

JOB NO.: TCS/00462/08

**REVISION NO. 1** 

DRAINAGE SERVICES DEPARTMENT (DSD) CONTRACT NO. DE/2005/05

SUPPLY AND INSTALLATION OF E&M EQUIPMENTS FOR NAM SANG WAI, SHA PO AND KAM TIN SEWAGE PUMPING STATIONS

MONTHLY ENVIRONMENTAL MONITORING & AUDIT (EM&A) REPORT FOR MARCH 2009 (No. 2)

PREPARED FOR

### RYODEN ENGINEERING COMPANY LIMITED

Date 21 April 2		<b>Reference No.</b> 0462/08/600/R0013r1	Certified By Ken Wong	Verified By Dr. Anne F Kerr	
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Rev. No.	Date 21 Apr 09	First Submission		Independent Environmental Checker	
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Rev. No.	<del></del>	First Submission		Independent Environmental Checker	

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### **EXECUTIVE SUMMARY**

- ES01. Ryoden Engineering Company Limited has been awarded the DSD Contract No.: DE/2005/05 Supply and Installation of E&M Equipments for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations. 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 Environmental Permit (EP-220/2005), EIA Report, EM&A Manual (under the DC/2005/02 Contract Designated Element) and the PS.
- ES02. Action-United Environmental Services and Consulting (AUES) has been commissioned by the Contractor to be an Environmental Team (ET) to implement the EM&A program throughout the construction period.
- ES03. From the approval Baseline Monitoring Report (R0003 Revision 3), three nearest monitoring locations (AM5, AM6 and AM7) under the Contract DC/2005/02 would be adopted as the representative monitoring stations for this Project (Contract No.: DE/2005/05) which were agreed by the Engineer's Representative and the Independent Environmental Checker.
- ES04. This is the **Second** Monthly Environmental Monitoring and Audit (EM&A) Report for March 2009 (No. 2) present the environmental impact monitoring and audit (EM&A) program conducted from 01 to 31 March 2009 for the Contract No.: DE/2005/05. The EM&A program in March 2009 were covered air quality, construction noise and waste management.

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

ES05. Two Action Level exceedances for 24-Hour TSP monitoring were recorded at AM1 on 09 March 2009 and AM5 on 03 March 2009. Two Limit Level exceedances for 24-Hour TSP monitoring were recorded at AM7 on 02 March 2009 and AM5 on 14 March 2009. ET had liaison with the Contractor to conduct the investigation, only erect formwork, rebar fixing and extract sheet pile were undertaken. Dust suppression measures with water spraying were applied on-site and no dust complaint was received at the vicinity area. No further air quality exceedance was recorded in this reporting month.

### **COMPLAINT LOG**

ES06. No environmental complaint was received in this reporting month.

### NOTIFICATION OF ANY SUMMONS AND SUCCESSFUL PROSECUTION

ES07. There was no environmental summons or prosecution in this reporting month.

### REPORTING CHANGES

ES08. There are no changes to be reported in this reporting month.



### **FUTURE KEY ISSUES**

ES09. Construction activities to be undertaken in **April 2009** include Building services installation works on G/F, lifting appliances, penstocks and inlet screens installation at Sha Po and Kam Tin SPSs. Potential environmental impacts arising from the works include air quality, noise and construction wastes. Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule to ensure works area environmental performance is acceptable.



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### 1.0 INTRODUCTION

- 1.01 Ryoden Engineering Company Limited has been awarded the DSD Contract No.: DE/2005/05 Supply and Installation of E&M Equipments for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations, which form part of the "Yuen Long and Kam Tin Sewerage and Sewage Disposal" PWP Item No. 215DS. The Project is for the provision of the supply and installation of electrical and mechanical installation in Three Sewage Pumping Stations (SPS), namely Nam Sang Wai Sewage Pumping Station, Sha Po Sewage Pumping Station and Kam Tin Sewage Pumping Station. Layout plan showing the site boundary and work areas are shown in Annex A.
- 1.02 This is the Second Monthly Environmental Monitoring and Audit (EM&A) Report for March 2009 (No. 2) present the environmental impact monitoring and audit (EM&A) program conducted from 01 to 31 March 2009 for the Contract No.: DE/2005/05. The EM&A program in March 2009 were covered air quality, construction noise and waste management.

### PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

1.03 The organization chart and lines of communication with respect to the on-site management structure of the Project is shown in **Annex B**. The construction program for this project is shown in **Annex C** 

### CONSTRUCTION ACTIVITIES UNDERTAKEN IN THE REPORTING MONTH

1.04 The major construction activities undertaken during the reporting month under the Environmental Permit (EP-220/2005) were shown in the **Table 1-1**.

Table 1-1 Construction Activities in the Reporting Month

<b>Sewage Pumping Station</b>	Construction Activities in this Reporting Month
Nam Sang Wai	No activity as the site had not been handed over to the Contractor
Sha Po	Building services installation works at the Transformer Room
Kam Tin	Building services installation works on G/F

### REPORT STRUCTURE

1.05 The EM&A report is structured into the following sections:

SECTION 1	INTRODUCTION
SECTION 2	ENVIRONMENTAL STATUS
SECTION 3	SUMMARY OF EM&A REQUIREMENT
<b>SECTION 4</b>	STATUS OF ENVIRONMENTAL LICENSE AND PERMITS
SECTION 5	MONITORING METHODOLOGY AND RESULTS
<b>SECTION 6</b>	REPORT ON NON-COMPLIANCE (NC), COMPLAINT, NOTIFICATIONS OF
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SECTION 7	OTHERS



### 2.0 ENVIRONMENTAL STATUS

### WORK UNDERTAKEN IN THE REPORTING MONTH WITH ILLUSTRATIONS

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

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

Sewage Pumping Stations	Description of Construction Activities	Environmental Mitigation Measures	EM&A Ref.
Nam Sang Wai	• No activity as the site had not been handed over to the Contractor	• N/A	-
Sha Po	Building services installation works at the Transformer Room	<ul> <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>Implement trip-ticket system for waste disposal</li> <li>Restrict open fires and provide fire fighting equipment in the works area</li> <li>Apply and obtain appropriate waste disposal licenses</li> </ul>	H1 I1 & I2 D5 F9 D1
Kam Tin	Building services installation works at the Transformer Room	<ul> <li>Maximize the use of quiet PME on site</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>Conduct noise and dust monitoring as per EM&amp;A Manual during construction</li> <li>Perform weekly inspection with ET and monthly audit with IEC</li> </ul>	B1, B2 & D5 F9 I1 & I2 H1

### **PROJECT DRAWINGS**

- 2.02 Drawings showing the work areas under EP-220/2005 and location of representative monitoring stations are presented in **Annex D**.
- 2.03 AM5, AM6 & AM7, are the nearest stations for 24-Hour TSP monitoring and NM3, NM6 & NM7 are the nearest locations for construction noise monitoring locations for this Project (Contract No.: DE/2005/05) which were agreed by the Engineer's Representative and the Independent Environmental Checker. Locations of the monitoring stations and description are summary in the Table 2-2.

**Table 2-2 Description of the Monitoring Stations** 

Station ID	Nature of Premise	<b>Nearest Sewage Pumping Station</b>	<b>Station Coordinates</b>
AM5	Site Boundary in FKH	Sha Po	835121 N 823515 E
AM6	Site Boundary in KT	Kam Tin	833308 N 823987 E
AM7	Site Boundary in NSW	Nam Sang Wai	836171 N 822586 E
NM3	Village House in NSW	Nam Sang Wai	835808 N 822817 E
NM6	Village House in KT	Kam Tin	833288 N 823999 E
NM7	Village House in FKH	Sha Po	835121 N 823495 E

2.04 In this reporting month, the impact monitoring was carried out at three designated air stations and noise monitoring locations 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 EM&A Manual (under the DC/2005/02 Contract Designated Element). 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 EM&A Manual (under the DC/2005/02 Contract Designated Element) are shown in **Table 3-1**.

**Table 3-1 Summary of EM&A Requirements** 

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

### ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

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

Table 3-2 Action and Limit Levels for Air Quality

Monitoring Locations	Action Le	evel (µg/m³)	Limit Level (µg/m³)		
Withintoning Locations	1-Hour TSP	24-Hour TSP	1-Hour TSP	24-Hour TSP	
AM5	> 353	> 176	> 500	> 260	
AM6	> 329	> 176	> 500	> 260	
AM7	> 383	> 157	> 500	> 260	

Table 3-3 Action and Limit Levels for Construction Noise

Monitoring Period			d	Action Level	Limit Level
0700-1900	hours	on	normal	When one or more documented	> 75 dB(A)
weekdays				complaints are received	> /3 UB(A)

### EVENT AND ACTION PLANS

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

### **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. The environmental implementation mitigation schedule as shown in **Annex F**.

### ENVIRONMENTAL REQUIREMENTS IN CONTRACT DOCUMENTS

3.06 The environmental requirements in the contract documents generally refer to the compliance of the requirements as stipulated in the project EP (EP-220/2005) and the EM&A Manual (under the DC/2005/02 Contract – Designated Element).



### 4.0 STATUS OF ENVIRONMENTAL LICENSE AND PERMITS

4.01 The status of permits, licenses, and/or notifications related to environmental protection under this Project during the reporting month is presented in **Table 4-1**.

**Table 4-1** Status of Environmental Licenses and Permits

Items	Item Description	License/Permit Status
1	Environmental Permit No.: EP-220/2005	Issued in June 2005
2	Account for Disposal of Construction Waste No. 7003733	Registration on 16 May 2008



### 5.0 MONITORING METHODOLOGY AND RESULTS

### MONITORING METHODOLOGY OF AIR QUALITY MONITORING

- 5.01 The 24-Hour TSP monitoring was carried out by a High Volume Air Sampler (HVAS) in compliance with the EM&A Manual (under the DC/2005/02 Contract Designated Element). The HVAS employed complied with the PS specifications including.
  - Power supply of 220v/50 Hz for 24-Hour continuous operation;
  - 0.6-1.7m<sup>3</sup>/min (20-60 SCFM) adjustable flow rate;
  - A 7-day mechanical timer for 24-Hour operation;
  - An elapsed time indicator with  $\pm 2$  minutes accuracy for 24-Hour operation;
  - Minimum exposed area of 63in<sup>2</sup>;
  - Flow control accuracy of  $\pm 2.5\%$  deviation over 24-Hour operation;
  - An anodized aluminum shelter to protect the filter and sampler;
  - A motor speed-voltage control to control mass flow rate with accuracy of  $\pm 2.5\%$  deviation over 24-Hour sampling period;
  - Provision of a flow recorder for continuous monitoring;
  - Provision of a peaked roof inlet;
  - Incorporation with a manometer; and
  - An 8"x10" stainless steel filter holder to hold, seal and easy to change the filter paper.
- 5.02 The filter papers used in 24-Hour TSP monitoring were of size 8"x10" and provided by a local HOKLAS-accredited laboratory, ALS Techichem Pty (HK) Limited (HOKLAS No. 66). The filters papers after measurements were returned to the laboratory for the required treatment and analysis. The validation of all monitoring practices and data were following the in-house QA/QC procedures. Blank filters samples were collected and delivered to the HOKLAS-accredited laboratory for QA/QC check.
- 5.03 The meteorological information in this reporting month was obtained from Lau Fau Shan Station of the Hong Kong Observatory (HKO).

### METHODOLOGY FOR CONSTRUCTION NOISE MONITORING

- 5.04 Noise measurements were taken in terms of the A-weighted equivalent sound pressure level (Leq) measured in decibels (dB). Supplementary statistical results ( $L_{10}$  and  $L_{90}$ ) were also obtained for reference.
- 5.05 Hand-held sound level meters and associated acoustical calibrators in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specifications were used for taking the baseline noise measurements.
- 5.06 Windshield was fitted in all measurements. All noise measurements were made with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq).
- 5.07 No noise measurement was made in the presence of fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s.

### LABORATORY AND MONITORING EQUIPMENT USED

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



5.09 Monitoring equipment used in the impact EM&A program is presented in Table 5-1.

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

Env. Aspect	Parameters	Monitoring Equipment
Air Quality	24-Hour TSP	Greasby Anderson GMWS2310 High Volume Air Sampler
Noise	Leq(30mins)	B&K Sound Level Meter (Type 2238) & Acoustics Calibrator (Type 4231)

### **EQUIPMENT CALIBRATION**

- 5.10 Initial calibration of the HVAS was performed upon installation and thereafter at a six month intervals in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A). The calibration data are properly documented and the records are maintained by ET for future reference. No HVAS was required calibration in this reporting month, monitoring equipment of HVS and sound level meter were required to calibrate in next reporting month. Updated calibration schedule is shown in Annex G.
- 5.11 The sound level meters were calibrated using an acoustical calibrator prior to and after measurements. The meters are regularly calibrated in accordance with the manufacturer's instructions. Prior to and following each noise measurement, the accuracy of the sound level meter was checked using an acoustical calibrator generating a known sound pressure level at a known frequency. Measurements were considered valid only if the calibration levels before and after the noise measurement agree to within 1.0 dB.
- 5.12 Calibration certificates of the sound level meters will provide depend on the annual calibration had undertaken.

### PARAMETERS MONITORED

5.13 Monitoring parameters in this reporting month were compliance with the EM&A requirements as stipulated in **Table 3-1**.

### MONITORING LOCATIONS

- 5.14 Review the scope of works for this Project, the construction activities only localize at three Sewage Pumping Station (SPS). AM5, AM6 & AM7, are the nearest stations for 24-Hour TSP monitoring and NM3, NM6 & NM7 are the nearest locations for construction noise monitoring locations for this Project (Contract No.: DE/2005/05) which were agreed by the Engineer's Representative and the Independent Environmental Checker.
- 5.15 Descriptions of the monitoring stations are summarized in **Table 5-2** and location plan are presented in **Annex D**.

Table 5-2 Air Quality and Construction Noise Monitoring Stations/Locations

Sewage Pumping Station	Monitoring Station/Location	Description
Air Quality (3 Station	ns)	
Sha Po	AM5	Worksite boundary facing Fung Kat Heung
Kam Tin	AM6	Worksite boundary facing scattered near Route 3
Nam Sang Wai	AM7	Worksite boundary facing scattered house in Nam Sang Wai
Construction Noise (	3 Locations)	
Sha Po	NM7	Fung Kat Heung
Kam Tin	NM6	Scattered House near Route 3
Nam Sang Wai	NM3	Village House in Nam Sang Wai



### MONITORING FREQUENCY AND PERIOD

- 5.16 The impact 24-Hour TSP monitoring was conducted at the designated stations once every 6 days in compliance with the EM&A Manual (under the DC/2005/02 Contract Designated Element). In this reporting month, 15 monitoring events of 24-Hour TSP monitoring were conducted.
- 5.17 The impact noise monitoring was conducted at the designated stations once every 6 normal working days in compliance with the EM&A Manual (under the DC/2005/02 Contract Designated Element). Total of 15 monitoring events were carried out in this reporting month.

### MONITORING RESULTS AND SCHEDULE

- 5.18 Monitoring results in this reporting month for air quality and construction noise were summarized at Tables 5-3 to 5-6.
- 5.19 Two Action Level exceedances for 24-Hour TSP monitoring were recorded at AM1 on 09 March 2009 and AM5 on 03 March 2009. Two Limit Level exceedances for 24-Hour TSP monitoring were recorded at AM7 on 02 March 2009 and AM5 on 14 March 2009. ET had liaison with the Contractor to conduct the investigation, only erect formwork, rebar fixing and extract sheet pile were undertaken. Dust suppression measures with water spraying were applied on-site and no dust complaint was received at the vicinity area. No further air quality exceedance was recorded in this reporting month.
- 5.20 Power failures were recorded at AM1 on 03 March 2009 and AM6 on 03, 09 and 26 March 2009. Makeup monitoring had been arranged to undertaken upon the power supply reinstate.

Table 5-3 Summary of Air Quality Monitoring Results

Date	24-Hour TSP (μg/m³)									
Date	AM5	AM6	AM7							
03-Mar-09	251	24 (4-Mar-09)	<b>284</b> (02-Mar-09)							
09-Mar-09	159	61 (10-Mar-09)	61							
14-Mar-09	347	130	97							
20-Mar-09	110	65	79							
26-Mar-09	135	65 (27-Mar-09)	64							
Average (Range)	200 (110-347)	69 (24-130)	117 (61-284)							
Action / Limit	> 176 / >260	> 176 / >260	> 157 / >260							

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

Bold and italic is exceed the Action Level. Bold and underline is exceed the Limit Level.

5.21 No construction noise complaint (Action Level) was received and no construction noise monitoring above the Limit Level was recorded in this reporting month.

Table 5-4 Summary of Noise Monitoring Results at NM3

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected* Leq30
04-Mar-09	10:26	54.9	60.4	63.2	59.3	61.2	58.7	60.3	63.3
10-Mar-09	09:55	47.5	50.9	55.4	57.9	53.2	50.3	53.9	56.9
16-Mar-09	09:42	48.9	50.1	49.2	49.3	51.7	50.9	50.1	53.1
21-Mar-09	09:40	49.3	48.2	50.7	51.9	48.4	50.9	50.1	53.1
27-Mar-09	10:15	50.9	54.8	56.7	50.3	49.7	51.4	53.1	56.1
Limit Le	vel								75

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



Table 5-5 Summary of Noise Monitoring Results at NM6

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected* Leq30	
04-Mar-09	11:30	61.2	59.1	58.2	59.3	60.6	58.3	59.6		
10-Mar-09	11:28	56.3	58.3	64.7	63.6	64.5	59.4	62.2	No	
16-Mar-09	11:28	57.8	56.9	55.8	55.5	56.2	56.9	56.6	Correction	
21-Mar-09	11:30	56.6	55.3	55.9	55.1	55.5	55.6	55.7	Required	
27-Mar-09	11:29	56.3	55.6	57.2	56.7	56.2	56.3	56.4	_	
Limit Le	Limit Level									

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

Table 5-6 Summary of Noise Monitoring Results at NM7

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected* Leq30
04-Mar-09	09:34	63.4	60.9	62.3	59.7	61.3	58.9	61.3	
10-Mar-09	09:08	56.2	55.1	55.8	56.7	58.2	55.9	56.4	No
16-Mar-09	09:00	56.4	56.9	55.5	58.7	60.2	61.3	58.7	Correction
21-Mar-09	09:00	56.2	58.3	60.9	62.7	63.5	60.9	61.1	Required
27-Mar-09	09:22	54.2	55.7	55.1	53.1	54.5	56.7	55.0	_
Limit Le	vel				75				

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

5.22 The tentative monitoring schedule for the coming month (**April 2009**) is shown in **Table 5-7**.



**Table 5-7 Tentative Schedule of Monitoring for Next Reporting Month** 

Da	te	Air Quality	Construction Noise
1-Apr-09	Wed	✓	
2-Apr-09	Thu		✓
3-Apr-09	Fri		
4-Apr-09	Sat		
5-Apr-09	Sun		
6-Apr-09	Mon		
7-Apr-09	Tue		
8-Apr-09	Wed	✓	
9-Apr-09	Thu		✓
10-Apr-09	Fri		
11-Apr-09	Sat		
12-Apr-09	Sun		
13-Apr-09	Mon		
14-Apr-09	Tue		
15-Apr-09	Wed		
16-Apr-09	Thu		
17-Apr-09	Fri	✓	
18-Apr-09	Sat		✓
19-Apr-09	Sun		
20-Apr-09	Mon		
21-Apr-09	Tue		
22-Apr-09	Wed		
23-Apr-09	Thu	✓	
24-Apr-09	Fri		✓
25-Apr-09	Sat		
26-Apr-09	Sun		
27-Apr-09	Mon		
28-Apr-09	Tue		
29-Apr-09	Wed	✓	
30-Apr-09	Thu		✓

✓	Monitoring Day
	Sunday or Public Holiday

### WEATHER CONDITIONS DURING THE MONITORING MONTH

5.23 The meteorological data during the monitoring date are summarized in **Annex H**.

### GRAPHICAL PLOTS OF TRENDS OF MONITORED PARAMETERS

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

### WEATHER CONDITIONS THAT AFFECT THE MONITORING RESULTS

5.25 The weather conditions during monitoring were considered acceptable for monitoring activities and did not have significant impact on the monitoring results obtained.

### OTHER FACTORS INFLUENCING THE MONITORING RESULTS

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

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

5.27 Not applicable.



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

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

- 6.01 No 24-Hour TSP monitoring result trigger the Action and Limit Level was recorded in this reporting month.
- 6.02 No construction noise complaint (Action Level) or monitoring noise level exceed the Limit Level [75dB(A)] was recorded in this reporting month.

### RECORD OF ENVIRONMENTAL COMPLAINTS RECEIVED

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

### RECORD OF NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTION

6.04 There was no notification of summons or prosecution received in this reporting month.

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

6.05 No complaints or NoS was received in this reporting month.

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

6.06 As mention in Section 6.05, no NC, complaints or NoS was received in this reporting month. Therefore, no follow-up action was needed to undertake. The Contractor was reminded to implement the environmental mitigation measures as present in Table 2-1 as necessary.



### 7.0 OTHERS

### **FUTURE KEY ISSUES**

7.01 Construction activities to be undertaken in **April 2009** include Building services installation works on G/F, lifting appliances, penstocks and inlet screens installation at Sha Po and Kam Tin SPSs. Potential environmental impacts arising from the works include air quality, noise and water quality (particularly site runoff). Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule to ensure site environmental performance is acceptable.

### SOLID AND LIQUID WASTE MANAGEMENT STATUS

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

Table 7-1 Summary of Waste Quantities for Disposal

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

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

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

7.03 There was no site effluent or surface runoff discharged from the Project was recorded in the reporting month.

### ENVIRONMENTAL INSPECTION AND AUDIT

- 7.04 Representatives of the Engineer, the Contractor and ET carried out regular weekly site inspection on 03, 10, 17, 24 and 31 March 2009 to evaluate the site environmental performance. The monthly IEC site audit for March 2009 was undertaken on 24 March 2009. No non-compliance or observation was found in this reporting month.
- 7.05 Summary of observation during the site inspection in this reporting month are presented in **Table 7-3**.

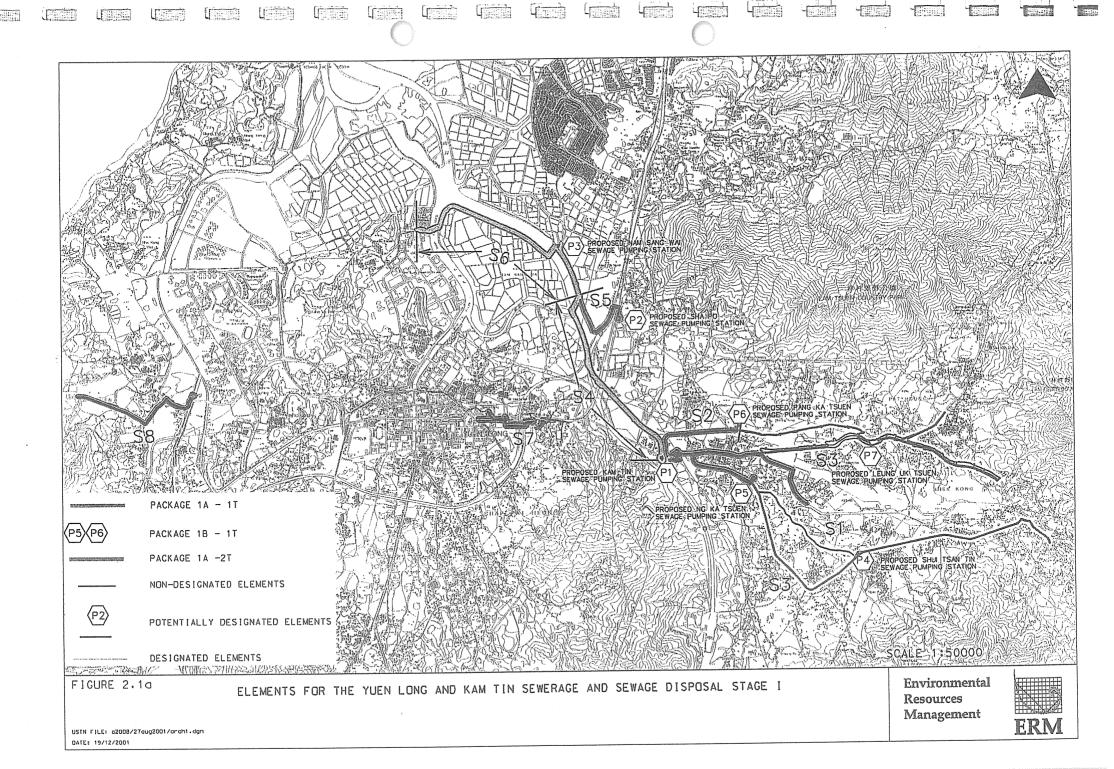
Table 7-3 Summaries of the observation during the Site Inspection in this Reporting Month

<b>Inspection Date</b>	Inspection/Audit Findings	Recommendation	Rectified on
03 March 2009	NIL	NA	NA
10 March 2009	NIL	NA	NA
17 March 2009	NIL	NA	NA
24 March 2009*	NIL	NA	NA
31 March 2009	NIL	NA	NA

Note: \* Join IEC Monthly Site Audit. Details of site audit can refer to the DC/2005/02 Monthly EM&A Report (Designated Element)



# ANNEX A PROJECT SITE LAYOUT

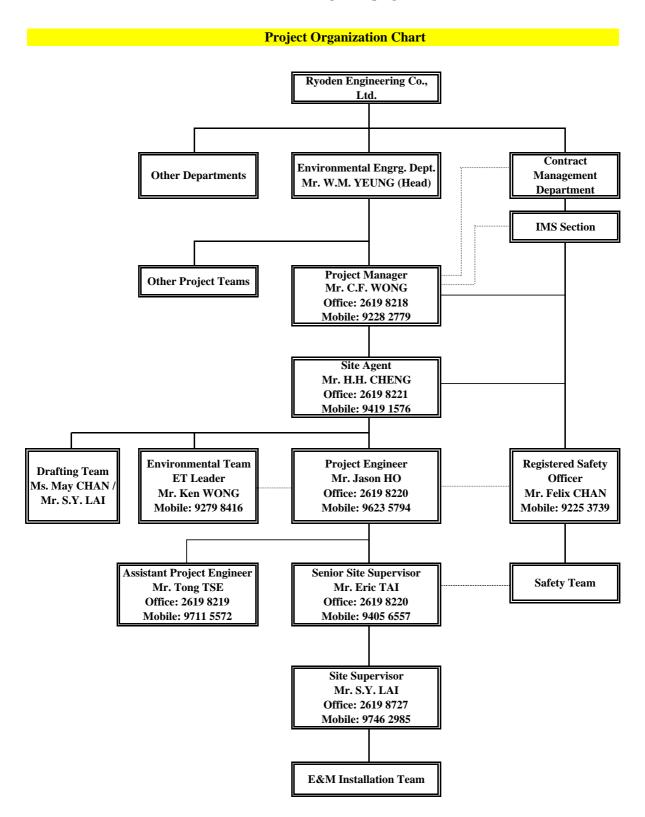




### **ANNEX B**

### PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

### Contract No. DE/2005/05 S&I of E&M Equipment for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations



Effective Date: 09 February 2009



# ANNEX C CONSTRUCTIONPROGRAM

Contract No. DE/2005/05 Supply and Installation of Electrical and Mechanical Equipment for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations -Works Programme Rev 3 2007 2008 ID 6 Task Name Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Apr Ma Duration Start Finish Contract Commencement Date 27/3/06 27/3/06 0 days **27/3** Section 1 Surge Analysis and Drawings 120 days 27/3/06 24/7/06 Submission 4 Surge Analysis for 3 SPSs 90 days 27/3/06 24/6/06 6 m Civil Requirement Drawings Submission for 3 90 days 27/3/06 24/6/06 nos. Sewage Pumping Stations Submission of GA Drawings, Equipment Layout 90 days 27/3/06 24/6/06 Drawings, Electrical Schematic Drawings, Cable Route Drawings, Electrical Services Drawings and 8 715.00 Resubmission of above items 60 days 26/5/06 24/7/06 9 Approval of design works 0 days 24/7/06 24/7/06 **24**/7 10 11 Section 2 Works for Nam Sang Wai SPS 1308 27/3/06 25/10/09 days 12 13 Other Drawings Submission and Approval 180 days 27/3/06 22/9/06 14 15 **Equipment Submission and Approval** 240 days 27/3/06 21/11/06 16 Penstock and Actuator 240 days 27/3/06 21/11/06 240 days 17 Main sewage pump and VFD 27/3/06 21/11/06 18 Inlet Coarse Screen 27/3/06 240 days 21/11/06 19 **Deodourising System** 240 days 27/3/06 21/11/06 20 Lifting Appliance 240 days 27/3/06 21/11/06 21 Pipework and Valve 240 days 27/3/06 21/11/06 22 Measuring Instrument 240 days 27/3/06 21/11/06 23 LV Switchboard 27/3/06 240 days 21/11/06 24 MACS, Telemetry and CCTV 240 days 27/3/06 21/11/06 25 Ventilation Fans 240 days 27/3/06 21/11/06 26 **Building Services and Electrical Services** 240 days 27/3/06 21/11/06 Equipment 27 Fire Services Equipment 240 days 27/3/06 21/11/06 28 29 **Equipment Procurement and Manufacture** 240 days 22/11/06 19/7/07 30 Penstock and Actuator 240 days 22/11/06 19/7/07 31 Main sewage pump and VFD 240 days 22/11/06 19/7/07 32 240 days Inlet Coarse Screen 22/11/06 19/7/07 33 34 Task Progress Rolled Up Split Rolled Up Progress Date: 30/4/2008 Project Summary Deadline Split Milestone Rolled Up Task ...... Rolled Up Milestone External Tasks External Milestone

Page 1

Supply and Installation of Electrical and Mechanical Equipment for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations -Works Programme Rev 3 2009 0 Start Finish Task Name 35 22/11/06 19/7/07 Deodourising System 240 days 240 days 22/11/06 19/7/07 36 Lifting Appliance 22/11/06 19/7/07 37 240 days Pipework and Valve 240 days 22/11/06 19/7/07 1111 38 Measuring Instrument 22/11/06 19/7/07 2.0 39 LV Switchboard 240 days 19/7/07 MACS, Telemetry and CCTV 240 days 22/11/06 40 31.25 19/7/07 22/11/06 41 🖺 Ventilation Fans 240 days 19/7/07 22/11/06 42 **Building Services and Electrical Services** 240 days Equipment 22/11/06 19/7/07 43 118 Fire Services Equipment 240 days **27/3** 27/3/07 27/3/07 45 **Application of CLP Power Supply** 0 days 27/3/07 27/3/07 27/3 46 Application of Telephone Line 0 days 47 18/12/08 48 218 days 15/5/08 **Equipment Delivery** 30 days 15/8/08 13/9/08 49 11.0 Penstock and Actuator 30/5/08 28/6/08 50 Main sewage pump and VFD 30 days 13/6/08 15/5/08 30 days 51 13.00 Inlet Coarse Screen 18/12/08 52 II N Deodourising System 30 days 19/11/08 19/11/08 18/12/08 100 30 days 53 Lifting Appliance 11/8/08 9/9/08 54 11 **B** 30 days Pipework and Valve 18/12/08 55 11.00 Measuring Instrument 30 days 19/11/08 19/11/08 18/12/08 56 LV Switchboard 30 days 19/11/08 18/12/08 57 MACS, Telemetry and CCTV 30 days 19/11/08 18/12/08 58 Ventilation Fans 30 days 59 30 days 19/11/08 18/12/08 **Building Services and Electrical Services** Equipment 19/11/08 18/12/08 60 ... Fire Services Equipment 30 days 61 **28/5** 62 Submission of Form 314 for Fire Services 0 days 28/5/09 28/5/09 63 64 65 28/2/09 28/2/09 10 80 Site Take Over Date for Section 2 0 days 66 28/2/09 26/8/09 180 days 67 100 Site Installation 68 27/7/09 27/7/09 **2717** 69 Tentative CLP Electricity Energisation 1 0 days  $\bigcirc$ Deadline Rolled Up Split Rolled Up Progress Task Progress Date: 30/4/2008

Split

Milestone

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Rolled Up Task

Rolled Up Milestone External Milestone External Tasks Client: DSD HKSAR Page 2 Contractor: Ryoden Engineering Co. Ltd.

Contract No. DE/2005/05 Supply and Installation of Electrical and Mechanical Equipment for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations -Works Programme Rev 3 2008 0 2007 2008 2009 2010
Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Ap ID Task Name Duration Finish Submission of Form 501 for Fire Services 5/9/09 5/9/09 1 day 71 72 **Testing and Commissioning** 65 days 18/8/09 21/10/09 73 Equipment testing 60 days 18/8/09 16/10/09 74 Tentative 3-days wet commissioning 19/10/09 3 days 21/10/09 75 76 Submission of Draft O & M manual 18/6/09 0 days 18/6/09 77 Submission of Final O & M manual 0 days 21/10/09 21/10/09 **21/10** 78 11.10 Training of Employer's Staff 22/10/09 3 days 24/10/09 79 Completion of Section 2 0 days 25/10/09 25/10/09 25/10 81 82 Section 3 Works for Sha Po SPS 1250 27/3/06 28/8/09 days 83 84 Other Drawings Submission and Approval 180 days 27/3/06 22/9/06 85 86 **Equipment Submission and Approval** 240 days 27/3/06 21/11/06 87 Penstock and Actuator 240 days 27/3/06 21/11/06 88 71.5 Main sewage pump and VFD 240 days 27/3/06 21/11/06 89 Inlet Coarse Screen 240 days 27/3/06 21/11/06 240 days 90 10.50 Deodourising System 27/3/06 21/11/06 91 Lifting Appliance 27/3/06 240 days 21/11/06 92 240 days Pipework and Valve 27/3/06 21/11/06 93 Measuring Instrument 240 days 27/3/06 21/11/06 94 215 **20** LV Switchboard 240 days 27/3/06 21/11/06 95 MACS, Telemetry and CCTV 240 days 27/3/06 21/11/06 96 Calcium Nitrate Dosing System 240 days 27/3/06 21/11/06 97 in R Ventilation Fans 240 days 27/3/06 21/11/06 98 **Building Services and Electrical Services** 240 days 27/3/06 21/11/06 Equipment 99 240 days Fire Services Equipment 27/3/06 21/11/06 100 101 102 103 **Equipment Procurement and Manufacture** 240 days 22/11/06 19/7/07 104 Penstock and Actuator 240 days 22/11/06 19/7/07 Task Progress Rolled Up Split Date: 30/4/2008 Project Summary Deadline Split Milestone Rolled Up Task Rolled Up Milestone External Tasks External Milestone Page 3 Client: DSD HKSAR Contractor: Ryoden Engineering Co. Ltd.

Supply and Installation of Electrical and Mechanical Equipment for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations -Works Programme Rev 3 2008 2007 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Finish ID 🚭 Duration Task Name 105 Main sewage pump and VFD 240 days 22/11/06 19/7/07 240 days 22/11/06 19/7/07 106 Inlet Coarse Screen 240 days 22/11/06 19/7/07 107 1.5 Deodourising System 240 days 22/11/06 19/7/07 108 Lifting Appliance 19/7/07 22/11/06 Pipework and Valve 240 days 109 EE EE 240 days 22/11/06 19/7/07 1 P 110 Measuring Instrument 19/7/07 22/11/06 240 days E LV Switchboard 22/11/06 19/7/07 240 days 112 MACS, Telemetry and CCTV 22/11/06 19/7/07 113 Calcium Nitrate Dosing System 240 days 22/11/06 19/7/07 Ventilation Fans 240 days 114 115 19/7/07 **Building Services and Electrical Services** 240 days 22/11/06 Equipment 240 days 116 Fire Services Equipment 22/11/06 19/7/07 117 **2713** 27/3/07 0 days 27/3/07 118 **Application of CLP Power Supply 27/3** 119 0 days 27/3/07 27/3/07 **Application of Telephone Line** 120 304 days 121 19/2/08 18/12/08 **Equipment Delivery** 30 days 15/8/08 13/9/08 122 Penstock and Actuator 28/6/08 30/5/08 123 30 days Main sewage pump and VFD 19/3/08 19/2/08 124 Inlet Coarse Screen 30 days 18/12/08 125 30 days 19/11/08 Deodourising System 18/12/08 19/11/08 126 Lifting Appliance 30 days 9/9/08 11/8/08 127 IN E Pipework and Valve 30 days 18/12/08 128 Measuring Instrument 30 days 19/11/08 1/7/08 30 days 2/6/08 129 LV Switchboard 30 days 19/11/08 18/12/08 130 MACS, Telemetry and CCTV 30 days 19/11/08 18/12/08 131 Calcium Nitrate Dosing System 30 days 19/11/08 18/12/08 132 Ventilation Fans Building Services and Electrical Services 19/11/08 18/12/08 133 30 days Equipment 19/11/08 18/12/08 30 days 134 Fire Services Equipment 135 136 137 **28/5** 138 28/5/09 28/5/09 Submission of Form 314 for Fire Services 0 days Project Summary Rolled Up Split Rolled Up Progress Progress Task Date: 30/4/2008 Rolled Up Milestone External Milestone External Tasks Rolled Up Task Split Milestone Client: DSD HKSAR Page 4 Contractor: Ryoden Engineering Co. Ltd.

Contract No. DE/2005/05 Supply and Installation of Electrical and Mechanical Equipment for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations -Works Programme Rev 3 2007 2008 2009 2010
Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jun Feb Mar Apr May Apr May Apr May Apr May Apr May Apr May Ap ID O Task Name Duration Start Finish 140 Site Take Over Date for Section 3 0 days 31/1/09 31/1/09 141 142 2 to Site Installation 145 days 31/1/09 24/6/09 143 144 HE **Tentative CLP Electricity Energisation** 0 days 28/5/09 28/5/09 145 Submission of Form 501 for Fire Services 0 days 8/7/09 8/7/09 146 147 **Testing and Commissioning** 153 days 27/3/09 26/8/09 148 Equipment testing 57 days 25/6/09 20/8/09 149 Tentative 3-days wet commissioning 21/8/09 23/8/09 3 days 150 151 Submission of Draft O & M manual 0 days 27/3/09 27/3/09 **27/3** 152 Submission of Final O & M manual 0 days 26/8/09 26/8/09 **26/8** 153 Training of Employer's Staff 3 days 17/8/09 19/8/09 154 155 Completion of Section 3 28/8/09 0 days 28/8/09 156 157 Section 4 Works for Kam Tin SPS 1234 27/3/06 12/8/09 days 158 159 Other Drawings Submission and Approval 180 days 27/3/06 22/9/06 160 Surge analysis report submission and approval 120 days 27/3/06 24/7/06 161 162 **Equipment Submission and Approval** 240 days 27/3/06 21/11/06 163 Penstock and Actuator 240 days 27/3/06 21/11/06 164 Main sewage pump and VFD 240 days 27/3/06 21/11/06 165 240 days Inlet Coarse Screen 27/3/06 21/11/06 166 Deodourising System 240 days 27/3/06 21/11/06 167 Lifting Appliance 240 days 27/3/06 21/11/06 168 240 days Pipework and Valve 27/3/06 21/11/06 169 Measuring Instrument 240 days 27/3/06 21/11/06 170 240 days LV Switchboard 27/3/06 21/11/06 171 MACS, Telemetry and CCTV 240 days 27/3/06 21/11/06 172 173 174 Task Progress Rolled Up Split Rolled Up Progress Date: 30/4/2008 Project Summary Split Milestone Rolled Up Task

Rolled Up Split Rolled Up Progress Project Summary Deadline
Rolled Up Milestone External Tasks External Milestone

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Client: DSD HKSAR Contractor: Ryoden Engineering Co. Ltd.

Contract No. DE/2005/05 Supply and Installation of Electrical and Mechanical Equipment for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations -Works Programme Rev 3 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Task Name Duration Start 27/3/06 21/11/06 Ventilation Fans 240 days 27/3/06 21/11/06 176 **Building Services and Electrical Services** 240 days Equipment 177 240 days 27/3/06 21/11/06 Fire Services Equipment 178 19/7/07 179 240 days 22/11/06 **Equipment Procurement and Manufacture** 240 days 22/11/06 19/7/07 180 Penstock and Actuator 240 days 22/11/06 19/7/07 Main sewage pump and VFD 181 22/11/06 19/7/07 240 days Inlet Coarse Screen 182 19/7/07 22/11/06 183 240 days Deodourising System 22/11/06 19/7/07 240 days 184 Lifting Appliance 22/11/06 19/7/07 240 days 185 Pipework and Valve 186 Measuring Instrument 240 days 22/11/06 19/7/07 19/7/07 22/11/06 240 days 187 LV Switchboard 19/7/07 240 days 22/11/06 188 MACS, Telemetry and CCTV 22/11/06 19/7/07 189 240 days Ventilation Fans 240 days 22/11/06 19/7/07 190 **Building Services and Electrical Services** 22/11/06 19/7/07 240 days 191 Fire Services Equipment 192 **27/3** 27/3/07 27/3/07 193 0 days Application of CLP Power Supply 27/3/07 27/3/07 194 Application of Telephone Line 0 days 195 18/12/08 196 5/5/08 **Equipment Delivery** 228 days 30 days 15/8/08 13/9/08 197 10.80 Penstock and Actuator 30/5/08 28/6/08 30 days 198 Main sewage pump and VFD 5/5/08 3/6/08 30 days 199 Inlet Coarse Screen 30 days 19/11/08 18/12/08 Deodourising System 200 19/11/08 18/12/08 30 days 201 Lifting Appliance 9/9/08 11/8/08 202 111 10 Pipework and Valve 30 days 18/12/08 19/11/08 30 days 203 10 85 Measuring Instrument 19/11/08 18/12/08 30 days 204 LV Switchboard 18/12/08 19/11/08 30 days 205 MACS, Telemetry and CCTV 18/12/08 206 Ventilation Fans 30 days 19/11/08 19/11/08 18/12/08 207 **Building Services and Electrical Services** 30 days (33 **36** Equipment 18/12/08 30 days 19/11/08 208 Fire Services Equipment Deadline Rolled Up Split Rolled Up Progress Project Summary Summarv Task Progress Date: 30/4/2008 Rolled Up Milestone External Tasks External Milestone Rolled Up Task Split Milestone

Page 6

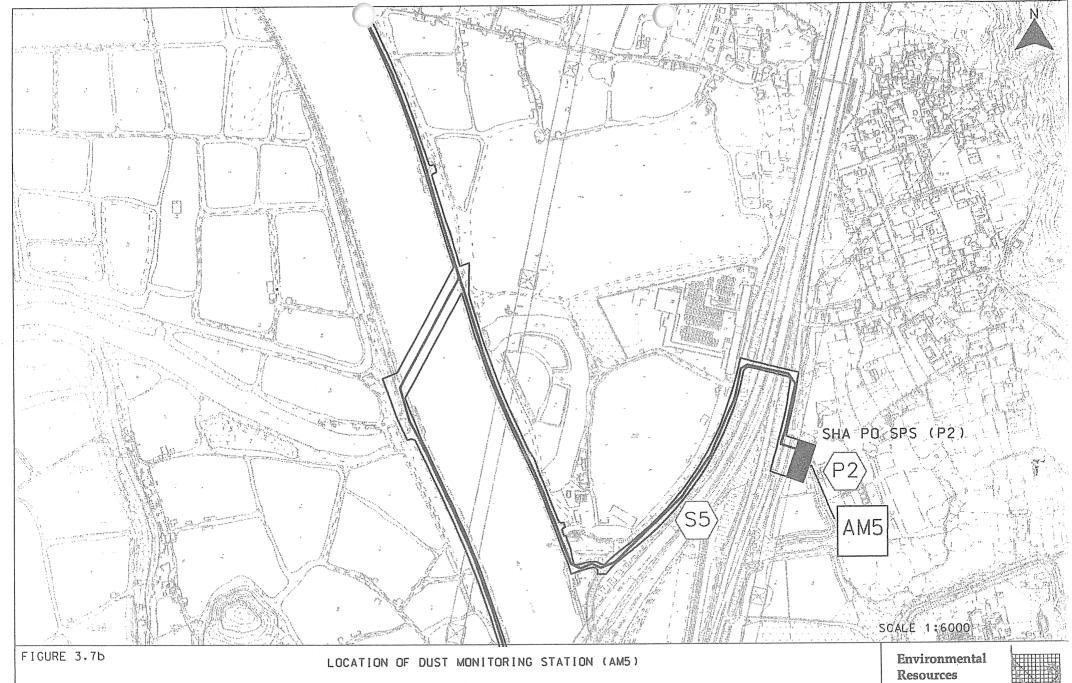
Contract No. DE/2005/05
Supply and Installation of Electrical and Mechanical Equipment for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations
-Works Programme Rev 3

ID <b>6</b> Ta	sk Name	Duration	Start	Finish	Feb Mar Apr May I and Apr May	
.09					Solimar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May	2009
10 5	Site Take Over Date for Section 4	0 days	15/1/09	15/1/09	Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Ec	Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct No
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11				eritati della inamango, proprio con consenza, è quanti della consenza qui la distancia è conse		15/1
12	Submission of Form 314 for Fire Services	0 days	15/4/09	15/4/09		
13			10/ 1/00	10/4/09		1
						15/4
14	Site Installation	145 days	15/1/09	8/6/09		
15				,		
				la de la companya de		
16	Tentative CLP Electricity Energisation	0 days	12/5/09	12/5/09		
7	Submission of Form 501 for Fire Services	O dovo	40/0/00			125
	Second of the Set Alces	0 days	12/6/09	12/6/09		12/5
8			h de veget (1814) Madillocument mitjertet, i Messel i Prophiladord mesper 1983 (de la dissense in			12/6
9	Testing and Commissioning	60 days	9/6/09	7/0/00		
		oo days	310109	7/8/09		
0	Equipment testing	57 days	9/6/09	4/8/09		
1	Tentative 3-days wet commissioning	0 1				
	. on all to o days wer commissioning	3 days	5/8/09	7/8/09		
2						
3	Submission of Draft O & M manual	0 days	25/4/09	05/4/00		u i
		o days	23/4/09	25/4/09		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
4	Submission of Final O & M manual	0 days	12/8/09	12/8/09		<b>25/4</b>
5	Training of Employer's Staff	2 dove	07/7/06			<b>A</b>
		3 days	27/7/09	29/7/09		♠ 12/8
5						
	Completion of Section 4	0 days	12/8/09	43/0/00		1 1
			12/0/09	12/8/09		
						12/8
Sect	ion 5 Remaining Works	90 days	28/7/09	25/10/09		
- Investig			20,1,00	23/10/03		
F V	Provision of Workshop Equipment for Nam Sang Wai SPS	90 days	28/7/09	25/10/09		
F	Provision of Portable and Miscellaneous	75 days	12/8/09	05/40/00		72970200000
	quipment for 3 SPSs	75 days	12/8/09	25/10/09		
F	Provision of minimum spare parts for 3 SPSs	75 days	12/8/09	25/10/09		
	completion of Section 5					
- Aller de au	Presion of Occitoti 9	0 days	25/10/09	25/10/09		
***************************************						<b>♦</b> ¬25/10
Proje	ect Completion Date	0.40	05140100			25/10
		0 days	25/10/09	25/10/09		
						25/10

Date: 30/4/2008	Task Split	 Progress Milestone	Summary Rolled Up Task	Rolled Up Split Rolled Up Milestone	Rolled Up Progress		Project Summary  External Milestone	Deadline	
				Page 7		STATE OF THE PARTY	External Milestone		Client: DSD HKSA Contractor: Ryoden Engineering Co. Ltd

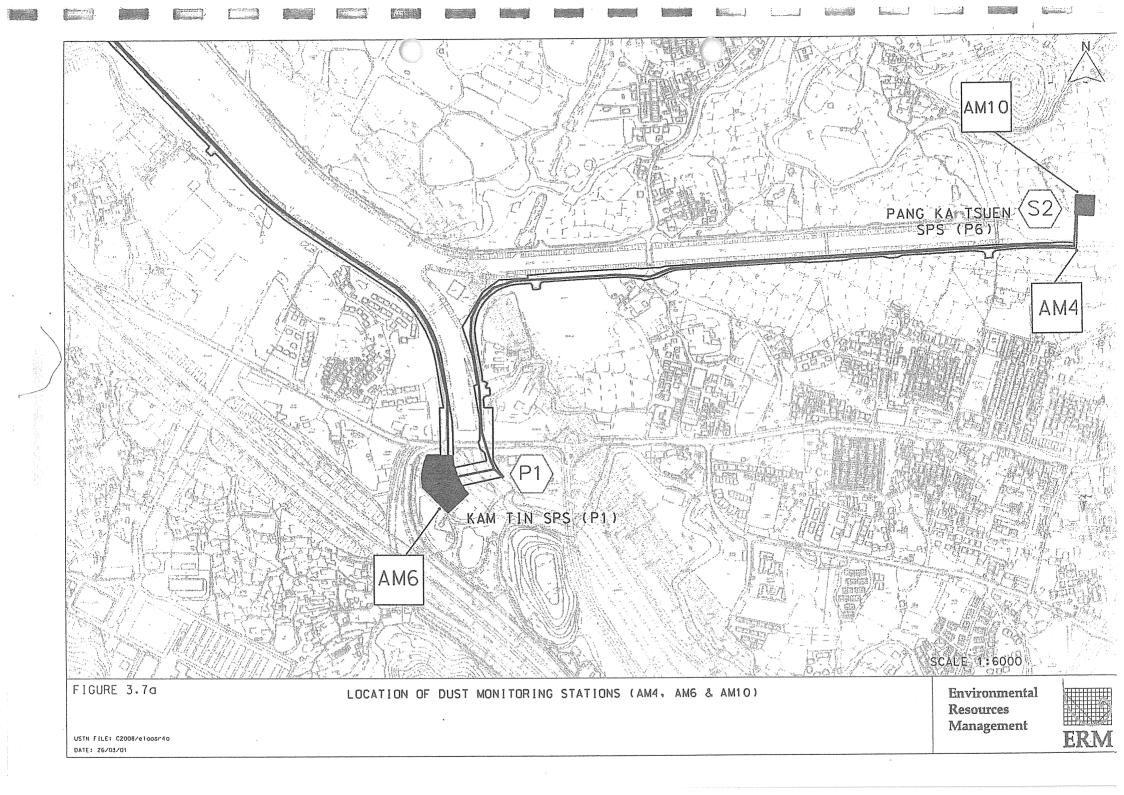


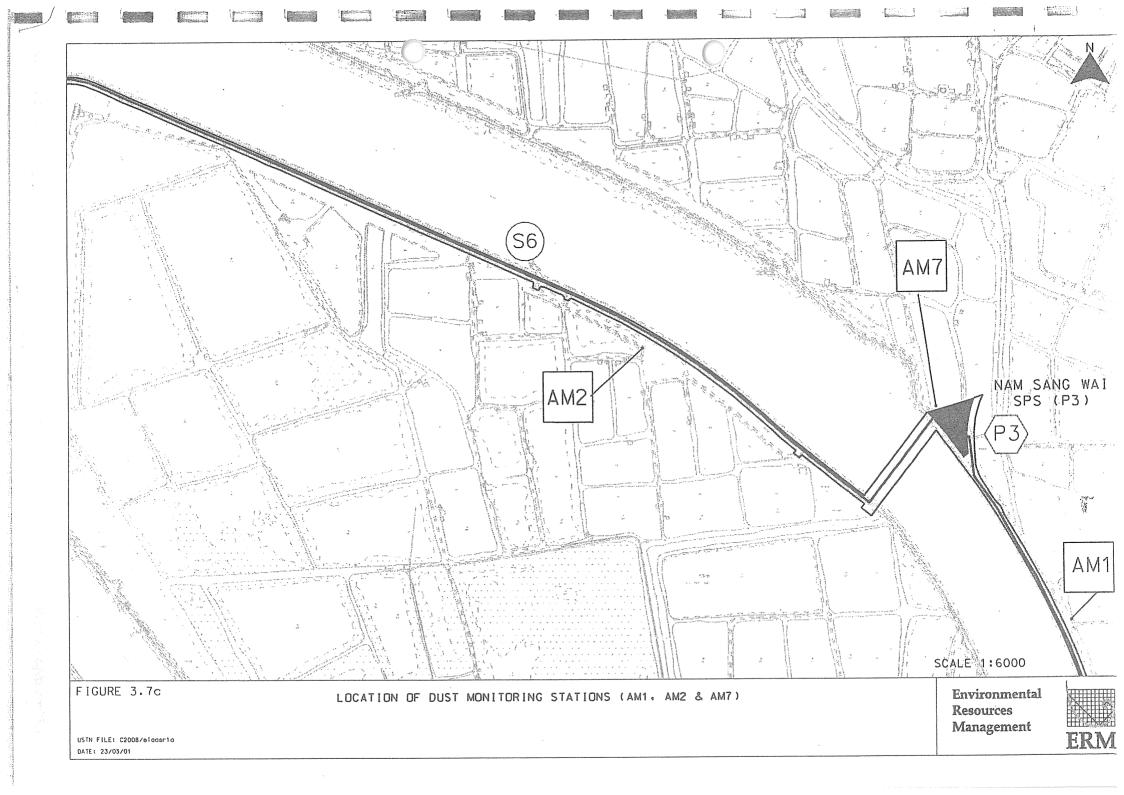
### ANNEX D LOCATION OF MONITORING STATIONS

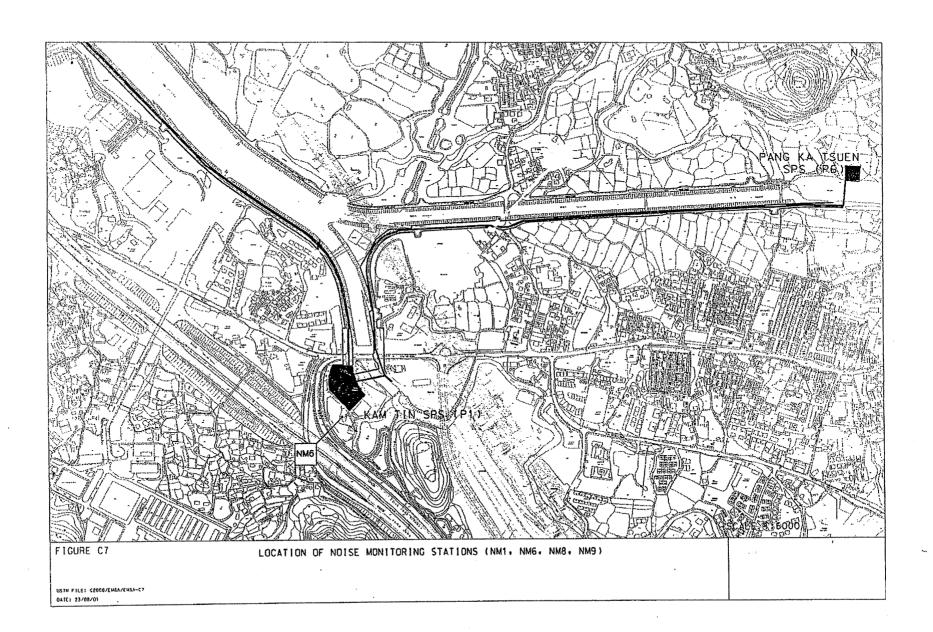


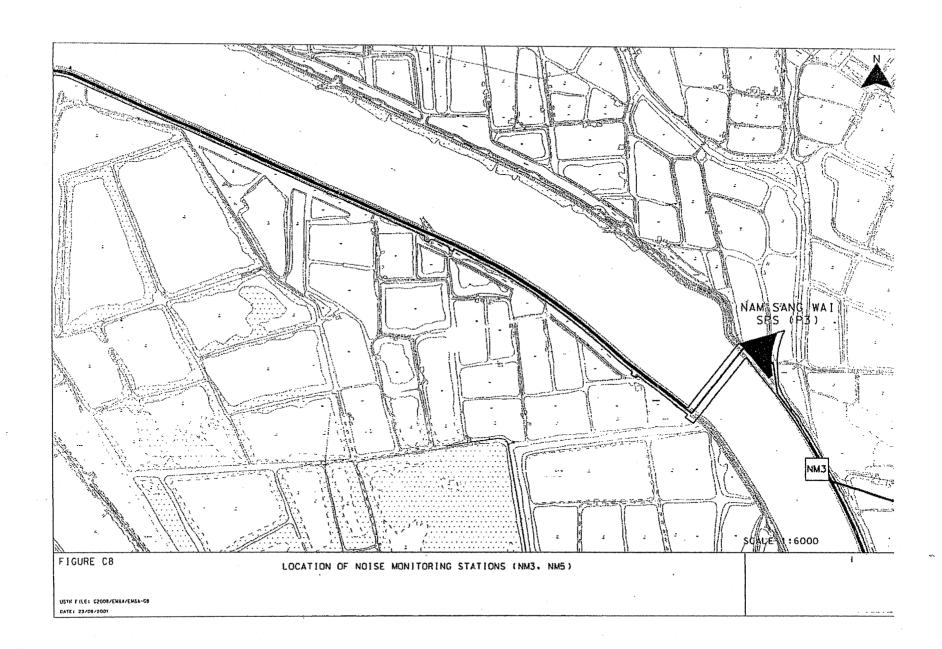
USTN FILE: C2008/elager2a DATE: 23/03/01

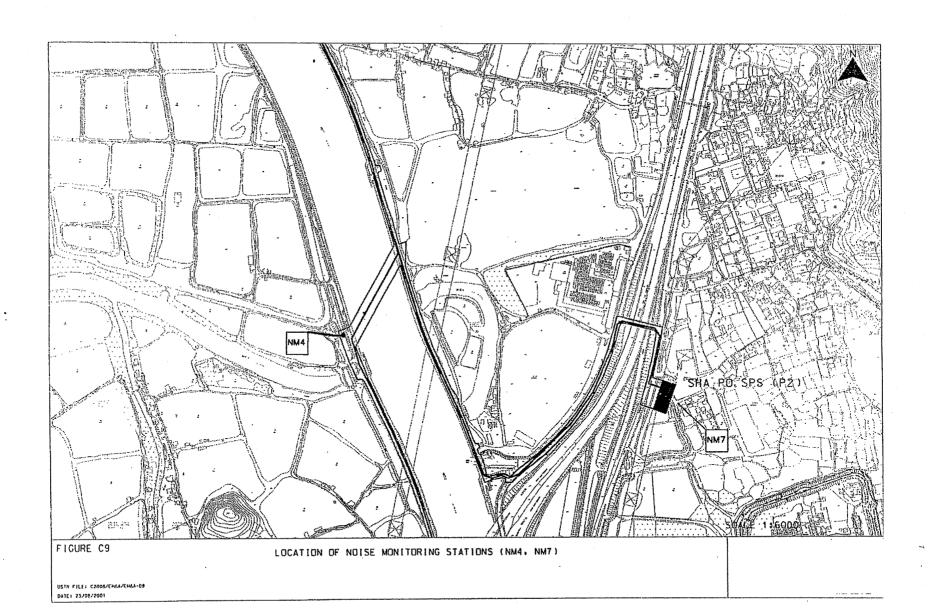
Management













## ANNEX E EVENT AND ACTION PLAN



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

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



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

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



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



### **ANNEX F**

### MITIGATION IMPLEMENTATION SCHEDULE

## DSD Contract No. DE/2005/05 Supply and Installation of E&M Equipments for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations Monthly EM&A Report for March 2009 (No. 2)



EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage		tation		Relevant Legislation & Guidelines
ICI.	IXCI		Wedsures & Wall Concerns	measure		Des		0	Dec	Guidelines
		CONSTRUCTION PHASE								
		AIR QUALITY - Construction Phase								
		The following measures are enforceable under the Air								
		Pollution Control (Construction Dust) Regulations								
		Use of vehicles								
3.5	A3	where a vehicle leaving a construction site is carrying a	1		The Contractor		✓			Part IV, Clause 21, (1), Air
		load of dusty materials, the load should be covered	impacts from vehicle	throughout the full						Pollution Control
		entirely by clean impervious sheeting to ensure that the	movements.	duration of the						(Construction Dust)
		dusty materials do not leak from the vehicle;		construction contract.						Regulations
2.5		Power-driven drilling, and cutting		g:, :1 1	TTI C					D . III. Cl. 22 A.
3.5	A4	• water should be continuously sprayed on the surface	To control potential dust impacts during mechanical	Site wide and throughout the full	The Contractor		<b>✓</b>			Part IV, Clause 22, Air Pollution Control
		where any mechanical breaking operation that causes dust emission is carried out, unless the process is	breaking.	duration of the						(Construction Dust)
		accompanied by the operation of an effective dusty	breaking.	construction contract.						Regulations Dust)
		extraction and filtering device;		construction contract.						Regulations
		NOISE - Construction Phase								
		General Site Clearance – Demolition Works								
4.7.1	B1	• Use of quiet PME which meet the SWLs taken from	To control potential noise	Site wide and	The Contractor		✓			Annex 5 of EIAO-TM
		British Standard, Noise and Vibration Control on	impacts during site clearance	throughout the full						
		Construction Open Sites, BS 5228: Part 1: 1997	and demolition works	duration of the						
		(Examples of these PME are shown in Table F2),		construction contract.						
		Sewers and Rising Mains using Open Trench Method								
4.7.1	В3	• Use of quiet PME which meet the SWLs taken from	To control potential noise		The Contractor		✓			Annex 5 of EIAO-TM
		British Standard, Noise and Vibration Control on	impacts during excavation	throughout the full						
		Construction Open Sites, BS 5228: Part 1: 1997,	works.	duration of the construction contract.						
4.7.1	B4	Use of handheld breakers for all initial road opening	To control potential noise	Where there are NSRs	The Contractor		/			
7.7.1	D-1	activities, when breaking tarmac/concrete road surface to	impacts during road opening	located within 50m of	The Contractor		•			
		a depth of 300mm or when granular material is reached.	activities.	the line of sight.						
				Throughout the full						
				duration of the road						
				opening activities.						
4.7.1	B5	• Use of movable noise barriers or 3 sided enclosures for	To control potential noise	Where there are NSRs	The Contractor		✓			
		all initial road opening activities (breaking	impacts during road opening	located within 50m of						
		tarmac/concrete road surface to a depth of 300mm or	activities.	the line of sight. Throughout the full						
		when granular material is reached), where there are NSRs located within 50m of the line of sight from the works		duration of the road						
		area.		opening activities.						
		Sewers and Rising Mains using Pipe Jacking Method		oponing activities.				1		
4.7.1	B6	• Use of quiet PME which meet the SWLs taken from	To control potential noise	Site wide and	The Contractor		<b>✓</b>			Annex 5 of EIAO-TM
		British Standard, Noise and Vibration Control on	impacts from PME during	throughout the full						
		Construction Open Sites, BS 5228: Part 1: 1997,	construction works	duration of the						
		•		construction contract.						
1		Road Pavement and Finishes		<u></u>	L			1		
4.7.1	B7	• Use of quiet PME which meet the SWLs taken from	To control potential noise		The Contractor		✓			Annex 5 of EIAO-TM
		British Standard, Noise and Vibration Control on	impacts from PME during	throughout the full						
1	I		pavement and finish works	duration of the	I	l	1	1	1	1

## DSD Contract No. DE/2005/05 Supply and Installation of E&M Equipments for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations Monthly EM&A Report for March 2009 (No. 2)



EIA*	EM&A	Environmental Protection Measures	Objectives of the Recommended		Implementation Agent		Implementation Stage**			Relevant Legislation &	
Ref.	Ref		Measures & Main Concerns	measure		Des		О	Dec	Guidelines	
		Construction Open Sites, BS 5228: Part 1: 1997,		construction contract.		Des			Dec		
		WASTE - Construction Phase		construction contract.							
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 (Waste Disposal (Chemical Waste) (General) Regulations); and</li> <li>Dumping Licence (Land (Miscellaneous Provisions) Ordinance (Cap 28))</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.		✓	<b>√</b>			Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste)(General) Regulation (Cap 354), the Land (Miscellaneous Provisions) Ordinance (Cap 28))	
		Management of Waste Disposal									
6.6.2	D5	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.  Waste Management Plan	To monitor the disposal of C&DM and solid wastes at public filling facilities and landfills and to control flytipping.	To be implemented at all worksites throughout the full duration of the construction phase.	The Engineer/Contractor		<b>✓</b>			Land (Miscellaneous Provisions) Ordinance (Cap 295) and Works Bureau Technical Circular No. 5/99.	
6.6.1 and 6.6.2	D6	<ul> <li>A Waste Management Plan (WMP) should be prepared and this WMP should be submitted to the Engineer for approval.</li> <li>Different types of waste should be segregated and stored in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. An on-site temporary storage area should be provided.</li> <li>A recording system for the amount of wastes generated, recycled and disposal (including the disposal sites) should be proposed.</li> <li>Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.</li> </ul>	To control the disposal of and management of waste.	To be implemented at all worksites throughout the full duration of the construction phase.			<b>√</b>			Works Bureau Technical Circular No 29/2000-Waste Management Plan	
		EM&A REQUIEMENTS - Construction Phase									
3.7	Н1	Air Quality Subject to the Environmental Protection Departments (EPDs) agreement, construction phase dust monitoring shall be undertaken at the following locations in accordance with the recommendations of the EIA (NDE).  Sewer in Au Tau Area (S7)  Worksite boundary near San Yuen Long Centre (AM7)	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.			✓			Air Pollution Control (Construction Dust) Regulations	
		Construction Noise					1				
4.9.1	12	Subject to the Environmental Protection Departments (EPDs agreement, construction phase noise monitoring shall be undertaken at the following locations in accordance with the recommendations of the EIA (NDE).	monitoring stations to ensure the	monitoring locations	Team (ET) and					Noise Control Ordinance	

### DSD Contract No. DE/2005/05 Supply and Installation of E&M Equipments for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations Monthly EM&A Report for March 2009 (No. 2)



EM&A Ref		Objectives of the Recommended Measures & Main Concerns	Location measure	of th	Implementation Agent	Imple Stage	ment	ation		Relevant Guidelines	Legislation	&
									Dec			
	(NM3) Sun Yuen Long Centre;											
	• (NM6) Kam Tin San Tsuen;											
	(NM7) Scattered House at Kam Sheung Road near Kam Tin Shi											
	and at any additional locations, where considered											_
	necessary, in agreement with EPD											

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



# ANNEX G EQUIPMENT CALIBRATION CERTIFICATES



## Equipment Calibration List for DSD Contract No. DE/2005/05 Supply and Installation of E&M Equipments for Nam Sang Wai, Sha Po and Kam Tin Sewage Pumping Stations

Items	Aspect	Description of Equipment	Serial No.	Date of Calibration	Date of Next Calibration
1**		Greasby Anderson GMWS2310 High Volume Sampler	0355 (AM5)	02 Jan 09	02 Apr 09
2**		Greasby Anderson GMWS2310 High Volume Sampler	10394 (AM6)	02 Jan 09	02 Apr 09
3**		Greasby Anderson GMWS2310 High Volume Sampler	1283 (AM7)	14 Feb 09	14 Apr 09
4**	Noise	Bruel & Kjaer 4231 Acoustical Calibrator	2326408	22 Apr 08	22 Apr 09
5**		Bruel & Kjaer 2238 Integrating Sound Level Meter	2285721	22 Apr 08	22 Apr 09

Note: Calibration certificates will only be provided if monitoring equipment is re-calibrated or new.

<sup>\*</sup>Calibration done in this reporting month, see calibration certificate attached.

<sup>\*\*</sup>Calibration will be done in next reporting month.



### **ANNEX H**

# METEOROLOGICAL DATA IN THE REPORTING MONTH



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

			Lau Fau Shan Weather Station							
Date	:	Weather		Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction			
1-Mar-09	Sun	cloudy/rain/moderate/fresh	0.8	18.6	8.7	74.5	E/NE			
2-Mar-09	Mon	cloudy/rain/moderate/fresh	Trace	18.1	10	80.5	E/NE			
3-Mar-09	Tue	cloudy/sunny intervals/moderate	Trace	18.6	9.2	67	E/NE			
4-Mar-09	Wed	cloudy/rain/mist/moderate/fresh	0.4	19.7	9.5	72.5	E/NE			
5-Mar-09	Thu	foggy/rain/moderate/fresh	28.5	23.3	21.5	78	E/NE			
6-Mar-09	Fri	cloudy/rain/squally thunderstorm/cool/moderate/fresh	11.6	15.4	27	84.5	E/NE			
7-Mar-09	Sat	cool/rain/moderate/fresh	0.2	12.9	17	85.7	N/NE			
8-Mar-09	Sun	cloudy/moderate/sunny intervals	0.1	13.7	8.5	90	E/NE			
9-Mar-09	Mon	sunny intervals/cloudy/moderate/warm	0.4	16.1	10.2	77.7	N/NE			
10-Mar-09	Tue	cloudy/fresh/strong	0	19.2	10.5	67.7	E/SE			
11-Mar-09	Wed	cloudy/sunny intervals/fresh/strong	Trace	22.4	11.5	69.5	Е			
12-Mar-09	Thu	cloudy/sunny intervals/misty/fresh/strong	Trace	23.2	19.5	71	E/SE			
13-Mar-09	Fri	cloudy/rain/fog/light winds	Trace	19.1	19	75.5	E/NE			
14-Mar-09	Sat	fine/dry/moderate/fresh	Trace	16.4	34	58.5	N/NE			
15-Mar-09	Sun	fine/moderate	0	17.4	9	52	S/SE			
16-Mar-09	Mon	fine/moderate	0	19.4	7.7	72	E/NE			
17-Mar-09	Tue	fine/moderate	0	22.3	12	74.5	W/SW			
18-Mar-09	Wed	fine/warm/cloudy/light winds	0	23	11.5	66.5	S/SE			
19-Mar-09	Thu	mist/sunny periods/cloudy/light winds	0	22	14.5	80	S/SE			
20-Mar-09	Fri	fog/sunny periods/cloudy/light winds	0	24.1	8.5	84.5	W/SW			
21-Mar-09	Sat	cloudy/fog/rain/moderate/fresh	0.1	25.1	12.2	78.7	S/SE			
22-Mar-09	Sun	fog/light winds/rain	Trace	26.4	15.2	78	SW			
23-Mar-09	Mon	foggy/rain/moderate	Trace	26.7	9.7	80.7	S/SE			
24-Mar-09	Tue	cloudy/rain/moderate/fresh	27.1	20.8	18	76.5	E/NE			
25-Mar-09	Wed	cloudy/rain/squally thunderstorm/moderate/fresh	27.9	18.1	13	83.2	E/NE			
26-Mar-09	Thu	cloudy/rain/moderate/fresh	Trace	18.1	11.5	76.5	E/NE			
27-Mar-09	Fri	cloudy/rain/mist/moderate/fresh	10.4	20.6	14	84.5	Е			
28-Mar-09	Sat	cloudy/fog/rain/thunderstorm/moderate	0.6	24.4	10	86.2	E/NE			
29-Mar-09	Sun	cloudy/rain/fresh/strong	2.6	19.1	11.5	84.5	E/NE			
30-Mar-09	Mon	sunny intervals/cloudy/fresh/strong	Trace	18.7	12.5	78.5	E/NE			
31-Mar-09	Tue	sunny periods/cloudy/iterate/fresh	Trace	20	12	75	E/NE			

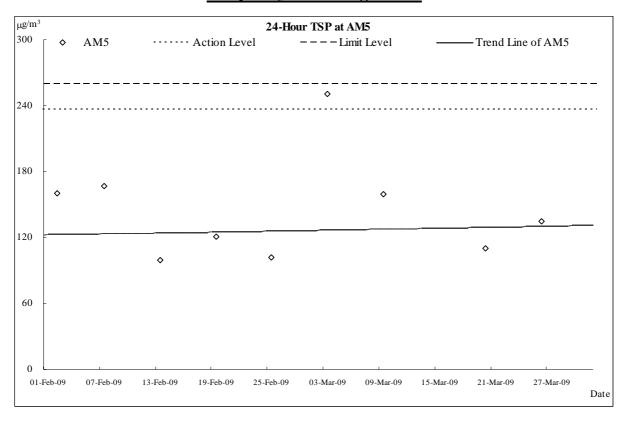


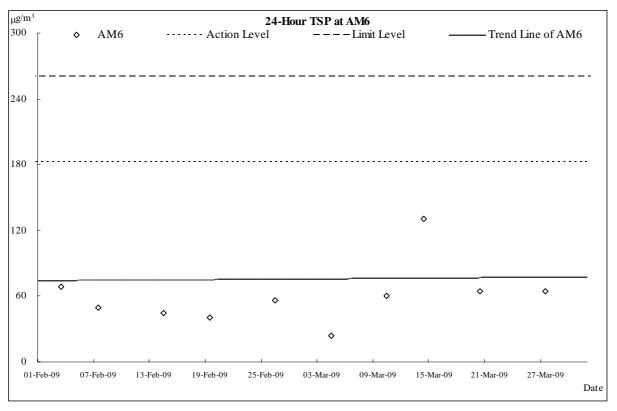
### **ANNEX I**

# GRAPHICAL PLOTS OF AIR QUALITY AND CONSTRUCTION NOISE MONITORING RESULTS

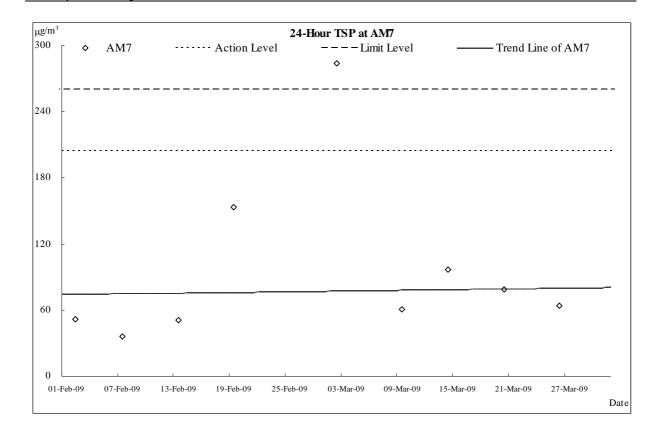


### **Air Quality Monitoring Results**



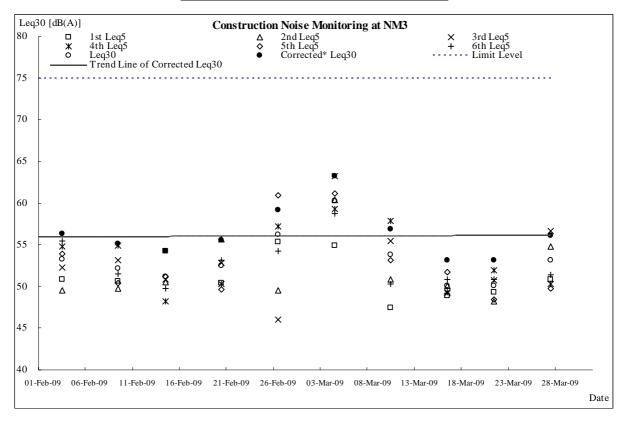


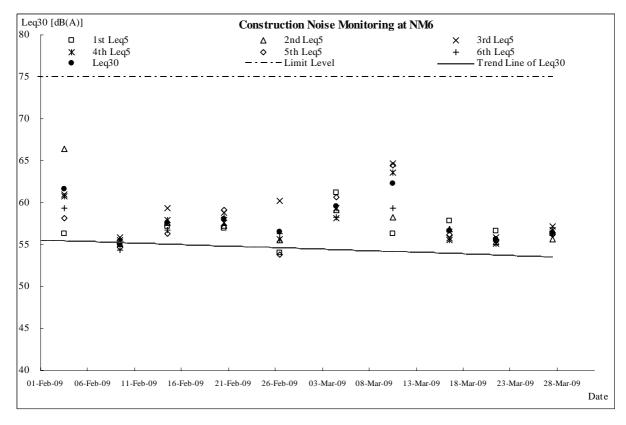




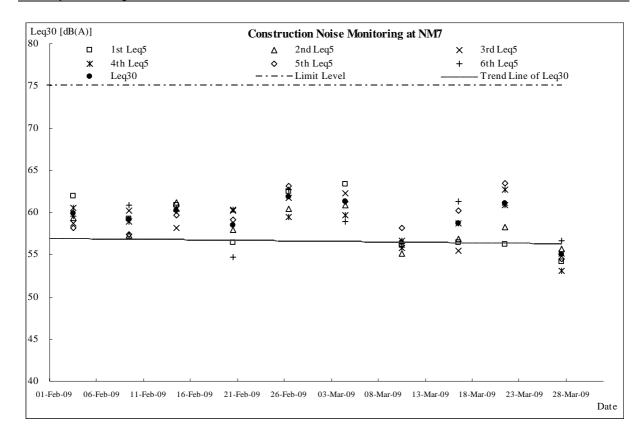


### **Construction Noise Monitoring Results**











# ANNEX J RESPONE TO COMMENT

#### Monthly EM&A Report for March 2009 (No. 2)

Project:	DSD Contract No. DE/2005/05 Supply	and Installation of E&M Equipments	for Nam Sang Wai, Sha Po and Kam Tin

**Sewage Pumping Stations** 

Comment From: IEC [Received from E-mail on ?? April 2009]

Report/Document Monthly Environmental Monitoring and Audit (EM&A) Report for March 2009 (R0013 Revision 1)

Items	Section / Paragraph	Comments	ET's Response