#### **JOB NO.: TCS00310/06**

VISION NO.: 2 DRAINAGE SERVICES DEPARTMENT (DSD) CONTRACT NO.: DC/2005/02

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

BI-ANNUAL ENVIRONMENTAL MONITORING & AUDIT (EM&A) SUMMARY REPORT FOR October 2009 to March 2010 (No. 8) (Designated Elements)

#### **PREPARED FOR**

LEADER CIVIL ENGINEERING CORPORATION LIMITED

#### **Quality Index**

Date	Reference No.		
30 September 2010	TCS00310/06/600/R1129v2		
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Rev. No.	Date	Remarks
1	15 Sep 2010	First Submission
2	30 Sep 2010	Amended against IEC's comments on 24 Sep 2010

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# **EXECUTIVE SUMMARY**

- ES01. Leader Civil Engineering Corporation Ltd (the Contractor) has been awarded the DSD Contract DC/2005/02 Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long (the Project). The Project requires an Environmental Monitoring and Audit (EM&A) program to be implemented by an Environmental Team (ET) throughout the contract period in compliance with the requirements as stated in the project Environmental Permit (EP-220/2005) and the project's Updated EM&A (Designated Elements) Manual.
- ES02. This is the 8<sup>th</sup> Bi-Annual EM&A Summary Report for October 2009 to March 2010 (No. 8) reporting the environmental impact monitoring and audit (EM&A) conducted from 1 October 2009 to 31 March 2010. EM&A program implemented in this reporting period covered air quality, noise and waste management.

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

ES03. No noise exceedance was recorded in this bi-annual reporting period. However, a total of nine (9) Action/ Limit level exceedances were found in 24-hr TSP at designated Sensitive Receivers during the period. Based on the information and the investigation provided by the Contractor, the exceedance was not considered to be related the project. The record for 24-hr TSP exceedances in this reporting period is list as below.

Station	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	Date of Exceeded	Concentration (µg/m <sup>3</sup> )	Exceedance Level
AM1	184	260	28-Jan-09	276	limit
	237	260	5-Oct-09	278	limit
	237	260	10-Oct-09	307	limit
AN 15	237	260	29-Oct-09	271	limit
AND	267	260	10-Nov-09	267	limit
	267	260	3-Dec-09	257	action
	267	260	28-Jan-09	299	action
AM6	183	260	15-Dec-09	224	action
AM7	204	260	29-Oct-09	304	limit

# **ENVIRONMENTAL SITE INSPECTION**

ES04. In this reporting period, totally 26 weekly joint site inspections were undertaken by representatives of the Engineer, the Contractor and ET to evaluate the site environmental performance. Although total 31 observations were found no non-compliance was identified during the site weekly inspections. Six joint IEC site inspections had been taken in monthly basis, based on the joint IEC site audits to finding, no non-compliance is identified by IEC, however 12 observations were recorded in the reporting period.

# **COMPLAINT LOG**

ES05. No environmental complaint was received in this reporting period.

# NOTIFICATION OF ANY SUMMONS AND SUCCESSFUL PROSECUTION

ES06. There was no environmental summons or prosecution in this reporting period.

#### **REPORTING CHANGES**

ES07. There are no changes to be reported in this reporting period.

#### ADEQUACY OF EM&A

ES08. Based on the data collected and reviewed for the period between October 2009 to March 2010 (as reported herein), it can be confirmed that the monitoring work is effective and that it is generating data to categorically confirm the observation of impact attributable to the works.

# TABLE OF CONTENTS

1.0	Basic Project Information	1
	PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE	1
	CONSTRUCTION PROGRAM FOR THE REPORTING PERIOD	1
	WORKS UNDERTAKEN DURING THE REPORTING PERIOD	1
2.0	Environmental Status	3
	WORK UNDERTAKEN DURING THE REPORTING PERIOD WITH ILLUSTRATIONS	3
	PROJECT DRAWINGS	4
3.0	Summary of EM&A Requirements	5
	MONITORING PARAMETERS	5
	ENVIRONMENTAL QUALITY PERFORMANCE LIMITS	5
	ENVIRONMENTAL MITIGATION MEASURES	5
	ENVIRONMENTAL REQUIREMENTS IN CONTRACT DOCUMENTS	5
4.0	Implementation Status and Environmental Submissions	6
5.0	Monitoring Results	7
	PARAMETERS MONITORED	7
	MONITORING LOCATIONS	7
	Monitoring Frequency and Period.	7
	MONITORING RESULTS AND GRAPHICAL PLOT IN THE REPORTING PERIOD	7
	WEATHER CONDITIONS DURING THE MONITORING PERIOD	8
	OTHER FACTORS INFLUENCING THE MONITORING RESULTS	8
	QA/QC RESULTS AND DETECTION LIMITS	8
6.0	SOLID AND LIQUID WASTE MANAGEMENT STATUS	9
	SOLID AND LIQUID WASTE MANAGEMENT STATUS	9
	ENVIRONMENTAL SITE INSPECTIONS	9
7.0	Report on Non-Compliance (NC), Complaints, Notifications of Summons (NoS	)
	and Successful prosecutions	11
	RECORD OF NON-COMPLIANCE OF ACTION AND LIMIT LEVELS	11
	RECORD OF ENVIRONMENTAL COMPLAINTS RECEIVED	11
	RECORD OF NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTION	11
	REVIEW OF REASONS FOR AND IMPLICATIONS OF NC, COMPLAINTS AND NOS	11
	DESCRIPTION OF FOLLOW-UP ACTIONS TAKEN	11
8.0	Conculsions for the Period October 2009 to March 2010	12

# LIST OF TABLES

- TABLE 1-1
   CONSTRUCTION ACTIVITIES IN THIS REPORTING PERIOD
- TABLE 2-1
   WORKS UNDERTAKEN IN THE REPORTING PERIOD WITH ILLUSTRATIONS OF MITIGATION MEASURES
- TABLE 3-1SUMMARY OF EM&A REQUIREMENTS
- TABLE 3-2
   ACTION AND LIMIT LEVELS FOR AIR QUALITY MONITORING
- TABLE 3-3
   ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE
- TABLE 4-1
   STATUS OF ENVIRONMENTAL LICENSE AND PERMITS IN THE REPORTING PERIOD
- TABLE 5-1
   LOCATIONS OF AIR QUALITY AND CONSTRUCTION NOISE MONITORING STATIONS
- TABLE 5-3
   DETAILS OF 24-HR TSP EXCEEDANCE IDENTIFIED IN REPORTING PERIOD
- TABLE 6-1
   CUMULATIVE QUANTITIES OF WASTES FOR DISPOSAL IN THE REPORTING PERIOD
- TABLE 6-2
   CUMULATIVE QUANTITIES OF WASTE FOR REUSE/RECYCLING IN THE REPORTING PERIOD
- TABLE 6-3DATE OF ENVIRONMENTAL WEEKLY SITE INSPECTION AND MONTHLY AUDIT IN<br/>THE REPORTING PERIOD
- TABLE 7-1SUMMARIES OF EXCEEDANCE IN THE REPORTING PERIOD
- TABLE 7-2
   Summaries of Environmental Complaint in the Reporting Period

Z:Jobs\2006\TCS00310 (DC-2005-02)\600\Impact\DP\Bi-Annual\No.8 Oct 09- Mar 10\R1129v2.doc Action-United Environmental Services and Consulting DSD Contract DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long Bi-Annual EM&A Summary Report for October 2009 to March 2010 (No. 8) AUES (Designated Elements)

 
 TABLE 7-3
 SUMMARIES OF ENVIRONMENTAL SUMMONS AND PROSECUTION IN THE REPORTING PERIOD

#### LIST OF ANNEXES

- ANNEX A PROJECT SITE LAYOUT
- ANNEX B PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE
- ANNEX C CONSTRUCTION PROGRAM
- ANNEX D PHOTOGRAPHICAL RECORDS
- ANNEX E LOCATIONS OF MONITORING STATIONS
- ANNEX F EVENT AND ACTION PLAN
- ANNEX G MITIGATION IMPLEMENTATION SCHEDULE
- ANNEX H MONITORING RESULTS & GRAPHICAL PLOTS OF AIR QUALITY AND NOISE MONITORING RESULTS
- ANNEX I METEOROLOGICAL DATA IN THE REPORTING PERIOD

# **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 8<sup>th</sup> Bi-Annual EM&A Summary Report for October 2009 to March 2010 (No. 8) summarizes the impact monitoring results and audit findings in the reporting period from October 2009 to March 2010.

#### **PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE**

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

#### **CONSTRUCTION PROGRAM FOR THE REPORTING PERIOD**

1.04 A construction program showing the construction work undertaken in this reporting period is shown in Annex C.

#### WORKS UNDERTAKEN DURING THE REPORTING PERIOD

1.05 The major construction work undertaken during the reporting period under the Environmental Permit (EP-220/2005) is shown in **Table 1-1**.

<b>Reporting Month</b>	Construction Activities		
October 2009	<ul> <li>Kam Tin Pumping Station (P1) – Sheet piling and Excavation</li> <li>Sha Po Pumping Station (P2) - Sheet piling, Excavation, Backfilling and Concreting</li> <li>Nam Sang Wai Pumping Station (P3) – Backfilling and Concreting</li> <li>Nam Sang Wai Road (S4) - Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile</li> <li>Pok Wai South Road (S5 and S6) –Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile</li> </ul>		
November 2009	<ul> <li>Kam Tin Pumping Station (P1) – Excavation</li> <li>Sha Po Pumping Station (P2) - Excavation, Backfilling and Concreting</li> <li>Nam Sang Wai Pumping Station (P3) – Backfilling and Concreting</li> <li>Nam Sang Wai Road (S4) - Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile</li> <li>Pok Wai South Road (S5 and S6) –Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile</li> </ul>		
December 2009	<ul> <li>Kam Tin Pumping Station (P1) – Excavation</li> <li>Sha Po Pumping Station (P2) - Excavation, Backfilling and Concreting</li> <li>Nam Sang Wai Pumping Station (P3) – Backfilling and Concreting</li> <li>Nam Sang Wai Road (S4) - Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile</li> <li>Pok Wai South Road (S5 and S6) –Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile</li> </ul>		
January 2010	<ul> <li>Kam Tin Pumping Station (P1) –Excavation, Pipe laying, Backfilling and Concreting</li> <li>Sha Po Pumping Station (P2) - Excavation, Backfilling and Concreting</li> <li>Nam Sang Wai Pumping Station (P3) – Backfilling and Concreting</li> </ul>		

Table 1-1Construction Activities in this Reporting Period

<b>Reporting Month</b>	Construction Activities		
	<ul> <li>Nam Sang Wai Road (S4) - Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile</li> <li>Pok Wai South Road (S5 and S6) –Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile</li> </ul>		
February 2010	• Kam Tin Pumping Station (P1) - Excavation, Pipe laying, Backfilling and Concreting		
	• Sha Po Pumping Station (P2) - Excavation, Backfilling and Concreting		
	• Nam Sang Wai Pumping Station (P3) – Backfilling and Concreting		
	• Nam Sang Wai Road (S4) - Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile		
	• Pok Wai South Road (S5 and S6) –Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile		
March 2010	• Kam Tin Pumping Station (P1) – Excavation, Sheet piling, Backfilling and Concreting		
	• Sha Po Pumping Station (P2) - Excavation, Backfilling and Concreting		
	• Nam Sang Wai Pumping Station (P3) – Backfilling and Concreting		
	• Nam Sang Wai Road (S4) - Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile		
	• Pok Wai South Road (S5 and S6) –Sheet piling, Excavation, Pipe laying, Backfilling, Concreting and Extract sheet pile		

# 2.0 ENVIRONMENTAL STATUS

#### WORK UNDERTAKEN DURING THE REPORTING PERIOD WITH ILLUSTRATIONS

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

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

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

# 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 There are four designated air and four designated construction noise monitoring stations under the EM&A Manual. Descriptions of monitoring stations are summary in **Table 2-2.** Drawings showing the designated monitoring stations are presented in **Annex E**.

Station ID	Nature of Premise	Site Work Description	Station Coordinates
AM1	Site Boundary in NSW		835829 N 822910 E
AM5	Site Boundary in FKH	Excavation;	835121 N 823515 E
AM6	Site Boundary in KT	Sheet piling;	833308 N 823987 E
AM7	Site Boundary in NSW	Backfilling;	836171 N 822586 E
NM3	Village House in NSW	Pipe laying;	835808 N 822817 E
NM4	Village House in NSW	Concreting; and	835282 N 822811 E
NM6	Village House in KT	Extract sheet pile	833288 N 823999 E
NM7	Village House in FKH		835121 N 823495 E

Table 2-2Description of the Monitoring Stations

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

# 3.0 SUMMARY OF EM&A REQUIREMENTS

#### MONITORING PARAMETERS

- 3.01 Environmental monitoring and audit requirements are set out in the Updated EM&A manual. Air quality and construction noise have been identified to be the key monitoring parameters during the impact phase for the construction of the project.
- 3.02 A summary of the impact EM&A requirements for air quality and construction noise as per the project Updated EM&A Manual are shown in Table 3-1.

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

Table 3-1 Summary of Lance A Regultements	Table 3-1	Summary	of EM&A R	equirements
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#### **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 3-2Action and Limit Levels for Air Quality Monitoring

Monitoring Stations	Action Level (µg/m <sup>3</sup> )		Limit Level (µg/m <sup>3</sup> )	
Wolliton ing Stations	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 3-3Action and Limit Levels for Construction Noise

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

#### **Event and Action Plans**

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

#### **ENVIRONMENTAL MITIGATION MEASURES**

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

#### **ENVIRONMENTAL REQUIREMENTS IN CONTRACT DOCUMENTS**

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

#### 4.0 IMPLEMENTATION STATUS AND ENVIRONMENTAL SUBMISSIONS

- 4.01 The implementation status of environmental protection and pollution control/mitigation measures as recommended in the project EIA report is summarized in Table 2-1 and the implementation schedule as shown in Annex G.
- 4.02 A summary status of the permits, licences, and/or notifications on environmental protection for this Project in the reporting period is presented in Table 4-1.

Table 4-1	Status of	Environmental	Licenses	and	Permits	in	the	Reporting
	Period							

Items	Item Description	Licenses/Permit Status	
1	Environmental Permit No.: EP-220/2005	Issued in June 2005	
2	Air Pollution Control (Construction Dust)	Notified EPD on 24 Dec 2005	
3	Chemical Waste Producer Registration	Registration on 27 Jan 2006	
	(5213-528-L2544-08)		
4	Water Pollution Control	Applied to EDD on 7 Eab 2006	
4	(Discharge license No. 1U434/1)	Applied to EFD on 7 1eb 2000	
5	Account for Disposal of Construction Waste	Registration on 27 Dec 2005	
	No. 5004959	Registration on 27 Dec 2005	

# 5.0 MONITORING RESULTS

#### PARAMETERS MONITORED

5.01 The environmental parameters monitoring in the reporting period is compliance with the monitoring requirements as in **Table 3-1**.

#### **MONITORING LOCATIONS**

5.02 There are four designated air quality and four noise monitoring stations under the project EP. For this reporting period, monitoring was carried out at four designated air (AM1, AM5, AM6 & AM7) and four noise (NM3, NM4, NM6 & NM7) monitoring stations/locations. The locations of the designated monitoring stations/locations are shown in Table 5-1 and geographically in Annex E.

Table 5-1Location of Air Quality and Construction Noise Monitoring<br/>Stations/Locations

Air Quality (4 Stations)				
AM1	Worksite boundary facing scattered house in Nam Sang Wai			
AM5	Worksite boundary facing Fung Kat Heung			
AM6	Worksite boundary facing scattered house near Route 3			
AM7	Worksite boundary facing scattered house in Nam Sang Wai			
Construction Noise (	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

- 5.03 The impact 24-hour TSP monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A manual. In this reporting period, a total of **120** air quality monitoring events were carried out at the designated stations. However, there were **44** events of unsuccessful monitoring due to power failure incident and **3** events of unsuccessful monitoring due to closure of site access during Lunar New Year Holiday at Location AM5.
- 5.04 The impact noise monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A manual. A total of **116** monitoring events were carried out in the reporting period.

#### MONITORING RESULTS AND GRAPHICAL PLOT IN THE REPORTING PERIOD

- 5.05 The graphical plot and monitoring results of air quality and construction noise for the reporting period are summarized in **Annex H**.
- 5.06 One monitoring data at Location AM1 on 3 December 2009 was invalidated due to the overrun of the HVS. Nine (9) Action/ Limit level exceedances, namely 2 Action Level and 7 Limit Level exceedances were recorded in 24-hour TSP at designated Sensitive Receivers during the reporting period. Based on the site information provided by the Contractor, investigation reports have been conducted which found that the construction activities undertaken would not create excessive dust problems. Proper and adequate dust mitigation measures had been performed on site in accordance with the EM&A Manual and no complaint was received with respect to the exceedances. In addition, according to monitoring records at Yuen Long Air

Quality Monitoring Station by EPD, relatively high index of Respiratory Suspended Particulates (RSP) was recorded at most of the exceedance days. Therefore, the exceedances were likely due to the local ambient deterioration and it is concluded that the exceedances were not works related under the project. The investigation of exceedance was stipulated in each representative investigation report. The record for 24-hr TSP exceedances in this period is list as below.

Station	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	Date of Exceeded	Concentration (µg/m <sup>3</sup> )	Exceedance Level
AM1	184	260	28-Jan-10	276	limit
	237	260	5-Oct-09	278	limit
	237	260	10-Oct-09	307	limit
A N 15	237	260	29-Oct-09	271	limit
ANIS	237	260	4-Nov-09	267	limit
	237	260	3-Dec-09	257	action
	237	260	28-Jan-10	299	limit
AM6	183	260	15-Dec-09	224	action
AM7	204	260	29-Oct-09	304	limit

 Table 5-3
 Details of 24-hr TSP Exceedance identified in Reporting Period

- 5.07 The notifications and investigation reports were issued and submitted for IEC to close the exceedances.
- 5.08 All construction noise monitoring were complied with the Limit Level and no noise complaint (Action Level) was received in this reporting period.

# WEATHER CONDITIONS DURING THE MONITORING PERIOD

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

#### OTHER FACTORS INFLUENCING THE MONITORING RESULTS

5.10 There were no other noticeable external factors generally affecting the monitoring results in the reporting period.

# QA/QC RESULTS AND DETECTION LIMITS

5.11 Not applicable.

# 6.0 SOLID AND LIQUID WASTE MANAGEMENT STATUS

#### SOLID AND LIQUID WASTE MANAGEMENT STATUS

6.01 The cumulative quantities of waste for disposal or reuse in the reporting period are summarized in **Tables 6-1** and **6-2**.

Table 6-1	Cumulative	Quantities	of	Waste	for	Disposal	in	the	Reporting
	Period								

Type of Weste		Disposal						
Type of waste	Oct 09	Nov 09	<b>Dec 09</b>	Jan 10	Feb 10	Mar 10	Total	Location
C&D Materials (Inert) ('000tons) – Disposed	0.774	2.548	0.883	12.01	0.610	1.415	18.24	Tuen Mun 38 Fill Bank
C&D Materials (Inert) ('000tons) – Reused	0	0	0	0	0	0	0	DSD Contract DC/2005/02
C&D Materials (Non-Inert) ('000tons)	0	0	0	0	0	0	0	NA
Chemical Waste (Litres)	500	0	0	0	0	0	500	NA
General Refuse ('000tons)	0.168	0.091	0.083	0.044	0.053	0.064	0.503	Refuse Collector

 Table 6-2
 Cumulative
 Quantities
 of
 Waste
 for
 Reuse/Recycling
 in
 the

 Reporting Period
 Image: Additional Additaditiona Additaditional Additional Additaditional Additional Addi

Type of Weste	Quantity							Disposal
Type of waste	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Total	Location
Metals for Recycling (kg)	0	2248	4457	0	33700	0	38157	Recycling Company
Paper for Recycling (kg)	0	0	0	0	0	0	0	NA
Plastics for Recycling (kg)	0	0	530	0	0	0	530	NA

6.02 There was no site effluent discharged but an estimated volume of less than 50m<sup>3</sup> of surface runoff was discharged for each reporting month. The sampling of effluent had been carried out by the Contractor in the reporting period.

#### **ENVIRONMENTAL SITE INSPECTIONS**

6.03 In this reporting period, totally 26 weekly joint site inspections were undertaken by representatives of the Engineer, the Contractor and ET to evaluate the site environmental performance. Although total 31 observations were found no non-compliance was identified during the site weekly inspections. 6 joint IEC site inspections had been taken in monthly basis, based on the joint IEC site audits to finding, no non-compliance is identified by IEC, however 12 observations were recorded in the reporting period. Date of inspection and audit are summarized in Table 6-3.

# Table 6-3 Date of Environmental Weekly Site Inspection and Monthly Audit in<br/>the Reporting Period

<b>Reporting Months</b>	Site Inspection Date	Checklist Reference Number		
	6 October 2009	DSD-AT061009		
October 2009	13 October 2009	DSD-AT131009		
0010001 2007	20 October 2009*	DSD-AT201009		
	30 October 2009	DSD-AT301009		
	3 November 2009	DSD-AT031109		
No	10 November 2009	DSD-AT101109		
November 2009	17 November 2009	DSD-AT171109		
	27 November 2009*	DSD-AT271109		
	1 December 2009	DSD-AT011209		
	8 December 2009	DSD-AT081209		
December 2009	15 December 2009	DSD-AT151209		
	22 December 2009*	DSD-AT221209		
	31 December 2009	DSD-AT311209		
	5 January 2010	DSD-AT050110		
January 2010	13 January 2010	DSD-AT130110		
January 2010	19 January 2010	DSD-AT190110		
	27 January 2010	DSD-AT270110		
	3 February 2010	DSD-AT030210		
February 2010	11 February 2010	DSD-AT110210		
rebruary 2010	19 February 2010	DSD-AT190210		
	23 February 2010*	DSD-AT230210		
	3 March 2010	DSD-AT030310		
	9 March 2010	DSD-AT090310		
March 2010	16 March 2010	DSD-AT160310		
	23 March 2010*	DSD-AT230310		
	30 March 2010	DSD-AT300310		

Note: \*Joint IEC monthly site audit

6.04 The weekly/monthly site inspection and audit checklists in this reporting period were presented in the related Monthly EM&A Reports.

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

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

7.01 No project related Action or Limit Level exceedance was recorded in the reporting period. The summary of exceedance was presented in Table 7-1.

		1 8
<b>Reporting Month</b>	Work-Related Exceedance (%) for 24-hour TSP	Work-Related Exceedance (%) for Leq (30mins) Daytime
October 2009	0	0
November 2009	0	0
December 2009	0	0
January 2010	0	0
February 2010	0	0
March 2010	0	0

Table 7-1Summaries of Exceedance in the Reporting Period

#### **RECORD OF ENVIRONMENTAL COMPLAINTS RECEIVED**

7.02 No environmental complaint was received in the reporting period and summary of was presented in Table 7-2.

Table 7-2Summaries of Environmental Complaint in the Reporting Period

Departing Month	Complaint Statistics						
Kepol ting Month	Frequency Cumulative		<b>Complaint Nature</b>				
October 2009	0	0	NA				
November 2009	0	0	NA				
December 2009	0	0	NA				
January 2010	0	0	NA				
February 2010	0	0	NA				
March 2010	0	0	NA				

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

7.03 No notification of summons or prosecution was received in the reporting period. The summary of environmental summons and prosecution was presented in Table 7-3.

Table 7-3	Summaries of Environmental Summons and Prosecution in the
	Reporting Period

Poporting Month	<b>Environmental Summons and Prosecution Statistics</b>						
Reporting Month	Summons	Summons Prosecution					
October 2009	0	0	NA				
November 2009	0	0	NA				
December 2009	0	0	NA				
January 2010	0	0	NA				
February 2010	0	0	NA				
March 2010	0	0	NA				

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

7.04 No NC, complaints or NoS received in the reporting period.

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

7.05 As no non-compliance, complaints or notification of summons was received in this

reporting period, no follow-up action was needed. Minor deficiencies found in the site inspection and audits were in general rectified within the specified deadlines. The Contractor was reminded to implement the environmental mitigation measures as present in Table 2-1 as necessary.

# 8.0 CONCULSIONS FOR THE PERIOD OCTOBER 2009 TO MARCH 2010

8.01 Based on the data collected and reviewed for the period between October 2009 to March 2010 (as reported herein), it can be confirmed that the monitoring work is effective and that it is generating data to categorically confirm the observation of impact attributable to the works.



Annex A

**Project Site Layout** 



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# 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**

	Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	SEP		ост					FY10 IOV				DEC		JAN
Secti	on Completion / k	≺ey Date										1											
													-			1	1	-	1	1	·	1	
											1		1	1	1	1	1	1	1	1	1	1 1	
	CD5000	Section 5	0	0	0		28SEP09		28SEP09*	Section 5	1		1	1	1		1	1	1	1		1	1
	CD9000	Handover of TOA	0	0	0		11DEC09		11DEC09*			i.								♦Ha	ndover of TOA		
Secti Po	on 1 - Kam Tin S tion A	ewage Pumping Station									I	1	1	I	I	I	I	1	L	l	I /	I	
	Drainage and Duo	xts									1		1	1				1					
	Trench Method														1		1	1		1	1 J	1	
	S1AEA100	DN1050 Pipe & Manhole (D1 - MH1 - P/S)	60	0	30	07SEP09A	18NOV09	07SEP09A	18NOV09			÷ 4		;			DN1050	Pipe & Manhole (D1	- MH1 - P/S)	ا ن <b>سس</b>	NIGO Bing & Magh		
	STAEATIC	DN600 Pipe & Manhole (A1 - D1)	70	0	10	U2SEPU9A	12DEC09	02SEP09A	12DEC09	4			i i		I		·	1		. L	lindoo Pipe & Maint	DN1050 E	line & Manhole /P/S
	STAEA120	Construct Flow Mater Chamber (FMC)	30	0	100	28 11 11 09 4	23DEC09	28 IL II 09 A	23DEC09		Construct Flow	v Meter Chamber (FM	ić)	l				1				DIVICOUT	
	SIAEA150	Lay Ducts & Construct Drawpits	14	0	0	24DEC09	11JAN10	24DEC09	11JAN10	-	1	1	l.	I	I	I	I	1	I	l .	1	— — — — — — — — — — — — — — — — — — —	·
	S1AEA190	CCTV Inspection of Pipeline	1	0	0	24DEC09	24DEC09	24DEC09	24DEC09			$\vdash$	+	+	+		1				$\square$		Inspection of Pipelin
Ĩ	Pipework - Rising	g Main																					
											1		1	1	1	1	1	1	1	1			
	S1AFA100	Twin Rising Main DN700	30	0	0	14DEC09	19JAN10	14DEC09	19JAN10	1	1 1		1	1	1	1	1	1	1	1			
	S1AFA120	CCTV Inspection of Pipeline	1	0	0	28SEP09	28SEP09	28SEP09	28SEP09	CCTV Inspecti	on of Pipeline	-	-	-	-	-	-	-	-	-			
											I	1	L	L	L	I	I.	L	I	I	l (	l í	
	S1AL2110	Construct Boundary Wall (stage 2)	20	0	0	14DEC09	07JAN10	14DEC09	07JAN10		1	1	1	1			1	1	1			<u></u>	
1	esting																				<u> </u>		
	·										1		1	1	1	1	1	1	1	1	1	1 1	
	S1AS1000	Pressure Testing to Twin Rising Main DN700	12	0	0	29SEP09	14OCT09	29SEP 09	14OCT09			Pressure	Testing to Twin Risi	ng Main DN700	1		1	1	1	1	1	1	1
7	dditonal Works	/ Disruption						<u> </u>					1	1				1				1	( )
	Combine A4	/AIC10 (Claim No. 183)	_						_		1	1	1	I	I	I	I	1	L	l	1	I /	1
	S1AV1240	Construction of A 1	30	0	70	24A UG09 A	23DEC09	24A UG09 A	23DEC09		1	1	1	1				1				Constructio	on of A1
Secti	S1AV1250	Construction of AIC13	45	0	0	14NOV 09	07JAN10	14NOV09	07JAN10			1	1	1	1						1		
Po	tion B										1		1	1	1		1	1	1	1	1	1	
	encing										Ì	Ì	i.	I	I		I	Ì	I	I	1	i i	l l
	S 2R D 1000	Install Parlostrian Cates	1		0	2205.000	2805.000	22DE.C.00	2805.000		1	1	1	I	I	I	I.		I.		1	I	Install Pedestria
	S2BD1000	Install Pedestran Gates	-4	0	0	23DEC09	20DEC09	23DEC09	20DEC09	-	1	1	1	1	l	l	I.	1	I.	l		Install Vehic	ular Gates
	S2BD1200	Install Chain Link Fence	2	0	0	14DEC09	15DEC09	14DEC09	15DEC09	1					1		1	1	1	1	Install Chain	Link Fence	
	S2BD1300	Install GMS Panel Fence	7	0	0	05DEC09	12DEC09	05DEC09	12DEC09		1		1	1	1	1	1	1			nstall GMS Panel Fe	ance	
Ĩ	Drainage and Duc	ts							•			1		i									
		•									Ì	Ì		I		 		Ì	I		1	I	i i
	S2BEA110	DN900 Pipe & Manhole (P/S - Outfall)	12	0	0	21OCT09	04NOV09	21OCT09	04NOV09	4	1	1			DN900 Pi	pe & Manhole (P/S 	- Outfall)		C2 & Bings (VO)	I	I /	L /	1
	S2BEA115	GCVC3 & Pipes (VO)	20	0	0	05NOV09	2/NOV09	05NOV09	2/NOV09	4	1	1	1	1			1	1	νοσα Fipes (νο)	_	<u> </u>	<u> </u>	Constra
	S2BEA120	COTV Inspection of Pineline	10	0	0	12DEC09	31DEC09	12DEC09	31DEC09	-				1	- CCTV I	nspection of Pipeli	ne		1	1	1 J	1	- Constru
	n-Situ Concrete			I Ö	l °						1	1	1	1	I	i	1	1	1	1	<u> </u>	<u> </u>	<u> </u>
													I										l
	S2BL2000	Construct Boundary Wall	47	0	60	12JAN09 A	20OCT09	12JAN09 A	20OCT09				Construct Bo	undary Wall	1				1		I	I	I
	liscellaneous										1		1										
								-	-				1		1		1		1	 		1 I	
	S2BT1700	TOA - Reinstatement	12	0	0	28NOV 09	11DEC09	28NOV 09	11DEC09					-						TOA	- Reinstatement		
Í	Colitonal Works	Disruption									1		1	1	1	1	1	1	1	1	1	1	
	Revised B/V	Vall Details at SPPS (Claim No. 030)	90		100	29NOV08 A	15SEP.09 A	29NOV08 4	15SEP.09 A	nent Report		· 	I					I		I			
	S2BV1640	Comment / Respond to EDP to the Report	14	0	60	18MAY09 A	03OCT09	18MAY09 A	03OCT09	C	comment / Respond	to EDP to the Repo	rl	L	1	I		1			I. Contraction of the second sec	1	1
	S2BV1660	Arrange Barging Point/Dumping Ground	14	0	30	03AUG09 A	16OCT09	03A UG09 A	16OCT09		1	Arra	inge Barging Point/D	umping Ground		I	I.	1	1	l	1	1	1
	S2BV1670	Application of Marine Dumping Permit	60	0	70	08JUL09 A	07NOV09	08JUL09 A	07NOV 09	_	1		1	1	A	pplication of Marine	Dumping Permit		 	1	1	1	1
	S2BV1690	Issue Marine Dumping Permit from EPD	7	0	0	09NOV09	16NOV09	09NOV09	16NOV09						Possession /	f Barging Point	Issue Marine D	umping Permit from	<u>ЕР</u> — — — — —				
	S2BV1/00 S2BV1710	Echo Sounding at Barging Point & Dumping Ground	14	0	0	04NOV09	11NOV09	04NOV09	11NOV09	1	1		1	- 		Echo So	unding at Barging P	oint & Dumping Gro	und	· 	- I	и I	1   
Start d	ate 19DEC	205	-								*		*	*		*				*			
Finish	date 24FEB	1109								Le	eader Civil	Engineering	Corp. Ltd.									Ea Pr	ogress bar
Pager	umber 1A									0 Manth	DSD Con	tract No. DC	/2005/02									Cri	tical bar.
o Pri	and the annul									3-worth	noming Pro	ogramme - 3	www.iat 29 56	sh 2009								St	art milestone point

	Act ID	Descr iption	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	SEP		ост				I N	FY10 IOV				DEC		JAN
	S2BV1730	Marine Dumping Commencement	1	0	(	17NOV09	17NOV 09	17NOV 09	17NOV09						· · · · · · ·	····	Marine Dump	ing Commencemen	4				
	S2BV2130	Backfill & Bemove 1st Laver of Waling & Strut	20	0	50	28AUG09A	10OCT09	28AUG09 A	10OCT09		Bac	kfill & Remove 1:	st Layer of Waling &	Strut	1	1		1	1	1			
	S2BV2140	Modify Cofferdam & Extract Sheetnile	8			1200709	2000,709	1200,709	2000,709		=		Modify Coffere	dam & Extract She	etpile	1			1				
	CORVOIE	Construct Wall Stom Ood Lift for Boy 1				2100700	20000100	2100700	2000 100					Cor	struct Wall Stem 2n	nd lift for Bay 1 —							
	6 2B V 2130	Construct Wall Stem 2nd lift for Bay 1				2100109	001/01/00	2100109	001/01/00						-	Construct Wall	Stem 2nd lift for Bay	2					
	02012100	Construct Wall Otem Ond VA for Day 2				40100103	401101/00	401/01/00	401101/00						-		Construct	Wall Stom 2nd lift f	ior Bay 3				
	S2BV21/0	Construct Wall Stem 2nd lift for Bay 3	8	0		10NOV09	18NOV09	10NOV09	18NOV09								Construct	wail Stell 2nd Int	u bay 3	life fan Dan i d			
	S2BV2180	Construct Wall Stem 2nd lift for Bay 4	8	0	(	19NOV09	27NOV 09	19NOV09	27NOV 09						1	1		Con	struct wait Stem 2r	d lift for Bay 4			
	S2BV2190	Backfill to ground level	6	0	(	28NOV09	04DEC09	28NOV 09	04DEC09		!		<u> </u>				!		Bac	ktill to ground level	!		
	S2BV2210	Excavation and Wailing Install to formation	8		100	17AUG09 A	15SEP 09 A	17AUG09 A	15SEP 09 A	ormation	- I		I I	1	1	1	I I		1	I	I I		1
	S2BV2230	Construct Base Slab for Bay 5	8	0	5	528SEP09A	30OCT09	28SEP 09 A	30OCT09					Cor	struct Base Slab for	r Bay 5	I I	1	I	I	I I		1
	S2BV2240	Construct Base Slab for Bay 6	8		100	18SEP09A	25SEP 09 A	18SEP 09 A	25SEP 09 A	ruct Base Slab for Bay 6	6		1 1	1	1	1	I I	1	1	1			
	S2BV2250	Backfill & Remove Waling & Strut	6	0	(	31OCT09	06NOV 09	31OCT09	06NOV 09	1	1		1 1		Bac	kfill & Remove Wal	ing & Strut		1	1			
	S2BV2260	Construct Wall Stem for Bay 5	8	0		07NOV09	16NOV 09	07NOV 09	16NOV 09		1					1	Construct Wall	Stem for Bay 5	1	1			
	S2BV2270	Construct Wall Stem for Bay 6	8	0		17NOV09	25NOV 09	17NOV 09	25NOV 09				<u> </u>		<u></u> -		: <del></del>	Construct	Wall Stem for Bay	6			
	S2BV2280	Backfilling to Ground Level	8	0		26NOV09	04DEC09	26NOV 09	04DEC09										Bac	kfilling to Ground Le	vel		
	S281/2200	Extract Sheetnile	6			0505000	11DEC09	0505000	11DEC09						1	1			. —	Extr	act Sheetoile		
Sectio	OZD V ZZOU	Wai Seware Rumping Station			,	00000000	TIDE003	0002000	TIDE 003						1	1					1		
Por	tion C														1	1	1		1	1			
D	rainage and Du	ts									- I		I I	1	1	1	I I		1	1	I I		
	Trench Method												I I	I	1	1	I I		I	I	I I		
	0005444	DNI4000 Disc & Markels (DVC, CO4, Cutoll)	50				0701001000	000 5 0 00	070/00						1	l.		DN	1200 Pine & Manhol	e /P/S = SC1= Outfa	h I		
	SJCEA14	DN 1200 Pipe & Marinole (P/S - SCI- Outrali)	50			265EP09	2/NUV09	285 E P 09	2/10/09	1	1		1 1	1	1	1	I I				, I I		
	S3CEA15	Construct U-channel, Dish Channel & Catchpit	27	0	(	28DEC09	28JAN10	28DEC09	28JAN10						-	-							
	arthworks										- i				i.	i.							
															1	1							
	S3CG3000	Trim & Compact Formation of Paved Areas	6	0	20	26SEP09A	10FEB10	26SEP 09 A	10FEB10														
s	teel Reinforcem	ent			1																		
															1	1	1 1		1	1			
				-						For Da hanta Daraf Ola			1 1	1	1	1	I		1	1	I I		1
	S3CK1800	Hx Re-bar to Root Slab	8		100	28FE B 09 A	28SEP09	28FE B 09 A	28SEP09		au				1	1							
	-Situ Concrete												I I	1	1	1	I I	1	I	I	I I		
										1 I I	1		I I	l .	1	1	I I	1	L	1	I I		
	S3CL2100	Construct Boundary Wall	24	0	(	28NOV09	26DEC09	28NOV 09	26DEC09		1		1 1	1	1	1	I I		1	1		c	onstruct Boundary W
M	liscellaneous				1																		
															1	1			1				
	1	I							I			Diante											
	S3C11300	Plumbing Work	24	0	40	18JUN09 A	15OC 109	18JUN09 A	15OC 109			Plumo	ing work	Electrical	I and Machanical Inco	tollationa							
	S3C11400	Electrical and Mechanical Installations	24	0		285EP09	280C 109	28SEP09	2800109		1			Liectica	and mechanical ins	-							
	S3CT1500	Install FRP Water Storage Tanks	12	0	(	28SEP09	13OCT09	28SEP09	13OCT09			Install FRP V	Vater Storage Tanks						1	1			
Sectio	in 4 - Sewers &	RM in Portion D, F, G, H, I													1	1	1		1	1			
	rainage and Du	ts									1		1 1	1	1	1	I I		1	1	I I		1
	Trench Method										- I		I I	1	1	1	I I		I	I	I I		1
													I I	1	1	1	I I		I	I	I I		
	S4DEA10	DN1000 Pipe & Manhole (G1-G2-YLSTP) (VO)	50	0	80	27APR09A	02DEC09	27A P R 09 A	02DEC09								· · ·		DN1000 F	ripe & Manhole (G1-	G2-YLSTP) (VO)		
	S4DEA10	Reinstatement of the road at G1	10	0	90	24JUL09 A	03DEC09	24JUL09 A	03DEC09						1	1			Reinst	atement of the road a	G1		1
	S4DEA11	CCTV Inspection of Pipeline	1	0	(	03DEC09	03DEC09	03DEC09	03DEC09	1					1	1			CCTV	Inspection of Pipelir	ie 		
P	ipework - Risin	g Main									1				1	1			1				
	Hench Method																						
	S4DFA110	Twin Rising Main DN900 (ChA 1850- WOIC1)	101	1 0	90	15DEC06 A	02DEC09	15DEC06 A	02DEC09										Twin Risi	- ng Main DN900 (Ch/	1850- WOIC 1)		
	S4DFA120	Twin Bising Main DN900 (ChA 2095 - ChA 2215)	149		70	20DEC07A	20NOV09	20DEC07 A	20NOV/09				-		-	-	Twin	Rising Main DN90	" 10 (ChA2095 - ChA2	215)			
	C 4D EA 100	CCT/ Inspection of Ringing		ľ	100	16411009.4	2000 5 8 000	16411009.4	2000 5 8 000	CCTV Inspection of P	Pipeline .				1	1		, , , , , , , , , , , , , , , , , , ,					
Ļ	dditonal Works	Distuiction	5		100	I IGA U GUS A	203EF 09	16AUG08A	203EF 08														
- Lê	duitorial works	/ Distribution											I I		1	1			1	1			
11	AIC2												I I	1	1	1	I I		I	I	I I		
	S4DV1530	Confirmation of Tree Obstruction	30		100	13FEB09A	10SEP09A	13FE B 09 A	10SEP 09 A	- I -	- I		I I	I	1	1	I I	1	L	I	I I		
	S4DV1560	Enlarge Cofferdam	18	0	50	27AUG09 A	14DEC09	27AUG09 A	14DEC09		1		1 1	1	1	1				1	Enlarge Cofferda	m	
11	S4DV1590	Construction of AIC 2	75	0	60	25APR09A	20JAN10	25A P R 09 A	20JAN10														
	WIC1	I	L	L											1	1			1				
	S4DV1620	Construction of WOIC1 Remaining	60		100	26JUN09 A	29SEP 09 A	26JUN09 A	29SEP 09 A	Construction of WC	DIC1 Remaining												
Por	tion F	•				·			·				-		1	1							
D	rainage and Du	xts													1	1							
	Trench Method												1 I		1	1			1				1
	SALE A 100	CCTV Inspection of Rippling	- 4	<u> </u>		285 6 0 00	285 E P.00	295 E D 00	285 E D 00	CCTV Inspection of P	Pipeline		I I		1	1	I		1	1	I I		
P	IDework - Risin	Main	1	L 0	<b></b>	2035709	2035709	2035709	203 5 19 09														
tart da	te 19DFC	05													·							<b>-</b>	irly bar
inish d	ate 24FEB	11								Logdo	ar Civil En	aincorina	Corn 1 td									Pi	ogress bar
ade ni	umber 28SEF	<u>,0a</u>								Deaue	SD Contra	ct No. DC	/2005/02									C C	itical bar
roject	name 3M01									3-Month Rol	ling Prog	ramme - 3	M01 at 29 Se	p 2009								S	immary bar
c Prin	navera Systems	Inc									- 0												art milestone point

	Act ID	Descr iption	Orig Dur	Total Percent Float Complet	Early Start	Early Finish	Late Start	Late Finish	SEP         OCT         NOV         DEC	JAN
	rench Method									
					. <u> </u>		_			1 1
	S4FFA1300	Twin Rising Main DN700 (WOIC5 - ChC2000)	80	0 9	.5 05JUN08 A	02OCT09	05JUN08 A	02OCT09	Twin Rising Main DN/700 (WOIC5 - ChC2000)	1 1
	S4FFA2300	Twin Rising Main DN700 (ChC2639 - H7)	52	0 5	5 29MA Y 09 A	29SEP09	29MA Y 09 A	29SEP09	Twin Rising Main DN700 (ChC2638 - H7)	
	S4FFA2400	Construct AVIC5	30	16	J0 22JAN09 A	28SEP09	22JA N09 A	28SEP09	Construct AVIC5	
	S4FFA2600	CCTV Inspection of Pipeline	8	0	0 03OCT09	13OCT09	03OCT09	13OCT09	CCTV Inspection of Pipeline	1 1
Add	litonal Works /	Disruption			أكالك			•		
										I I
	AIC5									- I I
	S4FV1050	Pipe Connection inside Chamber	20	10	/0 25AUG09 A	25SEP 09 A	25A UG09 A	25SEP 09 A	A Connection inside Chamber	1 1
	S4FV1060	Cast of Chamber Top Slab	30	0	0 30SEP09	06NOV 09	30SEP09	06NOV 09	Cast of Chamber Top Stab	1 1
Portion	nG									1 1
Pip	ework - Rising	Main								
l në	IERICIT WELFICE									1
	S4GEA 140	Twin Rising Main DN500 (ChR550 - ChR650)	107	1 1	0 27 IL IL OG A	255 E D 00 A	27 IL IL 06 A	255 E P.09 A	A Rising Main DN500 (ChB550 - ChB650)	1 1
	0.4054.470		107			20027 0071	44050004	0000700		- I I
	34GFA 170	Constituct WOICS	30		0 H3EF09A	2300109	TIGEFUSA	2300109		I I
	S4GFA190	CCTV Inspection of Pipeline	9	10	0 06MAR07 A	28SEP09	06MA R07 A	28SEP09		
Add	litonal Works /	Disruption								1
	AIC6									
	S4GV1025	Extraction of Sheet Pile	24	0	0 28SEP09	28OCT09	28SEP09	28OCT09	Extraction of Sheet Pile	
	S4GV 1030	Engineer Instruction of Pine Connection	14		0 2900,709	13NOV/09	2900,709	13NOV/09	Engineer Instruction of Pipe Connection	1 1
	64CV/1040	Ring Connection inside Chamber			0 14NOV00	0705.000	14NOV00	0705.000		1 1
	3467 1040	r ipe connection miside champer	20	<u> </u>	0 14100009	0/DEC09	14100/09	0/02009		
Gro	und Investigati	n								I I
										I I
										1
	S4HB1300	Install Settlement Markers	727	3 0	5 26MAY06 A	08FE B 10	26MA Y 06 A	08FE B 10		
Drai	inage and Duc	S								
The second se	rench Method									
	0.005.0.00					Lavassa	Lancernet			1 1
	S4HEA100	DN500 Pipe & Manhole (A4 - A6)	90	10	0 03OC 108 A	UISEP09A	03OC 108 A	UISEP09A		
1 - H	renchiess Metr	00								- I I
	S4HEB110	CCTV Inspection of Pipeline	1	0	0 28SEP09	28SEP09	28SEP09	28SEP09	CCTV Inspection of Pipeline	I I
Pip	ework - Rising	Main			ليستعط					
Т	rench Method									1 1
	S4HFA100	Twin Rising Main DN700 (ChC100 - ChC170)	45	0 9	/0 08OCT08 A	02OCT09	080CT08 A	02OCT09	Twin Rising Main DN700 (ChC100 - ChC170)	
	S4HFA180	Twin Rising Main DN700 (ChC850 - ChC950)	125	0 5	0 14APR09A	11DEC09	14A P R 09 A	11DEC09	Twin Rising Main DN700 (ChC850	- ChC950)
	S4HFA240	Twin Rising Main DN700 (ChC1450 - ChC1550)	110	0	0 28SEP09	08FE B 10	28SEP09	08FEB10		
	S4HFA261	Twin Rising Main DN700 (ChC1715 - ChC1790)	80	1(	0 27JUN09 A	24SEP09A	27JUN09 A	24SEP 09 A	A ng Main DN700 (ChC1715 - ChC1790)	1 1
	S4HFA270	Twin Rising Main DN700 (ChC 1790 - AIC7(AVIC6))	90	0 9	30 22JUN09 A	09OCT09	22JUN09 A	09OCT09	Twin Rising Main DN700 (ChC1790 - AIC7(A VIC6))	I I
	S4HE4 350	Construct AIC7 (AVIC6)	91	11	0 05MA 2 09 A	215EP/19.4	05MA V 09 A	21SEP.09 A		- + +
-	onchiess Met	od								
i r										1 1
	S4HFB120	Construct WOIC7	60	0 1	0 11MA Y 09 A	06OCT09	11MAY09A	06OCT09	Construct WOIC7	
	S4HFB130	CCTV Inspection of Pipeline	2	0	0 28SEP09	29SEP09	28SEP09	29SEP09	CTV Inspection of Pipeline	
Geo	technical work	\$								
	S4HP1000	Monitoring of Instruments	947	3 0	.5 26MAY06 A	22MAR10	26MA Y 06 A	22MAR10		
Add	litonal Works /	Disruption								1 1
<b>.</b>	Combine A 4	AIC10 (Claim No. 183)								I I
	S4HV 1510	Construct combine A4/AIC10	100	0	50 28JUL09 A	27NOV 09	28JUL09 A	27NOV 09	Construct combine A4/AIC10	1 1
		· · · · · · · · ·		<u> </u>			L			-
	S4HV5040	Extraction of Sheetpile	12	0	0 28SEP09	13OCT09	28SEP 09	130CT09	Extraction of Sheetpile	
	S 4HV 5050	Confirmation of Delay Rips connection	14		0 1400709	2000 T09	1400000	2000 T09	Confirmation of Delay Pipe connection	
	340 000	Commation of Delay Pipe connection	14		0 1400 109	3000109	1400109	3000109		1 1
	S4HV5060	Delay Pipe Connection	10	0	0 3100 109	11NOV09	3100 109	11NOV09	Deay Fib Connection	
Portio	n I upd Investigati	00								I I
	and involugue									I I
										1 1
	S4IB1300	Install Settlement Markers	736	0 8	2 26JUN06 A	12MAR10	26JUN06 A	12MAR10		
Drai	inage and Duc	s								1
T.	rench Method									
	0.415 1.051	COTI/ Internation of Displice	1 1		algoorpee	Lancome	0005340	0000700	CTV legending of Binding	
	S4IEA2500	CCTV inspection of Pipeline	8	U	U 285EP09	USCC (09	285 E P 09	USC/C 109		
tart date	19DEC	05							in the second	Early bar
nish date	e 24FEB	1							Leader Civil Engineering Corp. 1 td.	Progress bar
ata date age num	285EP	50							DSD Contract No. DC/2005/02	Critical bar
roject na	ume 3M01								3-Month Rolling Programme - 3M01 at 29 Sep 2009	Summary bar
c Prime	vera Systeme									<ul> <li>Start milestone point</li> </ul>

	Act ID	Descr iption	Orig Dur	Total Perc Float Comp	ent Early lete Start	Early Finish	Late Start	Late Finish	SEP	ост				FY10 NOV				DEC		JAN
	Trenchless Met	nod									1	1		· · · · · · · · · · · · · · · · · · ·	1	1				
	0.050.000			al		0.0100100	0005000	Laguoura	1				Construct Jack/Ro	oive Pite (C1 - C2)	1	I I	1		- I	
	S4IEB1000	Construct Jack/Heceive Pits (C1 - C2)	30	0	0 28SEP09	04NOV09	28SEP09	04NOV09	1	1	1	1		eiver na (01-02)		1	I			
	S4IEB1020	Jacking DN500 (C1 - C2)	78	0	0 05NOV09	05FEB10	05NOV09	05FE B 10							1					
Pip	pework - Rising	Main									i									
l r	Trenci i vietnou									1										
	S4IFA 1000	Twin Bising MainDN250 (ChD55-81) (Deleted SA2)	0	<b></b>	100 06NOV 09 A	05NOV09A	06NOV 09 A	05NOV09 A					Twin Rising Mai	DN250 (ChD55 -81) (Dele	ted SA2)		1			
	S4IFA1100	CCTV Inspection of Pipeline (Deleted SA2)	0		100 06NOV 09 A	05NOV09A	06NOV 09 A	05NOV09A		1		1	CCTV Inspectio	of Pipeline (Deleted SA2	) " '	1 1	1			1
Ge	otechnical wor		Ű		100 001010011	00110110071	0011011007	00110110071					· · · ·							
	otechnicar won								1	1	I	I	I I I	1	1	I I	1		- I	
									1	1	1	1	I I	1	1	I I	1			
	S4IP1000	Monitoring of Instruments	827	0	85 28JUN06 A	01MAR10	28JUN06 A	01MAR10												
Misce	ellaneous									-					-					
Tes	sting														1		1			
												1		1	1	1 1	1			1
	1							1	1				 	esting to Twin Dising Main	DNECO	I I				
	S4PS1100	Pressure Testing to Twin Rising Main DN500	12	0	0 24OC 109	07NOV09	24OC 109	07NOV 09	1	1	I	1	l lessue		DN300	<u> </u>	I		I	
	S4PS1300	Pressure Testing to Twin Rising Main DN900	12	0	0 21NOV09	04DEC09	21NOV09	04DEC09				1				Pressu	re Testing to Twin	Rising Main DN900	)	
Section	5-Sewers & I	RM in Portion E							_	1	1	1		1	1	I I	1			
Portio	on E																			
Pre	eiminanes																1			
l r												1		1	1	1 1	1			
	S5EA1300	Non Work Period 01 Nov 08 - 31 Mar 09	121	0	98 01NOV08 A	30SEP09	01NOV08 A	30SEP09	Non Work Period 01 Nov 0	8 - 31 Mar 09		1	I I	1	1	1 1	1			I
Tes	sting								-	1	-	1		1	1	1 1	1			
									1	1	I	L	I I	1	1	I I	1			
									1	1	1	1		1	1	I I				
	S5ES1000	Pressure Testing to Twin Rising Main DN900	12	0	90 17MA R09 A	28SEP09	17MA R09 A	28SEP09	Pressure Testing to Twin Rising	Main DN900										
Ad	ditonal Works /	Disruption																		
	Additional CI	nombon (Claim No. 151)															1			
	Additional Ci	Automatical Automatica Automatical Automatical Automatica Automatical Automatical Automatica	450	-	400 044 0 000 4	400 5 7 00 4		1400 E D 00 A				1	I I	1	1	1 1	1			1
	S5EV 10/0	Construct AIC4 (VO)	150		100 UTAPROSA	IUSEPUSA	UIAPRUSA	IUSEPUSA												
Section	6 - Sewers in I	Portion J							1	1	1	1	I I	1	1	I I	1			
Gr	ound Investigati	QN							1	1	1	1		1	1	I I				
l r																	1			
	S6JB1500	Install Settlement Marker 1st Stage	765		100 20A P R 06 A	27DEC09 A	20A P R 06 A	27DEC09 A												Install Settlement M
Dra	ainage and Duc	ts								1		1	1	1	Î.	1 1	1		1	
	Trench Method								1	1	I	I	I I	1	1	I I	1		I I	1
									1	1	I	I	I I I	1	1	I				
	S6JEA100	DN500 Pipe & Manhole (C1 - D2) (Deleted SA2)	80	0	0 04DEC09	12MAR10	04DEC09	12MAR10		1						1 1				
	S6JEA101	DN1050 Pipe & Manhole (D2 - D3) (Deleted SA2)	78	0	0 28SEP09	31DEC09	28SEP09	31DEC09								I I	1			DN1050
	S6JEA260	DN400 Pipe (D32 - D33) Stage 1 (deleted SA2)	0		100 08OCT09 A	07OCT09 A	08OCT09 A	07OCT09 A	DN400	Pipe (D32 - D33) Stag	ge 1 (deleted SA2)									
	S6JEA270	DN400 Plpe (D32 - D33) Stage 2 (deleted SA2)	0	i	100 08OCT09 A	07OCT09 A	08OCT09 A	07OCT09 A	DN400	Plpe (D32 - D33) Stag	ge 2 (deleted SA2)						1			
	S6JEA280	DN400 Pipe (D32 - D33) Stage 3 (deleted SA2)	0		100 08OCT09 A	07OCT09 A	080CT09 A	07OCT09 A	DN400	Pipe (D32 - D33) Stag	ge 3 (deleted SA2)	1		1	1	1 1	1			1
	S6JEA320	DN300 Pipe & Manhole (D40 - D42)	65	0	50 09 JA N08 A	07NOV09	09.IA.N08.A	07NOV09			<u></u>		DN300 Pi	e & Manhole (D40 - D42)		-			+	+
	C.C.IE A 220	DN200 Rins & Mashala (D42, D44) (delated SA2)			100 080CT00 A	0700700 A	0900T00 A	070CT00 A	DN300	Pipe & Manhole (D42	- D44) (deleted SA2	1		I I	1	I I	1			
	DOJE NO.		, j		100 0000 109 A	0700700 A	0000 TUB A	0700700 A	DN/200	Pine & Manhole (D 44	- D47) (delated S A 2	,	I I	1	1	I I	1		. I	1
	S6JEA340	DN300 Pipe & Manhole (D44 - D47) (deleted SA2)	0		100 080C 109 A	070C 109 A	080C 109 A	0/OC 109 A	BNOOD		Den (United GA2)	) 	I I	1	1	I I	1			
	S6JEA361	DN300 Pipe & Manhole (D54 - D56) (deleted SA2)	0		100 08OCT09 A	07OCT09 A	080CT09 A	07OCT09 A	DN300	Pipe & Mannole (D54	- D56) (deleted SA2)	)								
	Trenchless Met	nod								1										
	S6JEB104	Construct Manholes D1 & D2	25	0	5 28A11G09 A	270CT09	28411009 4	2700709				Construct Ma	nholes D1 & D2							
	SELED 104	CCTV Inspection of Ringling		~ 	0 2800700	2000700	2000000	2000700		1	1		Inspection of Pineline		1	1 I.				
	30JEB 130	Convinapediunui Pipeline	2	۲	0 2000 109	2900109	2000-109	2900 109		1		0010			1	I				
Ge	otechnical Wor								1	1	1	I	I I	1	1	1 1	1			1
									1	1	1	L	I I	1	1	I I	1		. I	1
	S6JP1000	Monitoring of Instruments	1152	0	63 21AP R06 A	24FEB11	21APR06 A	24FEB11									1		1	
Section	7 - Sewers in I	Portion K								1	1					1	1			
Portio	on K																			
Dra	ainage and Duc	ts															1			
	Trench Method													1	1	1 1	1			
	S 7K E A 24	CCTV Inspection of Ringling	6	1	100 16411008 4	2000 E B 00	16411009.4	2000 5 8 000	CCTV Inspection of Pipeline	1	I	I	I I	1	1	I I	1		. I	1
	3/KEA2IC	n and Rimtestion of Trees	5		100 16A 0 G08 A	203EF 09	TOA U GUS A	203EF09					L		-	I I				
All P	ortions								1	1	I	I	I I	1	1	I I	1		. I	
Lar	ndscape Softwi	orks and Establishment Works							1	1	1	1	I	1	1	I I	1		1	
											1						1			
	S8QR1100	Preservation & Protection of Preserved Trees	1192	0	79 29JUL06 A	28JUL10	29JUL06 A	28JUL10												
Deconta	amination Work	S							i				i	1	i	I I			1	
Start date	e 19DEC	05																	E F ar	ly bar
inish da	te 24FEB	11							Leader Civil	Engineering									Pro	gress bar
age nu	e 28SEP mber 4∆	09								tract No. DC	/2005/02								Crit	ical bar
roject n	ame 3M01								3-Month Rolling P	rogramme - 3	M01 at 29 Se	ep 2009							Sur	nmary bar
-									· · · · · · · · · · · · · · · · · · ·										🕈 Sta	t milestone point

	Act	Description	Oria	Total	Percent	Early	Early	Late	Late							FY10					
	ID	Description	Dur	Float	Com plete	Start	Finish	Start	Finish	SEP	001					NOV				DEC	JAN
Por	rtion F																				
IT C	Decontamination																				
																1	1				1 1
											1	- I			1	1	1	1 1	I		
	0.077.14000			al			0005000	Leasurage	0005000	Becontemination Works											
	S9F01000	Decontamination Works	4	8	95	28A UG09 A	295 E P 09	28A UG09 A	295EP09	Decontamination works						1	1			1	
Por	rtion H																				
1	Decontamination																1				
										· · · ·							1			1	
											1	- I	- I	1	1	1	1	1 1			I I
	S9HU1000	Decontamination Works	4	8	0 95	26MA R09 A	29SEP09	26MA R09 A	29SEP09	Decontamination Works	1	1	1	1	1	1	1	1 1	- I	1	I I

Start date	19DEC05
Finish date	24FEB11
Data date	28SEP09
Page number	5A
Project name	3M01
o Brimovoro	Sustama Ina

Leader Civil Engineering Corp. Ltd. DSD Contract No. DC/2005/02 3-Month Rolling Programme - 3M01 at 29 Sep 2009



	Act	Description	Qrig	Total	Percent Early	Early	Late	Late	20(	2010
Section	Completion / k	ev Date	Dur	Float	Complete Start	Finish	Start	FINISN	JEC	
	CD0000	Lippedeurer of TOA			0		1		_	
		Handover of TOA	0	0	0	TIJANIU		TIJANI0 "		
Porti	n - Kaminin S on A									
Fe	encing									
	S14D1000	Install Redactrian Cata	2	1 1	0 2255810	22EEB10	00EEB10	02EEB10	-	
	STADIOOO		2	0	0 22FEB10	235 60 10	ZZFEDIV	23FEB10	4	
	S1AD1100	Install Vehicle Gates	6	0	0 11FEB10	20FEB10	11FEB10	20FEB10	4	
	S1AD1200	Install Chain Link Fence	4	0	0 06FEB10	10FEB10	06FEB10	10FEB10		
	S1AD1300	Install GMS Panel Fence	8	0	60 24SEP09 A	05FEB10	24SEP09 A	05FEB10		Install GMS Panel Fence
Dr	ainage and Duc	ts								
	S1AEA1000	DN1050 Pipe & Manhole (D1 - MH1 - P/S)	60	0	50 07SEP09 A	01FEB10	07SEP09 A	01FEB10		DN1050 Pipe & Manhole (D1 - MH1 - P/S)
	S1AEA1100	DN600 Pipe & Manhole (A1 - D1)	70	0	70 02SEP09 A	21JAN10	02SEP09 A	21JAN10		DN600 Pipe & Manhole (A1 - D1)
	S1AEA1200	DN1050 Pipe & Manhole (P/S - Outfall)	20	0	0 02FEB10	27FEB10	02FEB10	27FEB10	-	DN1050 Pipe & Manhole (P/S - Outfall)
	S1AEA1400	Construct U-Channel & Catchoits	20	0	0_01MAB10	23MAB10	01MAR10	23MAB10	-	Construct U
	S1AEA1500	Lay Ducts & Construct Drawpits	14	0	0 01MAR10	16MAR10	01MAR10	16MAR10	1	Lay Ducts & Constru
	S1AEA1900	CCTV Inspection of Pipeline	1	0	0_01MAB10	01MAB10	01MAB10	01MAB10		CCTV Inspection of Pipeline
Pi	pework - Rising	Main				-				
	Trench Method									
		•			•					
	S1AFA1000	Twin Rising Main DN700	20	0	0 22JAN10	17FEB10	22JAN10	17FEB10		Twin Rising Main DN700
Ea	arthworks									
	S1AG2700	Trim & Compact Formation of Paved Areas	6	0	0 12MAR10	18MAR10	12MAR10	18MAR10		Trim & Compact
Ro	ads and Paving	js					1	1		
	O 1 A L HODO	Leu 250mm Oranidar Fill Material David			0 10140	10140.010				
	STAHTUUU		4	0	0 16MAR10	ISMARIU	IONIARIU	INIARIO	-	
	S1AH1100	Construct Concrete Paved Areas	18	0	0 20MAR10	10APR10	20MAR10	10APR10	4	
	S1AH1200	Lay Kerb	4	0	0 18MAR10	22MAR10	18MAR10	22MAR10		
In	Situ Concrete									
	S1AL2110	Construct Boundary Wall (stage 2)	10	0	0 22JAN10	02FEB10	22JAN10	02FEB10		Construct Boundary Wall (stage 2)
La	ndscape Softwo	orks and Establishment Works			<u> </u>					
Start da	te 19DFC									Earthe base
Finish d	ate 19JUN	10			Leader Civi		oring Co	n Itd		Early bar
Data da	te 28DEC	209				ntract No		5/02		Critical bar
Project	name 3M01			3-M	onth Rolling P	rogramm	e - 3M01	at 28 Dec	2000	9 Summary bar
c Prim	avera Systems	, Inc.		0-141		. Jyranni			200	<ul> <li>✓ Start milestone point</li> <li>▲ Einish milestone point</li> </ul>
										Finish milestone point

	Act ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	20( 2010 )EC JAN FEB	MAR Pi
	S1AR1000	Preparation Works	6	0	0	23MAR10	29MAR10	23MAR10	29MAR10		Prep
	esting						1		1		
	S1AS1000	Pressure Testing to Twin Rising Main DN700	12	0	0	29DEC09	12JAN10	29DEC09	12JAN10	Pressure Testing to Twin Rising Main DN700	
7	Additonal Works /	/ Disruption									
	Combine A 4/	(ALC40 / Chim No. 100)									
	S1AV1240	Construction of A1	30	0	80	24AUG09 A	28JAN10	24AUG09 A	28JAN10	Construction of A1	
	S1AV1250	Construction of AIC13	30	0	0	28DEC09	01FEB10	28DEC09	01FEB10	Construction of AIC13	
Section	on 2 - Sha Po Se	ewage Pumping Station									
Po	tion B										
	encing										
						-			-		
	S2BD1000	Install Pedestrian Gates	4	0	0	12JAN10	15JAN10	12JAN10	15JAN10		
	S2BD1100	Install Vehicular Gates	6	0	0	05JAN10	11JAN10	05JAN10	11JAN10	Install Vehicular Gates	
	S2BD1200	Install Chain Link Fence	2	0	0	02JAN10	04JAN10	02JAN10	04JAN10		
	S2BD1300	Install GMS Panel Fence	7	0	40	10NO V09 A	31DEC09	10NO V09 A	31DEC09	Install GMS Panel Fence	
	Trench Method										
		-				-		-	-		
	S2BEA1200	Construct U-channel & Catchpits	16	0	0	28DEC09	15JAN10	28DEC09	15JAN10	Construct U-channel & Catchpits	
	S2BEA1300	Lay Ducts & Construct Drawpit	6	0	0	16JAN10	22JAN10	16JAN10	22JAN10	Lay Ducts & Construct Drawpit	
	arthworks										
	S2BG2300	Trim & Compact Formation of Paved Areas	6	0	0	23JAN10	29JAN10	23JAN10	29JAN10	Trim & Compact Formation of Pav	ed Areas
F	Roads and Paving	gs									
	S2BH1000	Lay 250mm Granular Fill Material Base	4	0	0	30JAN10	03FEB10	30JAN10	03FEB10	Lay 250mm Granular Fill Mat	erial Base
	S2BH1050	Lay Kerb	6	0	0	04FEB10	10FEB10	04FEB10	10FEB10	Lay Kerb	
	S2BH1100	Construct Concrete Paved Areas	14	0	0	11FEB10	02MAR10	11FEB10	02MAR10		Construct Concrete Paved Areas
	andscape Softwo	orks and Establishment Works									
	S2BR1000	Preparation Works	6	0	0	11FEB10	20FEB10	11FEB10	20FEB10		on Works
	S2BR1100	Planting Works	12	0	0	22FEB10	06MAR10	22FEB10	06MAR10		Planting Works
N	liscellaneous										
Start of	date 19DEC	205									Early bar
Data c	late 28DEC	00			Lea	der Civil	Engine	ering Co	p. Ltd.		Progress bar
Page I	number 2A	<u> </u>		o ••		DSD Cor	ntract No	DC/200	5/02	- 0000	Summary bar
c Pri	navera Systems	, Inc.		3-M	onth R	olling Pr	ogramm	e - 3M01 a	at 28 Dec	C 2009	Start milestone point
											Finish milestone point

	Act ID	Description	Orig Dur	Total Float	Percent Early Complete Start	Early Finish	Late Start	Late Finish	20( 2010 )EC JAN FEB	MAR PI
	CODT 1700		10		0 0005.000		0005.000			
	S2BT 1700	Discuption	12	0	0 28DEC09	TIJANIU	28DEC09	TIJANIU		
	Revised B/W	all Details at SPPS (Claim No. 030)			00 0405000 4					
Sectiv	526V2190	Wai Sewage Pumping Station	0	0	90 245EP09 A	26DEC09	245EP09 A	26DEC09		
Por	tion C									
F	encing									
	S3CD1000	Install Chain Link Fence	4	0	0 25JAN10	28JAN10	25JAN10	28JAN10	Install Chain Link Fence	
	Trench Method	ts								
	S3CEA1400	DN1200 Pipe & Manhole (P/S - SC1- Outfall)	50	0	95 02OCT09 A	30DEC09	02OCT09 A	30DEC09	DN1200 Pipe & Manhole (P/S - SC1- Outfall)	
	S3CEA1500	Construct U-channel, Dish Channel & Catchpit	27	0	70 26NO V09 A	12JAN10	26NO V09 A	12JAN10	Construct U-channel, Dish Channel & Catchpit	
	S3CEA1600	Lay Ducts & Construct Drawpit	6	0	70 26NO V09 A	13JAN10	26NO V09 A	13JAN10	Lay Ducts & Construct Drawpit	
		•								
	S3CG3000	Trim & Compact Formation of Paved Areas	6	0	90 26SEP09 A	13JAN10	26SEP09 A	13JAN10	Trim & Compact Formation of Paved Areas	
	loads and Paving	S								
						1		1		
	S3CH1000	Lay 250mm Granular Fill Material Base	4	0	70 280CT09 A	14JAN10	280CT09 A	14JAN10	Lay 250mm Granular Hill Material Base	
	S3CH1050	Lay Kerb	2	0	0 15JAN10	16JAN10		16JAN10		
	n-Situ Concrete	Construct Concrete Flaved Aleas	20	0	70 10NO 703 A	233AN10	TOINO VOS A	2304110		
						Lagrance		Lasure		
	S3CL2100	Construct Boundary Wall	24	0	90 05NO V09 A	02JAN10	05NO V09 A	02JAN10		
	S2CB1000	Propagation Works			0 19 (0)10	0214110	1914010		Prenaration Works	
	S3CR1000	Preparation works	0 12	0	0 25 JAN10	23JAN10	25 JAN10	23JAIN10	- Planting Works	
	liscellaneous		12	Ű	0 200/4/10	COLEDIO	20071110	BOI EB10		
	S3CT1300	Plumbing Work	24	0	40 18.11.1N09 A	13 JAN10	18.11 IN/09 A	13 JAN10	Plumbing Work	
	S3CT1400	Electrical and Mechanical Installations	24	0	0 28DEC09	25JAN10	28DEC09	25JAN10	Electrical and Mechanical Installations	
• • •	S3CT1500	Install FRP Water Storage Tanks	12	0	0 28DEC09	11JAN10	28DEC09	11JAN10	Install FRP Water Storage Tanks	
Section	on 4 - Sewers & I	RM in Portion D, F, G, H, I								
Start of Finish	date 19DEC	05 10								Early bar
Data c	ate 28DEC	09			Leader Civi	I Engine	ering Col	rp. Ltd.		Critical bar
Page I Projec	t name 3M01			3-M	onth Rolling P	niraci No	0. DC/200 ne - 3M01	5/0∠ at 28 ⊡er	c 2009	Summary bar
c Prir	navera Systems	, Inc.		5 140		. • g. unin			◆ <b></b> ◆	Start milestone point Finish milestone point

	Act	Description	Qrig	Total	Percent	Early	Early	Late	Late	20(		2010		
_	ID	Description	Duř	Float	Complete	Starf	Finiśh	Start	Finish	JEC JAN	ninnin		MAR	
Po	ortion D													
	Additional Works	/ Disruption								i i i			i i	i i
	AIC2													
	S4DV1625	Sheetpile Extraction	14	0	0	28DEC09	13JAN10	28DEC09	13JAN10	Sheetpile	Extraction			
	S4DV1630	Engineer Confirmation of Pipe Connection	7	0	0	14JAN10	21JAN10	14JAN10	21JAN10		Engineer Confirm	mation of Pipe Connection	i i	i i
	S4DV1640	Ring Connection in AIC2	10	ů O	0	22 (ANI10	0455810	22 (ANI10	0455810			Pine Connection in AIC2		1.
	34DV 1040		12	0	0	220AN10		223AN10						
	Pinework - Risin	a Main									I I		i i	I I
	Trench Metho	d												
														1 1
	S4FFA130	C Twin Rising Main DN700 (WO1C5 - ChC2000)	80	0	95	05JUN08 A	31DEC09	05JUN08 A	31DEC09	Twin Rising Main DN700	(WOIC5 - ChC2	2000)	1 I I	I I
	S4FFA230	C Twin Rising Main DN700 (ChC2639 - H7)	52	0	95	29MAY09 A	29DEC09	29MAY09 A	29DEC09	Twin Rising Main DN700 (C	hC2639 - H7)			
	S4FFA260	C CCTV Inspection of Pipeline	8	0	0	02JAN10	11JAN10	02JAN10	11JAN10	CCTV Insp	ection of Pipeline	e		1 1
Po	ortion G							I		1 1 1	1 1	1 1 1 1		
	Additonal Works	/ Disruption												
														1 1
	AIC6		_								I I		1 I I	I I
	S4GV1030	Engineer Instruction of Pipe Connection	14	0	0	28DEC09	13JAN10	28DEC09	13JAN10	Engineer	Instruction of P	ipe Connection		
	S4GV1040	Pipe Connection inside Chamber	20	0	0	14JAN10	05FEB10	14JAN10	05FEB10			Pipe Connection inside Chambe	ar -	1 1
Po	ortion H													
	Ground Investig	ation												
														1 1
	C 4LID 1000	Install Cattlement Markers	707		05								<u> </u>	<u> </u>
	Discussion Disis		121	0	65	201VIA 1 06 A	TIVIATIO	20IVIA 106 A	TIMATIO					
	Trench Metho	d									i i		i i	i i
											I I		1 I I	I I
	S4HFA240	C Twin Rising Main DN700 (ChC1450 - ChC1550)	90	0	40	11NO V09 A	04MAR10	11NO V09 A	04MAR10				I Twin Rising Mair	1 DN700 (ChC1450
	S4HFA241	C Twin Rising Main DN700 (ChC1550 - ChC1600)	45	0	0	05MAR10	27APR10	05MAR10	27APR10	i i i	i i	i i i i	. <u> </u>	
	Trenchless M	ethod												
	S4HFB120	C Construct WOIC7	60	0	95	11MAY09 A	30DEC09	11MAY09 A	30DEC09	Construct WOIC7	i i	i i i i	i i	i i
	Geotechnical wo	rks												
						•	•		-		· ·		i i	i i
	S4HP1000	Monitoring of Instruments	947	0	86	26MAY06 A	05JUN10	26MAY06 A	05JUN10		1 1			
	Additonal Works	/ Disruption												
										i i i			i i	i i
	S4HV5040	Extraction of Shootnilo	12		5	280 CT 09 A		280 CT 09 A		Extraction of	Sheetnile			
	040/5040		12	0	5	2000109 A	USUANIU	2000109 A	USUANIO		Confirmat	ion of Dolov Ding connection		
	S4HV5050	Contirmation of Delay Pipe connection	14	0	0	11JAN10	26JAN10	11JAN10	26JAN10				i i	i i
	S4HV5060	Delay Pipe Connection	10	0	0	27JAN10	06FEB10	27JAN10	06FEB10			Delay Pipe Connection		
Stort	data 10DE	C05												
Finish	date 19DE	V10											Early	bar
Data	date 28DE	C09			Lea	aer Civil	Engine	ering Col	rp. Ltd.				Critic:	al bar
Page	number 4A					USD Cor	ntract No	DC/200	5/02				Sumr	nary bar
c Pri	imavera System	s, Inc.		3-M	onth R	olling Pr	ogramm	e - 3M01	at 28 Dec	2009			🔶 Start	milestone point
	*												🔷 Finish	milestone point

	Act	Description	Orig	Total	Percent Early	Early Finish	Late	Late	20( )FC		2010 FFB	МА	R PI
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G	round Investigat	ion											1
	I					I	I	T	1 1 1				1 I
	S4IB1300	Install Settlement Markers	736	0	88 26JUN06 A	14APR10	26JUN06 A	14APR10		1 1 1		1 1	-
D	ainage and Duct	s											
												1 I.	1 I I
	S4IEA1700	DN500 Plpe & Manhole (C15 - C17) (Deleted SA2)	0	<b>I</b>	100 25JAN10 A	23JAN10 A	25JAN10 A	23JAN10 A		DN500 Plpe & Manh	ole (C15 - C17) (Deleted	I SA2)	
	S4IEA2500	CCTV Inspection of Pineline	8	0	0 28DEC09	06.IAN10	28DEC09	06.JAN10	CCTV Inspectio	n of Pipeline			i i
	Tropobloss Mot	hod	Ű	Ŭ	0 2002000	000/	2002000	000, 1110					
	S4IEB1000	Construct Jack/Receive Pits (C1 - C2)	30	0	0 28DEC09	01FEB10	28DEC09	01FEB10		Construct	Jack/Receive Pits (C1 -	- C2)	i i
	S4IEB1020	Jacking DN500 (C1 - C2)	78	0	0 02FEB10	08MAY10	02FEB10	08MAY10					
G	eotechnical work	s											
										i i i	i i i	i i	i i
	S4IP1000	Monitoring of Instruments	827	0	85 28JUN06 A	28MAY10	28JUN06 A	28MAY10					
Misc	ellaneous			<u> </u>	<b>_</b>		<u> </u>						
T	esting												
	S/PS1100	Pressure Testing to Twin Bising Main DN500	12	0	0 2805.00	11 JAN10	28DEC09	11 JAN10	Pressure	Testing to Twin Rising M	ain DN500	1 I	1 I I
Sectio	5 - Sewers &	RM in Portion E	12	Ŭ	0 2002003	TIOANTO	2002000	TIOANTO					
Port	ion E									· · ·	i i i		i i
P	eliminaries												1 I I
					•		-			i i i	i i i	i i	i i
	S5EA1300	Non Work Period 01 Nov 08 - 31 Mar 09	121	0	98 01NO V08 A	30DEC09	01NO V08 A	30DEC09	Non Work Period 01 Nov	/ 08 - 31 Mar 09			1 1
Sectio	n 6 - Sewers in I	Portion J											
Port	ion J ainage and Duct	28										1 I	I I
	Trench Method												
	S6JEA1000	DN500 Pipe & Manhole (C1 - D2) (Deleted SA2)	0		100 02JAN10 A	09APR10 A	02JAN10 A	09APR10 A					
	S6JEA4800	CCTV Inspection of Pipeline	0		100 08FEB10 A	06FEB10 A	08FEB10 A	06FEB10 A		I CCI	V Inspection of Pipeline		
	Trenchless Met	hod						1					· ·
			-			-		-					
	S6JEB1040	Construct Manholes D1 & D2	25	0	75 28AUG 09 A	04JAN10	28AUG 09 A	04JAN10	Construct Manhole	s D1 & D2			
	S6JEB1300	CCTV Inspection of Pipeline	2	0	0 05JAN10	06JAN10	05JAN10	06JAN10	CCTV Inspectio	n of Pipeline	i i i	i i	i i
G	eotechnical work	S S				1	1	1					
	00104000	Manifestion of Inchanges	4450									1 I	1 I I
Contin	50JP 1000		1152	U	90 21APHU6 A	ZJANIU	ZIAPHU6 A	ZJANIU					
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Finish	ate 19JUN	10					aning Ori	لحد ا مع				Ear	aress bar
Data da	te 28DEC	09						rp. Lta.				Crit	ical bar
Page n Proiect	name 3M01			o 14								Sur	nmary bar
c Prin	avera Systems.	Inc.		3-iVio	onth Rolling Pr	ogramm	e - 3M01	at 28 Dec	2009			🔶 Sta	rt milestone point
												in 🔶 Fin	sh milestone point

	Act	Description	Orig	Total	Percent	Farly	Farly	Late	Late	20(							2010						
	ÎĎ	Description	Dur	Float	Complete	Start	Finish	Start	Finish	DEC		J٨	AN .				FEB				MAR		Pl
All	Portions										1	1	1	1	1	1	1	1	1	1	1	1	1
	_andscape Softw	orks and Establishment Works									1	1	1	1	1	1	1	1	1	1	1	1	1
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t i i	S8QB1100	Preservation & Protection of Preserved Trees	1192	0	88	3 29JUL06 A	19JUN10	29JUL06 A	19JUN10										-		1	-	<u> </u>
	oodiiiioo			Ů		20002007	10001110	20002007	100 01 110			-	-	_	_			-			-		<u> </u>
Deco	ntamination work	(S									i -	i	i i	i	i	i -	i i	i i	i -	i -	i -	i i	i -
Po											i.	1	1	l.	1	i.	i.	1	1	i.	i.	i.	1
	Decontamination										1	1	1	1	1	1	1	1	1	1	1	1	1
											1	1	1	1	1	1	1	1	1	1	1	1	1
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	S9FU1000	Decontamination Works	48	0	95	5 28AUG 09 A	29DEC09	28AUG 09 A	29DEC09	Dec	ontamina	ation W	orks	1	1	1	1	1	1	1	1	1	1
Po	rtion H		1						1						-								+
	Decontamination										1		-		1		-	-	1	1	1	-	
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i i i											i -	i i	1		i i	÷	÷	i -	÷	i -	i -	i	1
	S9HU1000	Decontamination Works	48	0	QF	26MAB09 A	29DEC09	26MAB09 A	29DEC09		ontamin	ation W	orks						i.		1	i.	i.
	0.0101000		40	0	5.	2010/A1103 A	2002009	2010/A1103 A	20020009					-	-								

Start date 19DEC05		Early bar
Finish date 19JUN10	Leader Civil Engineering Corp. Ltd. DSD Contract No. DC/2005/02 3-Month Rolling Programme - 3M01 at 28 Dec 2009	Progress bar
Data date 28DEC09		
Page number 6A		
Project name 3M01		Summary bar
c Primavera Systems, Inc.		Start milestone point
		Finish milestone point
•		



Annex D

# **Photographical Records – Noise Barrier On-Site**

DSD Contract DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long Bi-Annual EM&A Summary Report for October 2009 to March 2010 (No. 8) (Designated Elements)







Annex E

**Locations of Monitoring Stations**
















Annex F

**Event and Action Plan** 

AU	ES
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#### Event and Action Plan for Construction Phase Air Quality

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



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



Annex G

# **Mitigation Implementation Schedule**

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage**			mplementation Relevant Stage** & Guideli	
						Des	С	ο	Dec	
		CONSTRUCTION PHASE				1				
		AIR QUALITY - Construction Phase								
		The following measures are enforceable under the Air Pollution Control (Construction Dust) Regulations								
3.5	A1	<ul> <li>Site boundary and entrance</li> <li>where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4 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		~			Part III, Clause 13 (c), Air Pollution Control (Construction Dust) Regulations
		Access Road								
3.5	A2	<ul> <li>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;</li> </ul>	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
		Stockniling of Dusty Materials								
3.5	A3	<ul> <li>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;</li> </ul>	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	<ul> <li>Loading, unloading or transfer of dusty materials</li> <li>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;</li> </ul>	To control potential dust impacts during material handling and truck movements.	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Part IV, Clause 19, Air Pollution Control (Construction Dust) Regulations
3.5	A5	<ul> <li>Use of vehicles</li> <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	Implementation Stage**			nplementation Relevant Legi & Guidelines	
						Des	С	0	Dec	
3.5	A6	<ul> <li>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;</li> </ul>	To control potential dust impacts during material transportation.	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Dust) Regulations Part IV, Clause 21, (2), Air Pollution Control (Construction Dust) Regulations
3.5	A7	<ul> <li>Power-driven drilling, and cutting</li> <li>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;</li> </ul>	To control potential dust impacts during mechanical breaking.	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Part IV, Clause 22, Air Pollution Control (Construction Dust) Regulations
3.5	A8	<ul> <li>Excavation and earth moving</li> <li>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;</li> </ul>	To control potential dust impacts arising from excavation works.	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Part IV, Clause 24, Air Pollution Control (Construction Dust) Regulations
3.5	A9	<ul> <li>Construction of the superstructure of a building</li> <li>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</li> </ul>	To control potential dust impacts from SPS building construction works.	Full duration of SPS construction contract.	The Contractor		~			Part I, Clause 6, (a), Air Pollution Control (Construction Dust) Regulations
3.5	A10	<ul> <li>any skip hoist for material transport should be totally enclosed by the impervious sheeting.</li> </ul>	To control potential dust impacts during material transportation.	Full duration of SPS construction contract.	The Contractor		~			Part I, Clause 6, (b), Air Pollution Control (Construction Dust) Regulations

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage**			nplementation Relevant Legis tage** & Guidelines	
						Des	С	0	Dec	
4.7.1	B1	<ul> <li>NOISE - Construction Phase</li> <li>General Site Clearance –</li> <li>Demolition Works</li> <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		~			Annex 5 of EIAO-TM
4.7.1	B2	<ul> <li>Construction of Sewage Pumping Stations P1, P2 &amp; P3</li> <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, P2 &amp; P3</i>	Site wide and throughout the full duration of the construction contract.	The Contractor		~			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, P2 &amp; P3</i>	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
		Sewers and Rising Mains using Open Trench								
4.7.1	B3	<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 control potential noise impacts during excavation works.	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
4.7.1	B4	<ul> <li>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.</li> </ul>	To control potential noise impacts during road opening activities.	Where there are NSRs located within 50m of the line of sight. Throughout the full duration of the road opening activities.	The Contractor		~			
4.7.1	B5	<ul> <li>Use of movable noise barriers or 3 sided enclosures for all initial road opening activities</li> </ul>	To control potential noise impacts during road opening	Where there are NSRs located within 50m of the	The Contractor		~			

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage**			n	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 Method								
4.7.1	B6	Use of quiet PME which meet the SWLs taken from British Standard, <i>Noise and Vibration</i> <i>Control on Construction Open Sites, BS 5228:</i> <i>Part 1: 1997</i> ,	To control potential noise impacts from PME during construction works	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
4.7.1	Β7	<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 control potential noise impacts from PME during pavement and finish works	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
		WATER QUALITY - Construction Phase No water quality monitoring is required under this study.								
		WASTE - Construction Phase								
6.6.2	D1	<ul> <li>The Contractor shall obtain the necessary waste disposal permits from the appropriate authorities for the disposal of chemical and C&amp;D waste,</li> <li>Chemical Waste Producer and Chemical Waste Disposal Licence (<i>Waste Disposal (Chemical Waste</i>) (<i>General</i>) Regulations); and</li> <li>Dumping Licence (<i>Land (Miscellaneous Provisions) Ordinance (Cap 28)</i>)</li> </ul>	To monitor the collection, handling and disposal of chemical waste and C&D waste, and in compliance with relevant Hong Kong Standards and Regulations.	Site wide and throughout the full duration of the construction contract.	The Contractor	~	~			Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste)(General) Regulation (Cap 354), the Land (Miscellaneous Provisions) Ordinance (Cap 28))

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Implementation Stage**			n	Relevant Legislation & Guidelines
						Des	С	0	Dec	
6.6.2	D2	<b>Chemical Waste</b> Chemical waste that is produced, as defined by Schedule 1 of the <i>Waste Disposal (Chemical</i> <i>Waste) (General) Regulation,</i> 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	<ul> <li>Storage, Packaging and Labelling of Chemical Waste</li> <li>Containers used for storage of chemical wastes should:</li> <li>be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> <li>have a capacity of less than 450 L unless the specifications have been approved by the EPD; and</li> <li>display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.</li> </ul>	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	<ul> <li>Storage of chemical waste</li> <li>The storage area for chemical wastes should:</li> <li>be clearly labelled and used solely for the storage of chemical waste;</li> <li>be enclosed on at least 3 sides;</li> <li>have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;</li> <li>have adequate ventilation;</li> <li>be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste, if necessary); and</li> <li>be arranged so that incompatible materials are</li> </ul>	To ensure the proper storage of chemical waste in accordance with the Regulations.	To be implemented at all worksites throughout the full duration of the construction phase.	The Contractor		~			Part IV, (13,14, 15, 16, 17, & 18) Waste Disposal (Chemical Waste) (General) Regulation

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage	mplementation Stage**		Implementation Stage**		n	Relevant Legislation & Guidelines
						Des	С	0	Dec			
		adequately separate										
		<ul> <li>Disposal of chemical waste</li> <li>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.</li> </ul>	To control the disposal of chemical waste in accordance with the Regulations.	To be implemented at all worksites throughout the full duration of the construction phase.	The Contractor		~			Part IV, (20 -25) Waste Disposal (Chemical Waste) (General) Regulation		
6.6.2	D5	Management of Waste Disposal A trip-ticket system should be established which monitors the disposal of C&DM and solid wastes at public filling facilities and landfills and to control fly-tipping, in accordance with Land (Miscellaneous Provisions) Ordinance (Cap28) and the Works Bureau Technical Circular No. 5/99.	To monitor the disposal of C&DM and solid wastes at public filling facilities and landfills and to control fly-tipping.	To be implemented at all worksites throughout the full duration of the construction phase.	The Engineer/ Contractor		~			Land (Miscellaneous Provisions) Ordinance (Cap 295) and Works Bureau Technical Circular No. 5/99.		
7.5.6	E1	A revised CAP should be submitted to the EPD for approval before the commencement of the construction works. Following receipt of the EPD's approval, the CAP shall be implemented and the findings of the investigations will be reported in the Contaminated Assessment Report (CAR), before ground disturbance is allowed at the concerned sites. If land contamination is confirmed, a Remediation Action Plan (RAP) shall be prepared, and both the CAR and the RAP shall be submitted as a combined report to the EPD for approval before disturbing the ground of the concerned sites. If applicable and required in consultation with the	To determine the presence of soil and groundwater contamination and remedy any potential concerns to acceptable levels.	To be implemented before the commencement of the construction works.	To be Implemented by DSD or their sub-consultants at the Detailed Design Stage, depending upon when site access can be gained.	~				EIAO TM Annex 19/3.1.1 & 3.1.2		

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage	mplementation Rele Stage** & G		mplementation Relevant Leg Stage** & Guidelines		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 ( <i>Figure 8.7a</i> ) for the full duration of the construction contract.	The Contractor		~				
8.7.2	F2	<b>Mitigation Measures Adopted - Minimisation</b> Pipe jacking method should be used instead of dredging where sewers and rising mains cross over existing MDC within the WCA and WBA.	To minimise potential construction noise impacts to ecological sensitive receivers within the WCA/WBA.	For the full duration of the construction contract.	The Contractor		~				
8.7.2	F4	Regular inspections (at least twice a month) should be conducted by the ET during the winter season (November to March) for the remaining sections of the proposed sewerage alignment (including parts of S4, S5 and S6) within the WCA and WBA, where construction activities cannot be rescheduled. The site inspections shall check and report the number of workfronts and implementation of	To schedule noisy construction activities to minimise potential impacts to winter visiting birds.	Work fronts other than identified sections within WBA & WCA (see <i>Figure</i> <i>8.7a</i> attached) throughout the full duration of the construction contract.	The Contractor		~				

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage	mplementation Relevant L tage** & Guidelin			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. <i>Mitigation Measures Adopted</i> Quietened construction plant and equipment (as shown in <i>Table F2</i> ) should be used for the construction of pumping stations (P3 and P2) and sewerage alignment (S4, S5 and S6) located within the WCA and WBA.	Quiet construction plant shall minimise potential noise impacts to the wildlife, particularly rare birds including Black-faced Spoonbill, Buzzard, Hobby, Imperial Eagle, Intermediate Egret, Avocet and Black-eared Kite	At described locations and throughout the full duration of the construction contract.	The Contractor		~			
8.7.4	F6	Erection of fences along the boundary of pumping station construction sites (P1 to P3) before the commencement of construction works to prevent tipping, vehicle movements, and encroachment of personnel into adjacent areas, and P2 to avoid disturbance to the remaining pond areas (0.7 ha);	To erect fences to prevent encroachment of construction activities onto adjacent areas.	At P1 to P3 for full duration of the construction contract.	The Contractor		~			
8.7.4	F7	No filling and dumping to the remaining abandoned fishpond at P2.	To avoid disturbance to abandoned fishponds from construction activities and illegal dumping.	At P2 for full duration of the construction contract	The Contractor		~			
8.7.4	F8	Installation and operation of silt removal facilities at construction sites of P1 to P3. The silt removal facilities should be designed in accordance with Appendix A1 of ProPECC Note PN1/94 Construction Site Drainage. The minimal total combined volume of the silt removal facilities at Nam Sang Wai SPS (P3) should be 15m <sup>3</sup> .	To install silt removal facilities in potentially impact streams and ponds to prevent sedimentation.	At P1 to P3 for full duration of the construction contract.	The Contractor		~			
8.7.4	F9	No open fires within the site boundary during	To prohibit open fires, thereby	Site wide and throughout	The Contractor		$\checkmark$			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	emen e**	tatio	n	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		~			
		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	Implementation Stage**		n	Relevant Legislation & Guidelines	
						Des	с	ο	Dec	
		<ul> <li>submitted for approval by the EPD.</li> <li>The landscape plans and pumping station elevations should demonstrate that the following elements are considered:</li> <li>existing landscape elements (such as mature trees), transplantation of valuable trees, new compensatory planting</li> </ul>		project.						
		<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>								
3.7	11	<ul> <li>EM&amp;A REQUIEMENTS - Construction Phase</li> <li>Air Quality</li> <li>Subject to the Environmental Protection</li> <li>Departments (EPDs) agreement, construction</li> <li>phase dust monitoring shall be undertaken at the</li> <li>following locations in accordance with the</li> <li>recommendations of the EIA.</li> <li>Worksite boundary facing Scattered house in</li> <li>Nam Sang Wai (AM1);</li> <li>Worksite boundary facing Fung Kat Heung (AM5);</li> <li>Worksite boundary facing Scattered House</li> <li>near Route 3 (AM6);</li> </ul>	Installations of the dust monitoring stations to ensure the action and limit levels are not exceeded.	At specified dust monitoring locations for the duration of the construction works.	To be undertaken by the Environmental Team (ET) and reviewed and audited by the Engineer /DSD		~			Air Pollution Control (Construction Dust) Regulations

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage	mplementation Stage**			Relevant Legislation & Guidelines
						Des	С	ο	Dec	
4.9.1	I2	<ul> <li>at any additional locations, where considered necessary, in agreement with EPD.</li> <li>Construction Noise</li> <li>Subject to the Environmental Protection</li> <li>Departments (EPDs) agreement, construction phase noise monitoring shall be undertaken at the following locations in accordance with the recommendations of the EIA.</li> <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>	Installations of the noise monitoring stations to ensure the action and limit levels are not exceeded.	At specified noise monitoring locations throughout the duration of the construction works.	To be undertaken by the Environmental Team (ET) and reviewed and audited by the Engineer		~			Noise Control Ordinance
Des =	Design, C = C	Construction, $O = Operation$ , $Dec = Decommissioning$	1							



# Annex H

# Monitoring Results & Graphical Plots of Air Quality and Noise Monitoring Results



## Air Quality Monitoring Results & Graphical Plot

Data		24-hour T	SP (µg/m <sup>3</sup> )	
Date	AM1	AM5	AM6	AM7
5-Oct-09	#Power failure	<u>278</u>	177 (6-Oct-09)*	154
10-Oct-09	#Power failure	<u>307</u>	55	69
16-Oct-09	#Power failure	217	29	110
22-Oct-09	#Power failure	174	103	62
29-Oct-09	#Power failure	<u>271</u>	64	<u>304</u>
4-Nov-09	#Power failure	<u>267</u>	86	203
10-Nov-09	64	80	58	85
16-Nov-09	162	147	21	<sup>(2)</sup> Power failure
21-Nov-09	125	180	101	<sup>(2)</sup> Power failure
27-Nov-09	179	163	50	<sup>(2)</sup> Power failure
3-Dec-09	<u><b>265</b></u> <sup>(1)</sup>	257	83	<sup>(2)</sup> Power failure
9-Dec-09	81	168	28	<sup>(2)</sup> Power failure
15-Dec-09	73	189	224	<sup>(2)</sup> Power failure
21-Dec-09	128	157	52	<sup>(2)</sup> Power failure
29-Dec-09	115	195	#Power failure	<sup>(2)</sup> Power failure
5-Jan-10	115	152	#Power failure	<sup>(2)</sup> Power failure
11-Jan-10	141	88	#Power failure	<sup>(2)</sup> Power failure
16-Jan-10	147	87	#Power failure	<sup>(2)</sup> Power failure
22-Jan-10	#Power failure	107	#Power failure	<sup>(2)</sup> Power failure
28-Jan-10	<u>276</u>	<u>299</u>	72	<sup>(2)</sup> Power failure
3-Feb-10	#Power failure	132	43	<sup>(2)</sup> Power failure
9-Feb-10	49	Can't access^	Power failure#	<sup>(2)</sup> Power failure
18-Feb-10	#Power failure	Can't access^	34	<sup>(2)</sup> Power failure
24-Feb-10	#Power failure	Can't access^	29	<sup>(2)</sup> Power failure
2-Mar-10	138	84	29	<sup>(2)</sup> Power failure
8-Mar-10	#Power failure	190	138	<sup>(2)</sup> Power failure
13-Mar-10	#Power failure	135	55	<sup>(2)</sup> Power failure
19-Mar-10	#Power failure	198	68	<sup>(2)</sup> Power failure
25-Mar-10	#Power failure	86	54	<sup>(2)</sup> Power failure
31-Mar-10	#Power failure	188	78	<sup>(2)</sup> Power failure
Average (Range)	128 (49 – 276)	178 (80 - 307)	68 (21 - 224)	141 (62 – 304)

All 24-Hr TSP monitoring were preset to start at 00:00 on each monitoring date.

# Power failure while no subsequent monitoring was made.

\* Power failure and () is the re-sampling date to make up the lost sample.

^ No monitoring data as the monitoring location is not accessible during lunar new year holiday

<sup>(1)</sup> The monitoring data was invalidated due to overrun of HVS.

<sup>(2)</sup> Power source was disconnected by the supplier at Location AM7.

DSD Contract DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long Bi-Annual EM&A Summary Report for October 2009 to March 2010 (No. 8) (Designated Elements)







DSD Contract DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long Bi-Annual EM&A Summary Report for October 2009 to March 2010 (No. 8) (Designated Elements)









# **Construction Noise Monitoring Results & Graphical Plot**

### Noise Monitoring Results at NM3

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
6-Oct-09	14:20	56.4	59.7	59.3	55.9	61.8	57.2	58.9	61.9
12-Oct-09	14:57	60.2	63.4	61.8	64.2	58.7	57.9	61.6	64.6
17-Oct-09	10:05	50.1	56.8	52.2	53.5	50.4	52.7	53.2	56.2
23-Oct-09	10:35	63.2	64.7	67.9	61.1	62.3	64.7	64.6	67.6
30-Oct-09	15:25	70.8	70.2	72.0	70.9	72.1	71.4	71.3	74.3
5-Nov-09	11:00	63.4	63.7	62.2	64.0	61.9	60.6	62.8	65.8
11-Nov-09	13:25	60.9	61.4	60.4	62.2	60.9	59.7	61.0	64.0
17-Nov-09	13:05	64.2	64.9	63.7	65.2	65.5	64.3	64.7	67.7
23-Nov-09	14:15	62.9	63.4	63.7	62.1	64.2	64.0	63.4	66.4
28-Nov-09	13:05	62.7	60.4	60.7	62.6	63.1	61.7	62.0	65.0
4-Dec-09	13:00	65.4	63.7	63.3	63.4	65.1	63.0	64.1	67.1
10-Dec-09	13:10	63.1	64.4	62.2	62.7	61.9	62.7	62.9	65.9
16-Dec-09	13:08	62.4	61.8	61.1	60.9	60.7	62.1	61.5	64.5
22-Dec-09	13:08	57.6	57.4	58.7	60.3	59.5	59.1	58.9	61.9
30-Dec-09	13:40	58.0	57.6	57.1	57.3	58.3	58.1	57.8	60.8
6-Jan-10	13:30	54.3	54.4	54.9	53.7	55.1	54.9	54.6	57.6
12-Jan-10	13:15	62.1	62.4	61.7	58.8	59.4	58.3	60.8	63.8
18-Jan-10	13:15	56.4	56.9	57.7	58.1	56.7	56.1	57.0	60.0
23-Jan-10	13:00	54.1	53.7	54.2	54.3	54.7	54.9	54.3	57.3
29-Jan-10	13:20	53.7	53.3	54.5	54.1	53.4	55.6	54.2	57.2
4-Feb-10	13:02	56.8	56.1	55.6	57.1	57.9	56.4	56.7	59.7
10-Feb-10	13:40	56.6	54.7	55.3	58.3	56.2	56.5	56.4	59.4
19-Feb-10	11:30	53.8	55.2	54.2	54.7	56.3	53.9	54.8	57.8
25-Feb-10	13:00	52.7	53.1	53.3	55.2	54.1	53.9	53.8	56.8
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 Level									75

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



### Noise Monitoring Results at NM4

Date	Start Time	1 <sup>st</sup> Lea5	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	Leg30	Corrected
Date	Start Time	I Leqs	Leq5	Leq5	Leq5	Leq5	Leq5	Lequo	* Leq30
6-Oct-09	13:00	57.3	61.1	55.9	57.8	60.2	56.3	58.5	61.5
12-Oct-09	13:07	58.3	58.9	61.3	59.6	60.3	61.1	60.1	63.1
17-Oct-09	11:00	63.4	65.3	66.8	61.5	64.2	65.9	64.8	67.8
23-Oct-09	13:00	61.8	62.3	64.1	60.2	62.6	64.9	62.9	65.9
30-Oct-09	16:07	69.8	67.7	67.9	68.3	68.5	69.5	68.7	71.7
5-Nov-09	13:10	66.6	65.3	65.1	63.7	64.2	65.4	65.1	68.1
11-Nov-09	10:30	61.9	61.4	62.8	64.7	61.7	62.1	62.6	65.6
17-Nov-09	10:43	64.2	66.1	66.8	65.3	65.9	67.2	66.0	69.0
23-Nov-09	10:45	64.2	62.7	62.9	63.7	62.9	62.5	63.2	66.2
28-Nov-09	10:30	64.2	63.1	65.9	63.7	63.5	64.6	64.3	67.3
4-Dec-09	11:00	64.4	62.4	63.9	61.8	62.1	63.3	63.1	66.1
10-Dec-09	10:45	56.1	55.7	57.4	57.5	59.7	57.0	57.4	60.4
16-Dec-09	10:45	59.4	58.7	61.2	60.9	57.8	58.3	59.6	62.6
22-Dec-09	11:00	62.1	62.9	63.7	63.1	62.6	61.9	62.8	65.8
30-Dec-09	09:15	59.4	61.1	60.9	61.4	62.9	62.2	61.5	64.5
6-Jan-10	11:00	58.7	59.4	59.1	61.4	61.1	59.8	60.0	63.0
12-Jan-10	10:45	58.8	5.9	59.1	9.4	57.4	57.6	56.5	59.5
18-Jan-10	10:10	57.9	58.7	60.3	59.1	57.6	58.4	58.8	61.8
23-Jan-10	09:30	57.4	57.9	58.3	58.1	56.8	59.1	58.0	61.0
29-Jan-10	10:30	55.9	57.7	55.4	57.2	55.3	58.1	56.7	59.7
4-Feb-10	10:00	62.3	61.7	60.9	61.7	62.8	61.7	61.9	64.9
10-Feb-10	10:45	52.4	53.3	54.8	53.9	52.1	53.6	53.4	56.4
19-Feb-10	13:02	58.2	57.6	57.7	58.9	58.3	60.1	58.6	61.6
25-Feb-10	10:00	57.2	59.3	59.9	60.3	58.6	58.9	59.1	62.1
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 Level									75

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



### Noise Monitoring Results at NM6

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30
6-Oct-09	11:30	54.4	53.8	54.0	54.3	55.2	54.6	54.4
12-Oct-09	10:29	54.1	56.3	57.2	57.8	58.2	61.1	58.0
17-Oct-09	11:25	55.2	54.7	55.6	55.3	56.2	53.9	55.2
23-Oct-09	11:20	58.7	54.4	54.0	53.7	53.4	53.8	55.1
30-Oct-09	11:17	68.5	68.3	68.5	68.6	68.2	68.7	68.5
5-Nov-09	11:24	52.4	54.8	55.6	53.1	52.7	53.8	53.9
11-Nov-09	11:23	61.0	61.3	61.9	58.5	57.2	55. <b>9</b>	59.8
17-Nov-09	11:26	57.7	54.3	55.5	66.6	55.8	62.2	61.2
23-Nov-09	11:23	55.9	55.4	55.1	56.0	55.7	55.4	55.6
28-Nov-09	11:21	57.1	55.6	56.0	56.5	59.4	56.1	57.0
4-Dec-09	11:23	56.1	55.8	55.2	57.5	55.6	55.1	56.0
10-Dec-09	09:35	62.4	64.7	61.5	62.2	60.7	60.9	62.3
16-Dec-09	09:50	54.9	55.8	55.4	56.7	56.1	55.3	55.7
22-Dec-09	11:04	59.5	59.2	58.4	59.1	58.4	58.6	58.9
30-Dec-09	13:49	62.4	61.9	62.5	62.6	61.0	61.8	62.1
6-Jan-10	10:41	60.9	61.0	61.4	61.9	61.4	61.8	61.4
12-Jan-10	13:00	63.1	63.4	63.0	63.2	62.9	62.1	63.0
18-Jan-10	09:00	67.1	65.4	66.6	66.8	65.9	66.7	66.5
23-Jan-10	13:00	63.1	62.9	62.7	62.4	63.4	63.2	63.0
29-Jan-10	13:17	63.4	64.3	64.3	63.7	63.2	63.8	63.8
4-Feb-10	10:40	63.9	64.1	64.2	63.4	63.7	64.1	63.9
10-Feb-10	13:02	59.4	59.7	59.2	59.3	59.4	59.1	59.4
19-Feb-10	13:02	67.1	69.1	67.9	68.7	68.2	68.1	68.2
25-Feb-10	13:02	62.1	61.9	62.2	61.4	61.7	61.7	61.8
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 Level								75

\* No façade correction was required



## Noise Monitoring Results at NM7

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30
6-Oct-09	09:12	52.9	53.1	61.3	54.6	55.4	53.7	56.4
12-Oct-09	09:41	54.7	55.6	58.0	57.3	59.7	58.9	57.7
17-Oct-09	09:00	62.4	64.4	65.1	67.3	63.4	67.8	65.5
23-Oct-09	09:00	56.4	57.6	56.2	61.2	59.3	58.9	58.6
30-Oct-09	14:17	55.6	57.1	58.2	58.9	57.2	57.3	57.5
5-Nov-09	09:50	59.6	61.4	61.6	60.7	63.4	62.7	61.7
11-Nov-09	08:55	58.4	59.1	57.8	59.4	59.9	60.3	59.2
17-Nov-09	09:03	59.4	62.2	61.4	59.8	60.4	61.1	60.8
23-Nov-09	09:05	50.4	51.5	48.3	51.4	52.5	51.9	51.2
28-Nov-09	08:45	56.2	55.7	55.1	57.4	55.3	56.6	56.1
4-Dec-09	09:30	57.2	56.2	58.1	56.6	59.4	57.1	57.6
10-Dec-09	10:00	58.4	58.1	57.7	60.2	59.3	58.7	58.8
16-Dec-09	11:30	59.2	56.5	56.4	57.4	55.3	57.4	57.2
22-Dec-09	10:13	57.6	56.3	58.1	58.8	57.7	58.3	57.9
30-Dec-09	08:45	58.4	58.1	59.3	57.7	58.3	58.8	58.5
6-Jan-10	09:30	63.1	62.7	64.1	63.8	62.3	62.7	63.2
12-Jan-10	10:20	61.4	61.1	60.6	60.9	61.6	63.7	61.7
18-Jan-10	08:20	59.1	58.4	58.8	59.3	58.9	57.9	58.8
23-Jan-10	08:40	53.6	53.9	53.1	52.7	52.9	53.8	53.4
29-Jan-10	09:40	56.4	54.9	55.1	57.6	56.9	57.2	56.5
4-Feb-10	09:05	60.2	60.4	59.7	61.3	61.1	59.8	60.5
10-Feb-10	09:45	59.3	58.4	60.7	60.2	57.9	58.1	59.2
19-Feb-10	10:45	52.7	53.1	54.2	53.4	54.9	53.2	53.6
25-Feb-10	09:10	55.1	57.2	56.9	59.3	58.2	57.3	57.5
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 Level								75

\* No façade correction was required

DSD Contract DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long Bi-Annual EM&A Summary Report for October 2009 to March 2010 (No. 8) (Designated Elements)





DSD Contract DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long Bi-Annual EM&A Summary Report for October 2009 to March 2010 (No. 8) (Designated Elements)









Annex I

# Meteorological Data in the Reporting Period



### Meteorological Data Extracted From the HK Observatory at Lau Fau Shan Weather Station <u>October 2009</u>

				Lau	Fau Sha	n Weather Statio	ition		
	Date	Weather	Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction		
Thu	1-Oct-09			Holiday					
Fri	2-Oct-09	fine/dry/cloudy/moderate	Trace	28.2	11.5	70.5	E/NE		
Sat	3-Oct-09		•	Holiday	•				
Sun	4-Oct-09	fine/dry/moderate	0	27	16	64.5	S/SE		
Mon	5-Oct-09	fine/dry/moderate/fresh	0	27.3	17.2	53.2	N/NE		
Tue	6-Oct-09	fine/dry/moderate/fresh	0	27.7	12	52.5	N/NE		
Wed	7-Oct-09	fine/dry/moderate	25.4	27.6	8.5	60	E/NE		
Thu	8-Oct-09	fine/dry/moderate	0	25.8	10	63.5	E/SE		
Fri	9-Oct-09	fine/dry/moderate	0	25.7	9	67	S/SE		
Sat	10-Oct-09	fine/dry/moderate	0	265	13.5	55.5	E/NE		
Sun	11-Oct-09	cloudy/rain/fresh/strong	5.1	27.5	16.5	74.5	Е		
Mon	12-Oct-09	cloudy/rain/fresh/strong	1.5	26.9	18.5	76	Е		
Tue	13-Oct-09	sunny	Trace	28.2	26	67.2	Е		
Wed	14-Oct-09	cloudy/rain/moderate/fresh	9.5	27.5	16.5	72.5	Е		
Thu	15-Oct-09	sunny intervals/rain	0	25.9	12.5	68.5	E/NE		
Fri	16-Oct-09	fine/haze/moderate	Trace	27.2	8	74.2	E/NE		
Sat	17-Oct-09	fine/dry/hazy/moderate	0	27.5	9.2	69.5	E/NE		
Sun	18-Oct-09	cloudy/moderate/fresh	0	27.2	17.5	55	Е		
Mon	19-Oct-09	cloudy/rain/moderate/fresh	2	26.6	14.5	69.2	E/NE		
Tue	20-Oct-09	cloudy/rain/fresh/strong	0.9	24.8	20	78.5	Е		
Wed	21-Oct-09	cloudy/moderate	0	25.2	15.5	78	E/NE		
Thu	22-Oct-09	fine/haze/moderate	0	25.5	8	71.5	N/NE		
Fri	23-Oct-09	fine/dry/faze/light winds	0	25.8	9.2	68	Е		
Sat	24-Oct-09	Fine and dry with some haze. Light winds.	0	26.1	12.7	67.2	Е		
Sun	25-Oct-09	Fine and dry with some haze.	Trace	25	10.3	77	E/SE		
Mon	26-Oct-09			Holiday					
Tue	27-Oct-09	Mainly fine. Moderate easterly winds, fresh over offshore waters.	0	25.7	13	63.7	Е		
Wed	28-Oct-09	Mainly fine. Moderate easterly winds, occasionally fresh over offshore waters and on high ground.	Trace	25.4	12.2	64.5	E/NE		
Thu	29-Oct-09	Mainly fine and dry. Moderate easterly winds.	0	25.9	12	65	E/NE		
Fri	30-Oct-09	Mainly fine. Some haze	0	25.7	9	68.2	E/SE		
Sat	31-Oct-09	Mainly fine and dry. Moderate easterly winds	0	25.7	10.2	65	Е		



### November 2009

Lau Fau Shan Weather Station							ion
Date	2	Weather	Total Rainfall (mm)	Mean Air Temperatur e (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
1-Nov-09	Sun	Fine and dry, Strong northerly winds	0	26.9	20.5	53.2	NE
2-Nov-09	Mon	Dry. Mainly fine afternoon. Cloudy tonight. Moderate to fresh north to	0	22.6	32.5	29	NE
3-Nov-09	Tue	Dry and cloudy	0	17.8	19.2	41	NE
4-Nov-09	Wed	Mainly fine and dry. Moderate northeasterly winds	0	19.2	7.5	47	E/NE
5-Nov-09	Thu	Cloudy. Sunny periods in the afternoon. Moderate east to northeasterly winds.	0	21.6	9	60.5	E/NE
6-Nov-09	Fri	Mainly fine in the afternoon. Cloudy tonight. Moderate easterly winds	0	23.2	8.2	70.5	E/SE
7-Nov-09	Sat	Cloudy overnight. Sunny periods tomorrow. Moderate easterly winds.	0	26.3	8.2	71	Е
8-Nov-09	Sun	Mainly cloudy with showers.	Trace	25.5	10.2	80.5	E/SE
9-Nov-09	Mon	Mainly cloudy with one or two showers.	Trace	27	9.5	74	S/SE
10-Nov-09	Tue	Mainly fine in the afternoon. Cloudy periods overnight. Light winds.	Trace	26.2	14	79.5	W
11-Nov-09	Wed	cloudy with a few rain patches.	Trace	27.5	21.5	69.5	SE
12-Nov-09	Thu	Cloudy with occasional rain. Appreciably cooler tonight. Moderate to	5.2	23.8	17.7	83	SE
13-Nov-09	Fri	Sunny period	0.2	17.3	21.2	79.2	Ν
14-Nov-09	Sat	Dry with sunny intervals this afternoon. Cloudy tonight.	Trace	14.3	14.5	73.5	NE
15-Nov-09	Sun	Mainly cloudy with a few rain patches.	20.2	16.2	9.2	83	E/NE
16-Nov-09	Mon	Mainly cloudy with a few rain patches overnight.	34.8	13.7	18	88.5	Ν
17-Nov-09	Tue	Cloudy. Dry with sunny intervals in the afternoon. Fresh northerly winds, strong	0	10.9	33	71	Ν
18-Nov-09	Wed	Mainly cloudy. Cold in the morning. Dry during the day. Moderate to fresh	0	10.4	27	69.8	N/NE
19-Nov-09	Thu	Mainly cloudy and rather cool overnight.Moderate to fresh northerly	Trace	13.6	17	63.5	N/NE
20-Nov-09	Fri	Fine and dry this afternoon. Cloudy tonight. Fresh northerly winds.	0	14	23.5	58.5	N/NE
21-Nov-09	Sat	Cloudy and dry with sunny intervals. Fresh northerly winds. occasionally	0	13.6	17	51	Ν
22-Nov-09	Sun	Fine apart from some haze at first.Light winds	0	14.6	10.2	50.2	Ν
23-Nov-09	Mon	Fine. Hazy at first.Light winds, becoming moderate east to	0	17.6	10.3	55.2	Е
24-Nov-09	Tue	Fine. Hazy at first. Light winds, becoming moderate easterlies later.	0	18.9	8.7	71.7	W/SW
25-Nov-09	Wed	Sunny periods in the afternoon. Cloudy tonight.	0	19.5	11.2	79.5	E/SE
26-Nov-09	Thu	Sunny periods. Moderate east to northeasterly winds.	0	22.4	13.2	71	Е
27-Nov-09	Fri	Sunny periods in the afternoon. Mainly cloudy overnight. Moderate east to	0	23.9	9.5	69.2	E/SE
28-Nov-09	Sat	Mainly fine and dry.	0	23.1	12	66.7	E/SE
29-Nov-09	Sun	Fine but hazy. Dry during the day.	Trace	21.7	8.5	68	Е
30-Nov-09	Mon	Fine but hazy.	Trace	18.6	13.5	67.5	E/NE


## December 2009

Date			n Weather Station				
		Weather	Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
1-Dec-09	Tue	Mainly fine but hazy. Moderate northeasterly winds, becoming fresh	0	17.5	10	66.5	Е
2-Dec-09	Wed	Fine and dry. Moderate to fresh north to northeasterly winds.	0	19.2	11.2	67.5	E/NE
3-Dec-09	Thu	Fine and dry. Cool in the morning. Moderate to fresh north to northeasterly	0	16.5	19.2	64.7	N/NE
4-Dec-09	Fri	Fine and dry apart from some haze. Cool overnight. Moderate east to northeasterly	0	16.6	12.5	55	Е
5-Dec-09	Sat	Very dry in the afternoon. Moderate northerly winds, becoming fresh easterlies	0	17.4	10.7	52	E/NE
6-Dec-09	Sun	Cloudy. Fresh easterly winds, occasionally strong over offshore waters.	Trace	18.9	11.5	59.2	E/NE
7-Dec-09	Mon	Mainly cloudy with a few rain patches. Moderate northeasterly winds.	5.5	17.2	13.7	83.5	E/NE
8-Dec-09	Tue	Mainly cloudy with a few rain patches. Moderate north to northeasterly winds.	14.1	18	14	90.5	E/NE
9-Dec-09	Wed	Mainly fine apart from relatively low visibility at first. Light to moderate north to	0.4	18.6	6.5	88	E/NE
10-Dec-09	Thu	Mainly fine apart from some haze	Trace	19.3	9.5	83.5	N/NW
11-Dec-09	Fri	Sunny periods. Visibility relatively low at first. Light winds, becoming moderate	Trace	20.5	8	78	E/SE
12-Dec-09	Sat	Sunny periods. Moderate to fresh easterly winds.	Trace	22.4	12	72.5	Е
13-Dec-09	Sun	Cloudy with a few rain patches. Moderate easterly winds, becoming fresh northerlies	0	19.8	9.7	81.5	E/SE
14-Dec-09	Mon	Mainly cloudy. Visibility rather low. Moderate to fresh easterly winds.	1	21	16	78.7	Е
15-Dec-09	Tue	Moderate northerly winds, occasionally fresh over offshore waters.	9.6	18.7	18	81.7	E/NE
16-Dec-09	Wed	Cloudy with a few rain patches at first. It will be cold. Fresh northerly winds.	3.8	12.4	17.5	80.5	NE
17-Dec-09	Thu	Sunny intervals and dry tomorrow with a maximum temperature of around 15	Trace	11.1	18	75	Ν
18-Dec-09	Fri	Mainly cloudy and cold. Dry during the day.	Trace	10.9	14.4	67.7	NE
19-Dec-09	Sat	Cold and dry. Cloudy at first. Sunny periods during the day	0	12.7	13.4	57.2	NE
20-Dec-09	Sun	Mainly cloudy. Very dry with sunny periods in the afternoon.	0	12.7	14.2	36.7	N/NE
21-Dec-09	Mon	Cloudy and dry. Sunny periods during the day.	0	14	12.2	42	E/NE
22-Dec-09	Tue	Sunny periods. Moderate easterly winds.	0	16	10.8	69	Е
23-Dec-09	Wed	Cloudy. Sunny periods tomorrow. Moderate easterly winds.	0	19.2	15	68	E/NE
24-Dec-09	Thu	Mainly fine. Moderate easterly winds.	0	18.9	11.6	82.5	W/SW
25-Dec-09	Fri	Holiday					
26-Dec-09	Sat	Holiday					
27-Dec-09	Sun	Mainly cloudy. Cold in the morning. Moderate north to northeasterly winds.	3.1	15.5	19.5	78.5	E/NE
28-Dec-09	Mon	Cloudy with a few rain patches. It will be cool. Moderate to fresh easterly winds.	5.7	10.2	15	73.5	N/NE
29-Dec-09	Tue	Cloudy with a few rain patches and mist. It will be cool.	3.5	14.8	9.2	88.5	E/NE
30-Dec-09	Wed	Cloudy with a few rain patches and mist. Fresh easterly winds, strong over offshore	2.5	16.3	9.5	90.5	E/NE
31-Dec-09	Thu	Sunny periods. Visibility relatively low. Light to moderate easterly winds.	1	14.6	12.2	90	E/NE



## January 2010

Date				Lau Fau Shan Weather Station				
		Weather	Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction	
1-Jan-10	Fri			Holiday				
2-Jan-10	Sat	Sunny periods in the afternoon. Mainly cloudy tonight. Light to moderate easterly	5.2	16.8	10.7	87.5	E/NE	
3-Jan-10	Sun	Overcast with rain patches and low visibility. Moderate to fresh northerly	3.5	16.7	7.2	81.2	E/NE	
4-Jan-10	Mon	Moderate to fresh northerly winds.	0	18.6	9.5	72.5	E	
5-Jan-10	Tue	Overcast with rain patches. Moderate to fresh northerly winds.	0.8	17.3	16.5	75	E/SE	
6-Jan-10	Wed	Mainly cloudy at first, becoming fine. Moderate northeasterly winds.	1.2	14.1	15.5	89	E/NE	
7-Jan-10	Thu	Overcast and cold with light rain patches. Moderate to fresh northerly winds.	0.5	11.1	10.2	83	E/NE	
8-Jan-10	Fri	Mainly cloudy. Moderate north to northeasterly winds, occasionally fresh.	0.9	11.5	12.5	81	N/NE	
9-Jan-10	Sat	Moderate east to northeasterly winds, fresh over offshore waters at first.	0	15.4	11	71.2	NE	
10-Jan-10	Sun	Overcast with a few rain patches.	Trace	18.9	12.2	71.5	E	
11-Jan-10	Mon	Fresh northerly wind, occasionally strong over offshore waters and on high ground.	12.5	14.4	15.5	89.5	N/NE	
12-Jan-10	Tue	Fine and dry. It will be cold. Fresh northerly winds,	0	11.2	21	62.5	N/NE	
13-Jan-10	Wed	Fine and very dry. Cold in the morning. Moderate north to northeasterly winds.	0	11.8	14.7	45	N/NE	
14-Jan-10	Thu	Dry with sunny periods. Moderate easterly winds, occasionally fresh over offshore	Trace	15.2	14	52	E/NE	
15-Jan-10	Fri	Sunny periods. Moderate east to northeasterly winds, fresh over offshore	0	17.5	15	62.5	E	
16-Jan-10	Sat	Mainly fine. Moderate easterly winds, occasionally fresh over offshore waters.	0	18.1	9	55.2	E/SE	
17-Jan-10	Sun	Mainly fine apart from some haze. Moderate easterly winds.	0	16	11.5	68.2	E/NE	
18-Jan-10	Mon	Sunny periods. Moderate easterly winds, occasionally fresh over offshore waters at	0	15.9	12.5	77.2	E	
19-Jan-10	Tue	Cloudy with sunny intervals. Visibility relatively low over parts of the territory.	0	18.9	13.2	73.2	E	
20-Jan-10	Wed	Cloudy. Humid with fog and a few light rain patches.	Trace	22.4	8	79	E/NE	
21-Jan-10	Thu	Mainly cloudy. Moderate easterly winds, becoming fresh northeasterlies with a few	0	24	8.5	76.7	E/SE	
22-Jan-10	Fri	Mainly cloudy. There will be a few light rain patches.	Trace	18.9	18	75.5	E	
23-Jan-10	Sat	Cloudy with a few light rain patches. It will be cool.	Trace	13.2	11.2	84.5	E/NE	
24-Jan-10	Sun	Cloudy. Sunny intervals during the day. Moderate north to northeasterly winds.	Trace	13.5	12.2	78.5	E/NE	
25-Jan-10	Mon	Cloudy with haze. Moderate north to northeasterly winds.	0	17.5	13.5	77	N/NE	
26-Jan-10	Tue	Cloudy with a few light rain patches. Moderate to fresh easterly winds.	Trace	15.8	12.5	75.7	E/NE	
27-Jan-10	Wed	Cloudy and misty with one or two light rain patches.	Trace	18	9	77	E/NE	
28-Jan-10	Thu	Cloudy with fog patches. Light to moderate easterly winds.	Trace	19.6	11	82.5	W/SW	
29-Jan-10	Fri	Cloudy with a few rain patches. Misty at first.	Trace	19.9	10	78	E	
30-Jan-10	Sat	Mist patches. Light winds.	0	21.5	11.2	68.2	F/NF	
31-Jan-10	Sun	Mainly fine. There will be coastal fog. Light winds.	0	21.5	11.5	79	S/SE	



## February 2010

Date		Weather		Lau Fau Shan Weather Station				
			Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction	
1-Feb-10	Mon	Mainly cloudy and misty with	0	21.4	10.5	80	W/SW	
2-Feb-10	Tue	Cloudy and misty with a few rain	Trace	0	12.2	82.5	E/NE	
3-Feb-10	Wed	Mainly cloudy and misty with a	Trace	25.2	15.5	75	E/NE	
4-Feb-10	Thu	Cloudy with light rain. Fresh	0.4	19.4	12	80.5	E/NE	
5-Feb-10	Fri	Moderate to fresh easterly winds.	Trace	20.9	14	75.5	Е	
6-Feb-10	Sat	Cloudy with mist and one or two	Trace	19.4	15.2	82.5	E/NE	
7-Feb-10	Sun	Cloudy with a few rain patches.	94.1	17.6	12.2	95.5	E/SE	
8-Feb-10	Mon	Moderate to fresh easterly winds	7.1	19.1	11.5	91	E/NE	
9-Feb-10	Tue	Foggy with a few light rain	0	23.8	18.5	80.5	S/SE	
10-Feb-10	Wed	Moderate to fresh easterly winds.	Trace	25.2	16.7	7	S/SE	
11-Feb-10	Thu	Mainly cloudy with light rain.	Trace	25.6	19	76	S/SW	
12-Feb-10	Fri	Cloudy to overcast with a few rain patches.	Trace	17	24	74	NE	
13-Feb-10	Sat	Holiday						
14-Feb-10	Sun	Holiday						
15-Feb-10	Mon	Holiday						
16-Feb-10	Tue	Holiday						
17-Feb-10	Wed	Moderate to fresh northerly winds.	1	7.9	18.2	83.5	N/NE	
18-Feb-10	Thu	It will be cold and cloudy with a	0.8	8.1	17.7	69.5	NE	
19-Feb-10	Fri	Mainly cloudy with a few rain	3.7	7.7	13.5	88	N/NE	
20-Feb-10	Sat	Cloudy with mist. A few showers	Trace	11.9	8.8	72.5	N/NE	
21-Feb-10	Sun	Moderate east to northeasterly	Trace	16.2	9	73.5	E/NE	
22-Feb-10	Mon	Cloudy/Sunny periods during the day.	0.1	18.6	8.2	82.2	N/NW	
23-Feb-10	Tue	Cloudy with mist patches. Sunny	0	20.3	11.5	79.5	E/SE	
24-Feb-10	Wed	Mainly cloudy with a few	Trace	23.2	22.2	78.5	S/SE	



## <u>March 2010</u>

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