✓</b>					
Are manholes covered	d and sealed?			$\checkmark$			
Is oil leakage or spilla	ge avoided?	✓					



Waste Management and Potential Land Contamination								
General Refuse:	Are receptacles (rubbish bins) available?	$\checkmark$						
	Is there regular and proper disposal?	$\checkmark$						
	Is proper sorting and recycling implemented?	<b>✓</b>						
Construction Waste:	Is generation of construction waste minimized?	<b>√</b>						
	Is waste sorting implemented on site?	<b>✓</b>						
	Is construction waste reused where practicable?	<b>✓</b>						
	Is construction waste properly disposed of?	<b>√</b>						
	Are disposal records available for inspection?	<b>✓</b>						
Chemical waste/waste oil	Is there designated storage area?	<b>√</b>						
	Is chemical waste stored properly?	<b>✓</b>						
	Is there proper disposal?	✓						
	Is chemical waste license available for inspection?	<b>√</b>						
Excavated Materials	Do excavated materials appear uncontaminated?	<b>√</b>						
	Are appropriate procedures followed if contaminated materials exist?			<b>√</b>				
	Are disposal records available for inspection?	<b>√</b>						
Chemical/Fuel	Is chemical/fuel stored in bounded area?	$\checkmark$						
	Is bund capacity adequate (>110% of the largest tank)?	<b>√</b>						
	Are storage areas lockable?	$\checkmark$						
Is foam, oil, grease nearby drains of se avoided?	e or other objectionable matters in water or ewer	<b>✓</b>						



Follow up

## Observations Recorded in this Site Inspection:

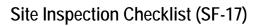


Remark 1: Sand and mud was observed at the public road, the contractor was reminded to clean the dirt.



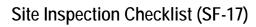
Remark 2: Stagnant water accumulated around the sedimentation tank was observed, the contractor was reminded to clean to prevent mosquito breeding.

Signatures:			
Env. Auditor	Contractor's Representative	IC(E) Auditor	Witness by RE's Representative
Rayer			
Name :Ray Cheung	Name: Edwin Leung	Name:	Name:





Project	& Sewage I	Pumping Stati	Sewers, Rising Mains ion at Kam Tin, Nam	Contr	actor:		Leader Ci	o. Ltd				
	Sang Wai and Au Tau in		ad in Tuen Long		eer:		Babtie Asia Ltd					
Inspected by:	ET Auditor: Ben Tam			IEC:			Mott MacDonald Hong Kong Ltd					
	ET Auditor	<u>.                                    </u>	вен тапт	Environmental Team:			Action-United Environmental Services & Consulting 9 March 2010 (10:00am)					
	Contractor Re	-	Edwin Leung									
	IEC's Rep:			Checklist Reference			DSD-AT09					
	RE's Rep:		WK Tsang	No.:								
General Meteor	ological Informati	ion										
Weather	Sunny	Fine	Cloudy	✓	Overcast		Drizzle		Rain	Hazy		
Temp:	11 °C											
Humidity:	High (RH	> 90%)	✓ Moderate (9	0% > RH :	> 50%)		Low (RH	< 50%)				
Wind:	Calm	✓ Light	Breeze		Strong							
Air Quality					Yes	NO	NA	NC	Follow- up	Remarks		
Is hoarding of no	ot less than 2.4m pr	rovided?			<b>✓</b>							
Are site vehicles	traveling within co	ntrolled speed lin	nit?		✓							
Are site vehicles	movement confine	ed to designated I	haul roads?		✓							
Are public roads	outside site exits k	kept clean and fre	ee from dust?		<b>✓</b>							
Are haul roads a	and unpaved surfac	es watered regul	arly to avoid dust generation	?	<b>✓</b>							
Are there wheel	washing facilities p	provided at site ex	kits?		<b>✓</b>							
Is water spraying	g used during the m	nain dust-generat	ing activities?		<b>✓</b>							
Are the excav impermeable/tarp		e of dusty ma	iterials kept wet or cove	red by	<b>V</b>							
Is exposed area	of ground covered	or watered frequ	ently?		✓							
Are load on vehic	cles covered by cle	ean impervious sh	neeting?		✓							
Are vehicles and	d equipment switche	ed off while not in	use?		<b>✓</b>							
Are smoky emiss	sions from plants/e	quipment avoided	d?		✓							
Is open burning	avoided?				✓							
Observable dust	sources	Wind erosion	1		✓NA	<u>.</u>						
		Loading/unlo	ading of materials		Oth	ners _						
Construction N	oise											
Are the construct	tion works schedul	ed to minimize no	oise nuisance?		✓							
Are the works or	equipment sited to	minimize noise	nuisance?		✓							
Are all plant and	equipment well ma	aintained and in g	good operating condition?		✓							
Is idle equipmen	t turned off or throt	tled down?			✓							
Is powered mechanical equipment covered or shielded by appropriate acoustic materials?							<b>√</b>					
Is silenced equip	oment used where	appropriate?					$\checkmark$					
Are noise enclos	sures or noise barri	ers used where n	necessary?				$\checkmark$					
Does specified equipment has valid noise label?							<b>√</b>					
Are Construction	Noise Permits (Cl	NPs) available for	r inspection?				✓					
Major Noise Sou	ırce	Traffic			✓ Co	nstructior	activities ins	ide the site	)			
		Construction	activities outside of site		Oth	ners <u>N</u>	Nil					





Water Qua	lity & Drainage	Yes	NO	NA	NC	Follow- up	Remarks
Is a wastewater discharge	license obtained for the Project?	<b>✓</b>					
Is site effluent discharged i	n accordance with the discharge license?	<b>√</b>					
Is the discharge of silty wat	er avoided?	<b>√</b>					
Is drainage adequate?		<b>✓</b>					
Is drainage system well ma	intained?					<b>✓</b>	Remarks 1
Are there temporary ditches	s for runoff discharge into appropriate watercourse?	<b>✓</b>					
Are there sedimentation tar	nks for settling runoff prior to discharge?	<b>√</b>					
Are the sedimentation tank	s: Constructed of pre-formed individual cells?	<b>✓</b>					
	With adequate capacity?	<b>✓</b>					
	Free from silt and sediment?	<b>✓</b>					
Are there neutralization tan	ks for concrete batching/mixing discharge?			<b>√</b>			
Are there oil interceptors in	drainage system?			<b>√</b>			
Is wheel wash facility provide	ded at every site exit?	<b>✓</b>					
Are vehicles and plant clea	ned of earth, mud & debris before leaving the site?	<b>✓</b>					
Are wheel washing facilities	s 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 I	Potential Land Contamination						
General Refuse:	Are receptacles (rubbish bins) available?	<b>✓</b>					
	Is there regular and proper disposal?	<u> </u>					
	Is proper sorting and recycling implemented?	<u> </u>					
Construction Waste:	Is generation of construction waste minimized?	<u> </u>					
	Is waste sorting implemented on site?	<b>✓</b>					
	Is construction waste reused where practicable?	<u> </u>					
	Is construction waste properly disposed of?	<u> </u>					
	Are disposal records available for inspection?	<u> </u>					
Chemical waste/waste oil	Is there designated storage area?	<u> </u>					
	Is chemical waste stored properly?	<b>─</b>					
	Is there proper disposal?	<u> </u>					
	Is chemical waste license available for inspection?	<u> </u>					
Excavated Materials	Do excavated materials appear uncontaminated?	<u> </u>					
	Are appropriate procedures followed if contaminated materials exist?			<b>✓</b>			
	Are disposal records available for inspection?	<b>✓</b>					
Chemical/Fuel	Is chemical/fuel stored in bounded area?	<u> </u>					
	Is bund capacity adequate (>110% of the largest tank)?	<b>✓</b>					
	Are storage areas lockable?	<b>✓</b>					
Is foam, oil, grease or othe avoided?	r objectionable matters in water or nearby drains of sewer	<b>✓</b>					



### Follow up

Signatures:

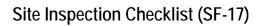
Sand and mud at the public road was cleared. Stagnant water accumulated around the sedimentation tank was cleared.

## Observations Recorded in this Site Inspection:



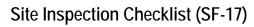
Remark 1: Stagnant water cumulated at Nam San Wai Pumping Station, the contractor was reminded to clean to prevent mosquito breeding.

Oignatures.			
Env. Auditor	Contractor's Representative	IC(E) Auditor	Witness by RE's Representative
35			
Name :Ben Tam	Name: Edwin Leung	Name:	Name:





Project	& Sewage Pum	truction of Sewers	Kam Tin, Nam	Contra	actor:		Leader Civil Engineering Corp. Ltd		o. Ltd		
	Sang Wai and Au	Tau in Yuen Long		Engin			Babtie As	Babtie Asia Ltd			
Inspected by:	ET Auditor	Pon T	'am	IEC:			Mott MacDonald Hong Kong Ltd				
	ET Auditor:	Ben T	am	Enviro	onmental <sup>-</sup>	Team:	Action-Ur	ited Env	rironmental	Services &	
	Contractor Rep:	Edwin L	.eung	Inspe	ction Date	& Time:	Consultin 16 March		00am)		
	IEC's Rep:				dist Refer		DSD-AT16				
	RE's Rep:	WK Ts	ang	No.:							
General Meteor	ological Information										
Weather	Sunny	√ Fine	Cloudy		Overcast		Drizzle		Rain	Hazy	
Temp:	20 °C										
Humidity:	High (RH > 90	%)	✓ Moderate (9	0% > RH :	> 50%)		Low (RH	< 50%)			
Wind:	Calm	✓ Light	Breeze		Strong						
Air Quality					Yes	NO	NA	NC	Follow- up	Remarks	
Is hoarding of no	ot less than 2.4m provid	led?			<b>√</b>						
Are site vehicles	traveling within control	led speed limit?			✓						
Are site vehicles	movement confined to	designated haul roads	s?		✓						
Are public roads	outside site exits kept	clean and free from du	st?		✓						
Are haul roads a	and unpaved surfaces w	vatered regularly to avo	oid dust generation?	?	✓						
Are there wheel washing facilities provided at site exits?					<b>✓</b>						
Is water spraying used during the main dust-generating activities?					<b>✓</b>						
Are the excavated or stockpile of dusty materials kept wet or cove impermeable/tarpaulin sheet?			red by	<b>√</b>							
Is exposed area	of ground covered or w	vatered frequently?			<b>✓</b>						
Are load on vehic	cles covered by clean i	mpervious sheeting?			<b>✓</b>						
Are vehicles and	d equipment switched of	ff while not in use?			✓						
Are smoky emiss	sions from plants/equip	ment avoided?			✓						
Is open burning a	avoided?				✓						
Observable dust	sources	Wind erosion			✓NA						
		Loading/unloading of n	naterials		Oth	ners _					
Construction No	oise										
Are the construct	tion works scheduled to	o minimize noise nuisa	nce?		✓						
Are the works or	equipment sited to mir	nimize noise nuisance?	•		✓						
Are all plant and	equipment well mainta	ined and in good opera	ating condition?		✓						
Is idle equipment	t turned off or throttled	down?			✓						
Is powered mech materials?	hanical equipment cove	red or shielded by app	propriate acoustic				<b>✓</b>				
Is silenced equip	oment used where appro	opriate?					✓				
Are noise enclos	sures or noise barriers u	used where necessary	?				$\checkmark$				
Does specified e	equipment has valid nois	se label?					✓				
Are Construction	Noise Permits (CNPs)	available for inspection	n?				✓				
Major Noise Sou	ırce	Traffic			✓Co	nstruction	activities ins	ide the site			
		Construction activities	outside of site		Oth	ners <u>N</u>	Jil				





Water Qual	ity & Drainage	Yes	NO	NA	NC	Follow- up	Remarks
Is a wastewater discharge I	icense obtained for the Project?	<b>✓</b>					
Is site effluent discharged in	n accordance with the discharge license?	✓					
Is the discharge of silty wat	er avoided?	<b>✓</b>					
Is drainage adequate?		<b>✓</b>					
Is drainage system well ma	intained?					<b>√</b>	Remarks 1
Are there temporary ditches	s for runoff discharge into appropriate watercourse?	<b>✓</b>					
Are there sedimentation tar	nks for settling runoff prior to discharge?	<b>✓</b>					
Are the sedimentation tank	s: Constructed of pre-formed individual cells?	<b>✓</b>					
	With adequate capacity?	<b>✓</b>					
	Free from silt and sediment?	<b>✓</b>					
Are there neutralization tan	ks for concrete batching/mixing discharge?			✓			
Are there oil interceptors in	drainage system?			✓			
Is wheel wash facility provid	ded at every site exit?	<b>✓</b>					
Are vehicles and plant clea	ned of earth, mud & debris before leaving the site?	<b>✓</b>					
Are wheel washing facilities	regularly inspected and maintained?	<b>✓</b>					
Are toilets provided on site	? If so, are they properly maintained?	<b>✓</b>					
Are manholes covered and sealed?				✓			
Is oil leakage or spillage avoided?							
Waste Management and F	Potential Land Contamination						
General Refuse:	Are receptacles (rubbish bins) available?	<b>✓</b>					
	Is there regular and proper disposal?	<u> </u>					
	Is proper sorting and recycling implemented?	<u> </u>					
Construction Waste:	Is generation of construction waste minimized?	<u> </u>					
	Is waste sorting implemented on site?	<u> </u>					
	Is construction waste reused where practicable?	<u> </u>					
	Is construction waste properly disposed of?	<b>─</b>					
	Are disposal records available for inspection?	<u> </u>					
Chemical waste/waste oil	Is there designated storage area?	<u> </u>					
	Is chemical waste stored properly?	<b>✓</b>					
	Is there proper disposal?	<b>-</b>					
	Is chemical waste license available for inspection?	<b>-</b>					
Excavated Materials	Do excavated materials appear uncontaminated?	<b>✓</b>					
	Are appropriate procedures followed if contaminated materials exist?			✓			
	Are disposal records available for inspection?	✓					
Chemical/Fuel	Is chemical/fuel stored in bounded area?	<b>V</b>					
	Is bund capacity adequate (>110% of the largest tank)?					<b>✓</b>	Remarks 2
	Are storage areas lockable?	✓					
Is foam, oil, grease or other avoided?	objectionable matters in water or nearby drains of sewer	<b>√</b>					



### Follow up

Stagnant water accumulated at Nam San Wai Pumping Station was cleared.

### Observations Recorded in this Site Inspection:

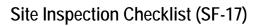


Remark 1: Stockpile without cover was observed at Nam San Wai Road works area, the contractor was reminded to provide mitigation measures to prevent dust generation.



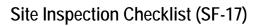
Remark 2: Free standing chemical containers without drip tray was observed, the contractor was reminded to provide drip tray for all chemical containers.

Signatures:			
Env. Auditor	Contractor's Representative	IC(E) Auditor	Witness by RE's Representative
36			
Name :Ben Tam	Name: Edwin Leung	Name:	Name:





Project		ion of Sewers, Rising Mains Station at Kam Tin, Nam	Contra	actor:	r: Leader Civil Engineering Corp. Ltd		p. Ltd			
	Salig Wal allu Au Tau	iii rueli Lolig	Engine	ngineer:		Babtie Asia Ltd				
Inspected by:	ET Auditor:	Ben Tam	IEC:			Mott MacDonald Hong Kong Ltd				
			Enviro	nmental <sup>*</sup>	Team:			vironmenta	I Services &	
	Contractor Rep:	Edwin Leung	Inspec	tion Date	& Time:	Consultin 23 March	_	00am)		
	IEC's Rep:	Issac Chu		list Refer	ence	DSD-AT23	30310			
	RE's Rep:	WK Tsang	No.:							
General Meteore	ological Information									
Weather	Sunny ✓	Fine Cloudy		Overcast		Drizzle		Rain	Hazy	
Temp:	25 °C									
Humidity:	High (RH > 90%)	✓ Moderate (9	0% > RH >	50%)		Low (RH	< 50%)			
Wind:	Calm ✓	Light Breeze		Strong						
Air Quality				Yes	NO	NA	NC	Follow-	Remarks	
Is hoarding of no	t less than 2.4m provided?			<b>V</b>				up		
_	traveling within controlled sp	eed limit?		$\overline{}$						
	movement confined to design			<b>✓</b>						
	outside site exits kept clean							<u> </u>	Remarks 1	
	•	d regularly to avoid dust generation?	)						Remarks 1	
	•									
Are there wheel washing facilities provided at site exits?										
Is water spraying used during the main dust-generating activities?				<b>✓</b>						
impermeable/tarp		ty materials kept wet or cover	red by							
Is exposed area	of ground covered or watered	d frequently?		<b>✓</b>						
Are load on vehic	cles covered by clean imperv	ious sheeting?		<b>✓</b>						
Are vehicles and	equipment switched off while	e not in use?		✓						
Are smoky emiss	sions from plants/equipment a	avoided?		✓						
Is open burning a	avoided?			✓						
Observable dust	sources Wind 6	erosion		✓NA						
	Loadir	ng/unloading of materials		Oth	ners _					
Construction No	oise									
Are the construct	tion works scheduled to minir	mize 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?						<b>~</b>				
Is silenced equip	ment used where appropriate	e?				✓				
Are noise enclos	ures or noise barriers used w	here necessary?				<b>✓</b>				
Does specified e	quipment has valid noise lab	el?				<b>✓</b>				
Are Construction	Noise Permits (CNPs) availa	able for inspection?				<b>✓</b>				
Major Noise Sou	rce Traffic			√Co	nstructior	activities ins	ide the site	<b>:</b>		
	Consti	ruction activities outside of site		Oth	ners N	Nil				





Water Qual	ity & Drainage	Yes	NO	NA	NC	Follow- up	Remarks
Is a wastewater discharge I	icense obtained for the Project?	<b>✓</b>					
Is site effluent discharged in	n accordance with the discharge license?	<b>✓</b>					
Is the discharge of silty wat	er avoided?	✓					
Is drainage adequate?		<b>✓</b>					
Is drainage system well ma	intained?	✓					
Are there temporary ditches	s for runoff discharge into appropriate watercourse?	<b>✓</b>					
Are there sedimentation tar	nks for settling runoff prior to discharge?	✓					
Are the sedimentation tank	s: Constructed of pre-formed individual cells?	✓					
	With adequate capacity?	<b>✓</b>					
	Free from silt and sediment?	<b>✓</b>					
Are there neutralization tan	ks for concrete batching/mixing discharge?			✓			
Are there oil interceptors in	drainage system?			✓			
Is wheel wash facility provid	ded at every site exit?	✓					
Are vehicles and plant clea	ned 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 F	Potential Land Contamination						
General Refuse:	Are receptacles (rubbish bins) available?	<b>✓</b>					
	Is there regular and proper disposal?	<u> </u>					
	Is proper sorting and recycling implemented?	<u> </u>					
Construction Waste:	Is generation of construction waste minimized?	<u> </u>					
	Is waste sorting implemented on site?	<u> </u>					
	Is construction waste reused where practicable?	<u> </u>					
	Is construction waste properly disposed of?	<b>✓</b>					
	Are disposal records available for inspection?	<u> </u>					
Chemical waste/waste oil	Is there designated storage area?	<u> </u>					
	Is chemical waste stored properly?	<b>✓</b>					
	Is there proper disposal?	<b>✓</b>					
	Is chemical waste license available for inspection?	<b>✓</b>					
Excavated Materials	Do excavated materials appear uncontaminated?	<b>✓</b>					
	Are appropriate procedures followed if contaminated materials exist?			✓			
	Are disposal records available for inspection?	✓					
Chemical/Fuel	Is chemical/fuel stored in bounded area?					<b>√</b>	Remarks 2
	Is bund capacity adequate (>110% of the largest tank)?					✓	Remarks 2
	Are storage areas lockable?	<b>✓</b>					
Is foam, oil, grease or other avoided?	objectionable matters in water or nearby drains of sewer	✓					



### Follow up

Stockpile at Nam San Wai works area was removed. Free standing chemical containers without drip tray was removed.

### Observations Recorded in this Site Inspection:

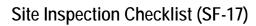


Remark 1: Sand and mud was observed at the public road outside Kam Tin Pumping Station, the contractor was reminded to clean the dirt.



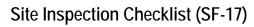
Remark 2: Free standing chemical containers without drip tray was observed, the contractor was reminded to provide drip tray for all chemical containers.

Signatures:			
Env. Auditor	Contractor's Representative	IC(E) Auditor	Witness by RE's Representative
Name :Ben Tam	Name: Edwin Leung	Name:	Name:





Project	& Sewage Pur	mping Station	wers, Rising Mains at Kam Tin, Nam	Contr	actor:		Leader Civil Engineering Corp. Ltd		o. Ltd		
	Sang Wai and A	u rau iii rueii L	ong	Engin			Babtie Asia Ltd  Mott MacDonald Hong Kong Ltd				
Inspected by:	ET Auditor		Pon Tom	IEC:							
	ET Auditor:		Ben Tam	Envir	onmental <sup>-</sup>	Геат:	Action-Ur	ited Env	/ironmenta	Services &	
	Contractor Rep:	Edv	win Leung	Inspe	ction Date	& Time:	Consultin 30 March		00am)		
	IEC's Rep:				klist Refere		DSD-AT30				
	RE's Rep:	W	K Tsang	No.:							
General Meteor	ological Information										
Weather	Sunny	√Fine	Cloudy		Overcast		Drizzle		Rain	Hazy	
Temp:	19 °C										
Humidity:	High (RH > 9	0%)	✓ Moderate (9	0% > RH :	> 50%)		Low (RH	< 50%)			
Wind:	Calm	✓ Light	Breeze		Strong						
Air Quality					Yes	NO	NA	NC	Follow- up	Remarks	
Is hoarding of no	ot less than 2.4m provi	ded?			<b>✓</b>						
Are site vehicles	traveling within contro	olled speed limit?			✓						
Are site vehicles	movement confined to	o designated haul	roads?		✓						
Are public roads	outside site exits kept	t clean and free fro	m dust?		<b>✓</b>						
Are haul roads and unpaved surfaces watered regularly to avoid dust generation?				?	<b>✓</b>						
Are there wheel washing facilities provided at site exits?					✓						
Is water spraying used during the main dust-generating activities?					<b>✓</b>						
Are the excavimpermeable/tarp		of dusty materia	ls kept wet or cove	red by	<b>V</b>						
Is exposed area	of ground covered or	watered frequently	?		✓						
Are load on vehic	cles covered by clean	impervious sheetir	ng?		✓						
Are vehicles and	I equipment switched of	off while not in use	?		✓						
Are smoky emiss	sions from plants/equip	pment avoided?			✓						
Is open burning a	avoided?				✓						
Observable dust	sources	Wind erosion			✓NA						
		Loading/unloading	g of materials		Oth	ners _					
Construction No	oise										
Are the construct	tion works scheduled	to minimize noise i	nuisance?		✓						
Are the works or	equipment sited to mi	inimize noise nuisa	ance?		✓						
Are all plant and	equipment well mainta	ained and in good	operating condition?		✓						
Is idle equipment	t turned off or throttled	d down?			✓						
Is powered mech materials?	hanical equipment cov	rered or shielded by	y appropriate acoustic				<b>~</b>				
Is silenced equip	ment used where app	propriate?					✓				
Are noise enclos	sures or noise barriers	used where neces	ssary?				✓				
Does specified e	equipment has valid no	oise label?					✓				
Are Construction	Noise Permits (CNPs	s) available for insp	ection?				✓				
Major Noise Sou	ırce	Traffic			✓Co	nstruction	activities ins	ide the site	)		
		Construction activ	vities outside of site		Oth	ners <u>N</u>	Nil				





Water Qual	ity & Drainage	Yes	NO	NA	NC	Follow- up	Remarks
Is a wastewater discharge I	icense obtained for the Project?	<b>✓</b>					
Is site effluent discharged in	n accordance with the discharge license?	✓					
Is the discharge of silty wat	er avoided?	✓					
Is drainage adequate?		<b>✓</b>					
Is drainage system well ma	intained?	✓					
Are there temporary ditches	s for runoff discharge into appropriate watercourse?	✓					
Are there sedimentation tar	nks for settling runoff prior to discharge?	✓					
Are the sedimentation tank	s: Constructed of pre-formed individual cells?	✓					
	With adequate capacity?	<b>✓</b>					
	Free from silt and sediment?	✓					
Are there neutralization tan	ks for concrete batching/mixing discharge?			✓			
Are there oil interceptors in	drainage system?			✓			
Is wheel wash facility provide	ded at every site exit?	✓					
Are vehicles and plant clea	ned of earth, mud & debris before leaving the site?	<b>✓</b>					
Are wheel washing facilities	s 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 av	oided?	<b>✓</b>					
Waste Management and F	Potential Land Contamination						
General Refuse:	Are receptacles (rubbish bins) available?	<b>✓</b>					
	Is there regular and proper disposal?	<b>✓</b>					
	Is proper sorting and recycling implemented?	<b>✓</b>					
Construction Waste:	Is generation of construction waste minimized?	<b>✓</b>					
	Is waste sorting implemented on site?	<b>✓</b>					
	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?	<b>✓</b>					
	Are appropriate procedures followed if contaminated materials exist?			✓			
	Are disposal records available for inspection?	<b>✓</b>					
Chemical/Fuel	Is chemical/fuel stored in bounded area?	<b>✓</b>					
	Is bund capacity adequate (>110% of the largest tank)?	✓					
	Are storage areas lockable?	<b>✓</b>					
Is foam, oil, grease or other avoided?	r objectionable matters in water or nearby drains of sewer	<b>√</b>					



D	0	n	12	r	ks	
ı	c		ı	ш	ŊΘ	

## Follow up

Sand and mud outside the Kam Tin Pumping Station was cleared.

Free standing chemical containers without drip tray was removed.

## Observations Recorded in this Site Inspection:

No environmental issue was observed during the site inspection.

Signatures:			
Env. Auditor	Contractor's Representative	IC(E) Auditor	Witness by RE's Representative
Name :Ben Tam	Name: Edwin Leung	Name:	Name: