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## **ATAL-DEGREMONT-CHINA HARBOUR JOINT VENTURE**

CONTRACT NO. DC/2013/10 - DESIGN,  
BUILD AND OPERATE SAN WAI  
SEWAGE TREATMENT WORKS –  
PHASE 1

**MONTHLY EM&A REPORT  
NO. 26**

**(01 JUNE – 30 JUNE 2019)**

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Issued Date: 06 July 2019

Report No.: ENA95182

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Drainage Services Department  
Sewage Services Branch  
Harbour Area Treatment Scheme  
5/F, Western Magistracy  
2A Po Fu Lam Road  
Hong Kong

Your reference:

Our reference: HKDSD203/50/105855

Date: 9 July 2019

Attention: Mr Albert Wong

**BY EMAIL & POST**  
**(email: [awong@dsd.gov.hk](mailto:awong@dsd.gov.hk))**

Dear Sirs

Agreement No. HATS 02/2016  
Services for Independent Environmental Checker (IEC) for  
Contract No. DC/2013/10 – Design, Build and Operate San Wai Sewage Treatment Works – Phase 1  
Monthly Environmental Monitoring and Audit Report No.26 (June 2019)

We refer to emails of 6 and 9 July 2019 from ETS-Testconsult Limited attaching the Monthly Environmental Monitoring and Audit Report No.26 (June 2019).

We have no further comment and hereby verify the Monthly Environmental Monitoring and Audit Report No.26 (June 2019) in accordance with Clause 5.4 of the Environmental Permit no. EP-464/2013.

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Francis Lau on 2618 2831.

Yours faithfully  
ANewR CONSULTING LIMITED



Adi Lee

Independent Environmental Checker

LYMA/LHYF/lhnh

cc AECOM – Mr Patrick Leung (email: [patrick.leung@swstw-aeom.com](mailto:patrick.leung@swstw-aeom.com))  
ETS-Testconsult Limited – Mr C L Lau (email: [env@ets-testconsult.com](mailto:env@ets-testconsult.com))



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## EXECUTIVE SUMMARY

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works – Stage 1 (the Project) (hereafter referred to as “the Contract”). The Contract was awarded to ATAL-DEGREMONT-CHINA HARBOUR JOINT VENTURE (ADCJV) by the Drainage Services Department (DSD) and ETS-Testconsult Limited was appointed as the Environmental Team (ET) by ADCJV to implement the EM&A program in compliance with the EP and the EM&A Manuals.

According to the Section 25 of the Particular Specification (PS) and the Environmental Permit No. EP-464/2013, an EM&A programme should be implemented in accordance with the procedures and requirements in the EM&A Manual of the approved EIA report (Registration No. AEIAR-072/2003). The scope of monitoring works includes air quality, construction noise, water quality and environmental site audit.

Baseline monitoring was completed in April 2017. Action and Limit Levels were established for air quality, noise and water quality parameters based on the baseline monitoring results.

This is the twenty-sixth Monthly Environmental Monitoring and Audit (EM&A) Report for the Contract which summaries findings of the EM&A works conducted during the reporting period from 01 June 2019 to 30 June 2019.

### **Site Activities**

As informed by the Contractor, site activities were carried out in this reporting month:

- *Backfilling;*
- *Water Tightness Test;*
- *Internal ABWF;*
- *External ABWF;*
- *Superstructure (RC and Metalworks);*
- *Retaining Wall, U-Channel & Stormwater Pipe;*
- *Underground Utilities Along EVA*



### **Environmental Monitoring and Audit Progress**

The monthly EM&A programme was undertaken in accordance with the EM&A Manual for this Contract. The summary of the monitoring activities in this reporting month is listed below:

- *24-hour TSP Monitoring: 5 Occasions at 2 designated locations*
- *1-hour TSP Monitoring: 15 Occasions at 2 designated locations*
- *Noise Monitoring (Day-time): 5 Occasions at 2 designated locations*
- *Water Quality Monitoring: 13 Occasions at 1 designated location*
- *Weekly Site inspection: 4 Occasions*

### **Air Quality Monitoring**

No exceedance of Action and Limit levels was recorded for 1-hr and 24-hr TSP monitoring in the reporting month.

### **Noise Monitoring**

No exceedance of Action and Limit levels for noise monitoring was recorded in the reporting month.

### **Water Quality Monitoring**

According to the summary of water monitoring results, no exceedance of Action and Limit levels was recorded in this reporting month.

### **Weekly Site Inspections**

In general, performance on environmental mitigation measures implemented was found to be satisfactory in this reporting month. The major findings observed during site inspections are presented in the **Section 5.0**.

### **Complaint Log**

There was no complaint received in relation to the environmental impact during the reporting period.

### **Notifications of Summons and Successful Prosecutions**

There were no notifications of summons or prosecutions received during the reporting period.

### **Reporting Change**

There were no reporting changes during the reporting period.

### **Future Key Issues**

The future key issues to be undertaken in the upcoming month are as follows:

- *Chemical and waste management;*
- *Treatment of runoff and wastewater prior to discharge; and*
- *Dust and Noise generated from construction activities*



## 1. INTRODUCTION

### 1.1. Basic Project Information

- 1.1.1. This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works – Stage 1 (the Project) (hereafter referred to as “the Contract”). The Contract was awarded to ATAL-DEGREMONT-CHINA HARBOUR JOINT VENTURE (ADCJV) by the Drainage Services Department (DSD) and ETS-Testconsult Limited was appointed as the Environmental Team (ET) by ADCJV to implement the EM&A program in compliance with the EP and the EM&A Manuals.
- 1.1.2. The project involves expansion of the preliminary treatment works at San Wai STW from 164,000 m<sup>3</sup>/d to 200,000 m<sup>3</sup>/d Average Dry Weather Flow, upgrading the preliminary treatment level to CEPT and adding centralized disinfection. The site layout plan is shown in **Appendix A**.
- 1.1.3. According to the Section 25 of the Particular Specification (PS) and the Environmental Permit No. EP-464/2013, an EM&A programme should be implemented by an independent Environmental Team (ET) in accordance with the procedures and requirements in the EM&A Manual of the approved EIA report (Registration No. AEIAR-072/2003). These documents are available through the EIA Ordinance Register. The construction works of the Contract commenced on 16 May 2017.
- 1.1.4. The scope of monitoring works includes air quality, construction noise, water quality and environmental site audit. The EM&A requirements for each parameter described in the following sections include:
- *All monitoring parameters;*
  - *Monitoring schedules for the reporting month and forthcoming months;*
  - *Action and Limit levels for all environmental parameters;*
  - *Event/Action Plans;*
  - *Environmental mitigation measures, as recommended in the Project EIA study final report; and*
  - *Environmental requirements in contract documents.*
- 1.1.5. As part of the project EM&A program, baseline monitoring was conducted from 21 March 2017 to 15 April 2017 to determine the ambient environmental conditions before the project commence any major construction works and it had been verified by IEC and endorsed by EPD.
- 1.1.6. This is the twenty-sixth Monthly Environmental Monitoring and Audit (EM&A) Report for the Contract which summaries the audit findings of the EM&A programme during the reporting period from 01 June 2019 to 30 June 2019.

### 1.2. Project Organization

- 1.2.1. The project organization structure and lines of communication with respect to the on-site environmental management structure is shown in **Appendix B**. The key personnel contact names and numbers are summarized in **Table 1.1**.

**Table 1.1 Contact Information of Key Personnel**

Party	Position	Name of Key Staff	Tel. No.	E-mail
Supervising Officer (AECOM Asia Co. Ltd.)	Resident Engineer	Mr. Patrick Leung	5222 6561	patrick.leung@swstw-aecom.com
Independent Environmental Checker (ANewR Consulting Limited)	Technical Director	Mr. Adi Lee	2618 2836	aymlee@anewr.com
Contractor (ATAL-DEGREMONT-CHINA HARBOUR JOINT VENTURE)	Environmental Officer	Mr. Johnny So	9513 8899	johnny.so@c302.checkk.com
Environmental Team (ETS-Testconsult Ltd.)	Environmental Team Leader	Mr. C. L. Lau	2946 7791	env@ets-testconsult.com

### 1.3. Construction Programme

1.3.1. A copy of the Contractor's construction programme is provided in **Appendix C**.

### 1.4. Construction Works Undertaken During the Reporting Period

1.4.1. A summary of the construction activities undertaken during this reporting period is shown below:

- *Backfilling;*
- *Water Tightness Test;*
- *Internal ABWF;*
- *External ABWF;*
- *Superstructure (RC and Metalworks);*
- *Retaining Wall, U-Channel & Stormwater Pipe;*
- *Underground Utilities Along EVA*

## 2. AIR QUALITY MONITORING

### 2.1. Monitoring Requirements

- 2.1.1. 1-hr and 24-hr TSP levels were monitored in the reporting month in accordance with the EM&A Manual. Two air monitoring locations were selected which was shown in **Figure 1**.

### 2.2. Monitoring Equipment

#### 1-hour TSP Monitoring

1-hour TSP levels were measured by using dust meter which are capable of producing comparable results as the by high volume sampling method, to indicate short event impacts. The dust meter is compliant to the clause 1.2.5 of "General Technical Requirement of Environmental Monitoring" and clause 2.2 of "Generic Environmental Monitoring and Audit Manual".

**Table 2.1** summarized the dust meter model used during the baseline monitoring. Copies of calibration certificates for dust meters were attached in **Appendix D1**.

**Table 2.1 Air Quality Monitoring Equipment**

Equipment	Model
Dust Meter	SIBATA LD-3B
High volume sampler (HVS)	Greasby GMW (GS2310)
Calibrator	Tisch TE-5025A

#### 1-hr air quality monitoring (Dust Meter)

##### Measuring Procedures

The measuring procedures of the dust meter are in accordance with the Manufacturer's instruction Manual as follows:

- Press POWER to ON, check the battery indicator to ensure whether the power supply is enough to conduct the TSP monitoring;
- Press TIMER SET to Manual;
- Press START/STOP SWITCH to start the TSP monitoring;
- Press START/STOP SWITCH to stop the TSP monitoring after monitoring complete;
- Record measured COUNT directly from the dust meter and calculate the TSP level by using the equation of the certificate.

##### Maintenance & Calibration (QA/QC)

- Dust meter should be checked at 3-month intervals and calibrated at half-year intervals throughout all stages of air quality monitoring.

#### 24-hr air quality monitoring (HVS)

##### Instrumentation

High volume sampler, as HVS, (Greasby GMWS2310) complete with appropriate sampling inlets were employed for both 1-hour and 24-hour TSP monitoring. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

##### Installation

The installation of HVS refers to the requirement stated in EM&A Manual.

##### Operation/Analytical Procedures

Operating/analytical procedures for the operation of HVS are as below:

- Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 0.6m<sup>3</sup>/min and 1.7m<sup>3</sup>/min.) in accordance with the manufacturer's

instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50. The flow rate was indicated on the flow rate chart.

- For TSP sampling, fiberglass filters (Whatman G653) were used.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated 5 minutes to establish thermal equilibrium before placing any filter media at designated air monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holder frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The programmable timer will be set for a sampling month of 1 hour or 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number.).
- After sampling, the filter was transferred from the filter holder of the HVS to a sealed plastic bag and sent to the laboratory for weighting. The elapsed time was also recoded.
- Before weighting, all filters were equilibrated in desiccators for 24 hour with the temperature of  $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$  and the relative humidity (RH)  $<50\% \pm 5\%$ .

#### Maintenance & Calibration (QA/QC)

- HVS and their accessories should be maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVS should be calibrated at bi-monthly intervals.

#### Wind Data Monitoring

Wind data (wind speed and wind direction) were directly extracted from Hong Kong Observatory. All wind data during this reporting month are shown in **Appendix G**.

### **2.3. Monitoring Parameters, Frequency and Duration**

- 2.3.1.** Table 2.2 summarizes the monitoring parameters, monitoring duration and frequencies of impact air quality monitoring.

**Table 2.2 Monitoring Parameters, Duration and Frequencies of Impact Air Quality Monitoring**

Parameter	Duration	Frequency
1-hr TSP	1 hr (0800-1900)	Three times per 6 days
24-hr TSP	24 hr	Once per 6 days

- 2.3.2.** In this reporting period, a total of 15 occasions of 1-hour TSP monitoring and 5 events of 24-hour TSP monitoring were undertaken and the schedule was shown in **Table 2.3**

**Table 2.3 Time Schedule of Impact Air Quality Monitoring**

June 2019						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4 ▼	5	6	7	8
9	10 ▼	11	12	13	14	15 ▼
16	17	18	19	20	21 ▼	22
23	24	25	26	27 ▼	28	29
30						

Remark: ( ▼ ) = Air quality monitoring carried out by ET



## 2.4. Action and Limit Levels

The criteria for Action and Limit levels have been set out in the contract document of the Project as follows:

**Table 2.4 The criteria of Action and Limit Levels for Air Quality**

Parameters	Action	Limit
1-hour TSP Level ( $\mu\text{g}/\text{m}^3$ )	For baseline level $\leq 384\mu\text{g}/\text{m}^3$ , Action level = (baseline level plus*1.3 + Limit Level) / 2	500 $\mu\text{g}/\text{m}^3$
	For baseline level $>384\mu\text{g}/\text{m}^3$ , Action level = Limit Level	
24-hour TSP Level ( $\mu\text{g}/\text{m}^3$ )	For baseline level $< 200\mu\text{g}/\text{m}^3$ , Action level = (baseline level plus*1.3 + Limit Level) / 2	260 $\mu\text{g}/\text{m}^3$
	For baseline level $\geq 200\mu\text{g}/\text{m}^3$ , Action level = Limit Level	

Following the criteria shown in **Table 2.4**, the Action and Limit levels for 1-hour TSP derived as illustrated in **Table 2.5**.

**Table 2.5 Action and Limit Levels for 1-hour TSP and 24-hour TSP**

Air Quality Monitoring Station	1-hr TSP ( $\mu\text{g}/\text{m}^3$ )		24-hr TSP ( $\mu\text{g}/\text{m}^3$ )	
	Action Level	Limit Level	Action Level	Limit Level
ASR1a	309	500	260	260
ASR2b	292	500	228	260

## 2.5. Results and Observations

### 2.5.1. 1-hour and 24-hour TSP Monitoring Results

Monitoring data of both 1-hour and 24-hour TSP monitoring carried out in this reporting month are summarized in **Appendix D2**. Graphical presentation of 1-hour and 24-hour TSP monitoring results for the reporting month is shown in **Appendix D3**. Wind data included wind speed and wind direction was extracted from Hong Kong Observatory during this reporting month and is presented in **Appendix G**.

No exceedance of Action and Limit Level of 1-hr TSP and 24-hour TSP monitoring results was recorded during the reporting month.

### 2.5.2. Observation

Generally, 1-hour TSP and 24-hour TSP monitoring results fluctuated well below the Action Level in this reporting period. The major dust source observed near the monitoring stations was mainly from vehicles passing by the container yards and general earth works. It can be concluded that the contractor implemented sufficient dust mitigation measures during this reporting month.

## 2.6. Event and Action Plan

If the impact monitoring results exceed the Action and Limit Levels, the actions specified in **Table 2.6** shall be carried out.

**Table 2.6 Event and Action Plan for Air Quality (Dust) during Construction Phase**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded for one sample	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
Action Level being exceeded for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Discuss with IEC and Contractor on remedial actions required;</li> <li>6. If exceedance continues, arrange meeting with IEC and ER;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>
Limit Level being exceeded for one sample	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC, ER and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Assess</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method;</li> <li>2. Discuss with Contractor on the possible mitigation measures;</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Check monitoring data and Contractor's working methods;</li> <li>4. Discuss with</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to ER within 3 working days of notification;</li> <li>3. Implement the agreed</li> </ol>

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	effectiveness of Contractor's remedial actions;  8. Keep EPD and ER informed of the results.	6. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly.	IEC and Contractor on potential remedial actions;  4. Ensure remedial actions properly implemented.	proposals;  4. Amend proposal if appropriate.
Limit Level being exceeded for two or more consecutive samples	1. Identify source; 2. Inform IEC, ER and EPD the causes & actions taken for the exceedance s; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Investigate the causes of exceedance; 6. Arrange meeting with EPD and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with Contractor on the possible mitigation measures; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Supervise the implementation of mitigation measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 4. Discuss with IEC and the Contractor on potential remedial actions; 5. Review Contractor's remedial actions whenever necessary to assure their effectiveness; 6. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not resolved; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

### 3. NOISE MONITORING

#### 3.1. Monitoring Requirements

- 3.1.1. Noise levels ( $L_{eq}$ ,  $L_{10}$  and  $L_{90}$ ) were monitored in the reporting month in accordance with the EM&A Manual.

#### 3.2. Monitoring Equipment

Sound level meters used for impact noise monitoring were Type 1 sound level meters capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level ( $L_{eq}$ ) and percentile sound pressure level ( $L_x$ ). They complied with International Electro technical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). **Table 3.1** summarized the noise monitoring equipment model used during the baseline monitoring. Copies of calibration certificates for noise meters and calibrators were attached in **Appendix E1**.

**Table 3.1 Noise Monitoring Equipment**

Noise Monitoring Equipment	Model
Sound Level Meter	Rion NL-52
Sound Level Calibrator	Rion NC-73 / Castle GA607

#### 3.3. Monitoring Duration and Frequency

- 3.3.1. Impact noise monitoring for the A-weighted levels  $L_{eq}$ ,  $L_{10}$  and  $L_{90}$  in 30-minute interval was recorded once per 6 days.
- 3.3.2. In this reporting period, a total of 5 occasions of noise monitoring were undertaken and the schedule was shown in **Table 3.2**

**Table 3.2 Time Schedule of Impact Noise Monitoring**

June 2019						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4 ▼	5	6	7	8
9	10 ▼	11	12	13	14	15 ▼
16	17	18	19	20	21 ▼	22
23	24	25	26	27 ▼	28	29
30						

Remark: ( ▼ ) = Noise monitoring carried out by ET

#### 3.4. Monitoring Locations

Two noise monitoring stations, NSR1a (晉榮貨櫃服務有限公司) and NSR2b (永康貨櫃服務有限公司) which shown in **Figure 1**, were required to perform impact noise monitoring during this reporting period.

The impact noise monitoring programme was summarized in **Table 3.3**.

**Table 3.3 Noise Monitoring Stations**

Noise monitoring station	Type of Measurement
NSR1a	Façade
NSR2b	Façade

### 3.5. Monitoring Methodology

#### Instrumentation

Integrating Sound Level Meters were employed for noise monitoring.

#### Operation/Analysis Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - Frequency weighting : A
  - Time weighting : Fast
  - Time measurement : 30 mins
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment.
- During the monitoring period, the  $L_{eq}$ ,  $L_{10}$  and  $L_{90}$  were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- 3dB(A) correction had been added to the results if noise measurements were free-field.
- Noise monitoring would be cancelled in the presence of fog, rain, storm, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.

#### Maintenance and Calibration (QA/QC)

- The microphone head of the sound level meter and calibrator are cleaned with soft cloth at quarterly intervals.
- The meters are sent to the HOKLAS accredited laboratory or equivalent to check and calibrated at yearly intervals.

### 3.6. Actions and Limit Level

The Action and Limit Levels were established in **Table 3.4** for noise monitoring.

**Table 3.4 Action and Limit Levels for Noise Monitoring**

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

Remark: (\*)70dB(A) for schools and 65dB(A) for schools during school examination period

### 3.7. Results and Observations

#### 3.7.1. Results

Monitoring data of noise monitoring carried out in this reporting month are summarized in **Appendix E2**. Graphical presentation of noise monitoring results for the reporting month is shown in **Appendix E3**.

No exceedance of Action and Limit Level of noise monitoring results was recorded during the reporting month.

#### 3.7.2. Observation

The noise monitoring data were found to be lower than the limit level. The major noise source during the monitoring event was the vehicles passing through the container yard entrance and the general earth works inside the construction site.

### 3.8. Event and Action Plan

If the impact monitoring results exceed the Action and Limit Levels, the actions specified in **Table 3.5** shall be carried out.

**Table 3.5 Event/Action Plan for Construction Noise**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level	<ol style="list-style-type: none"> <li>1. Notify IEC and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC and Contractor;</li> <li>4. Discuss with the Contractor and formulate remedial measures ;</li> <li>5. Increase monitoring frequency to check the effectiveness of mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analyzed results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analyzed noise problem;</li> <li>4. Ensure mitigation measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposal to IEC;</li> <li>2. Implement noise mitigation proposals.</li> </ol>
Limit level	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, EPD &amp; Contractor;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Inform IEC, ER and EPD</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analyzed noise problem;</li> <li>4. Ensure mitigation measures are properly implemented;</li> <li>5. If exceedances continues, consider what portion of the</li> </ol>	<ol style="list-style-type: none"> <li>1. Undertake immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of</li> </ol>



	<p>the causes and actions taken for the exceedances;</p> <p>7. Assess the effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p>		<p>work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>works as determined by ER, until the exceedance is abated.</p>
--	--	--	---	---

#### 4. WATER QUALITY MONITORING

##### 4.1. Monitoring Requirements

- 4.1.1. Water quality was monitored in the reporting month in accordance with the EM&A Manual at one alternative water quality monitoring station, R1b (at Tin Shui Wai Nullah) which shown in **Figure 2**.

##### 4.2. Monitoring Methodology and Equipment

###### For In-situ Water Quality Measurement

###### **Dissolved Oxygen (DO) measuring equipment**

A portable, weatherproof DO-measuring meter with built-in salinity compensation (e.g. YSI 85, YSI Pro 2030 or equivalent) was used in the baseline monitoring. It can be capable for measuring dissolved oxygen level in the range of 0-20 mg/L and 0-200 % saturation.

###### For Water Sampling and Sample Analysis

###### **Water Sampler**

A water sampler comprising a metal bucket was lowered into the water body.

###### **Water Container**

The sample container, made by high-density polythene, was rinsed with a portion of the water sample. The water sample was then transferred to the container, labelled with a unique sample ID and sealed with a screw cap. The water samples were stored in a cool box maintained at 4°C. The water samples will then be delivered to Environmental Laboratory of ETS-Testconsult Ltd (HOKLAS Registration No. 022) on the same day for analysis according to the Standard Method APHA 19ed.

The summary of testing methods of testing parameters required was shown in **Table 4.1**.

**Table 4.1 Summary of Testing Procedures for water samples**

Parameters	Testing Procedure	Detection Limit
Turbidity	Dissolved Oxygen Meter Measurement	0.1 NTU
Dissolved Oxygen	In house method refer to APHA 19 <sup>th</sup> ed 2130 B	0.01 mg/L
Total suspended solids	In house method refer to APHA 19 <sup>th</sup> ed 2540D	0.1 mg/L

### 4.3. Monitoring Frequency

- 4.3.1. Water samples were collected 3 times per week in 1 monitoring station. Three parameters including turbidity, dissolved oxygen and total suspended solids would be tested.

**Table 4.2 Monitoring Frequency of Water Quality Monitoring**

Parameters	Frequency	No. of sampling stations
Turbidity	3 times per week	1 station
Dissolved Oxygen		
Total suspended solids		

- 4.3.2. In this reporting period, a total of 13 occasions of water quality monitoring were undertaken and the schedule was shown in **Table 4.3**

**Table 4.3 Time Schedule of Impact Water Quality Monitoring**

June 2019						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 ▼
2	3	4 ▼	5	6 ▼	7	8 ▼
9	10	11 ▼	12	13 ▼	14	15 ▼
16	17	18 ▼	19	20 ▼	21	22 ▼
23	24	25 ▼	26	27 ▼	28	29 ▼
30						

Remark: ( ▼ ) = Water quality monitoring carried out by ET

### 4.4. Quality Assurance (QA) / Quality Control (QC)

For in-situ measurements, at each measurement / sampling, two consecutive measurements of turbidity and dissolved oxygen (DO) were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. If the difference between the first and second measurement is greater than 25% the reading will be discarded and the measurements will be repeated.

For laboratory analysis of water, test method of all test parameters and the QA/QC samples were carried out in accordance with the requirements of HOKLAS.

For our QA/QC procedure, one QC sample, one duplicate sample and one sample spike of every batch of 20 samples were analyzed.

The calibration certifications of water quality monitoring equipments were shown in **Appendix F1**.

### 4.5. Actions and Limit Levels

The criteria for Action and Limit Levels have been set out as follows:

**Table 4.4 The criteria of Action and Limit Levels for Water Quality**

Parameters	Unit	Action Level	Limit Level
Turbidity	NTU	95%ile of baseline data	99%ile of baseline data
Dissolved Oxygen	mg/L	5%ile of baseline data	1%ile of baseline data
Suspended solids	mg/L	95%ile of baseline data	99%ile of baseline data

Following the criteria shown in **Table 4.4**, the Action and Limit Levels for monitoring parameters derived as illustrated in **Table 4.5**.

**Table 4.5 Action and Limit Levels for Water Quality**

Parameters	Unit	Action	Limit
Turbidity	NTU	19.8	20.5
Dissolved Oxygen	mg/L	1.84	1.81
Suspended Solid	mg/L	17.0	17.8

#### 4.6. Result and Observation

##### 4.6.1. Result

Monitoring data of water quality monitoring carried out in this reporting month are summarized in **Appendix F2**. Graphical presentation of the monitoring results for the reporting month is shown in **Appendix F3**.

No exceedance of Action and Limit Level of water quality monitoring results was recorded during the reporting month.

##### 4.6.2. Observation

Generally, the turbidity and suspended solids were found to be lower than the action level. Besides, all results of dissolved oxygen measured in this reporting month were higher than the action level.

##### 4.7. Event and Action Plan

If the impact monitoring results of the individual parameters exceed the Action and Limit Levels, the actions specified in **Table 4.6** shall be carried out.

**Table 4.6 Event and Action Plan for Water Quality**

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>Repeat in-situ measurement to confirm findings;</li> <li>Identify reasons for non-compliance and sources of impact;</li> <li>Inform IEC and Contractor;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC and</li> </ol>	<ol style="list-style-type: none"> <li>Discuss with ET and Contractor on the mitigation measures;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly;</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss with IEC on the proposed mitigation measures;</li> <li>make agreement on the mitigation measures to be implemented;</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Inform the ER and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment</li> <li>Consider changes of working methods;</li> <li>Discuss with ET and IEC and propose mitigation measures to IEC and ER;</li> <li>Implement the agreed mitigation</li> </ol>



Event	Action			
	ET Leader	IEC	ER	Contractor
	6. Contractor; Repeat measurement on next day of exceedance.			measures.
Action Level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. Ensure mitigation measures are implemented; 7. Prepare to increase the monitoring frequency to daily; 8. Repeat measurement on next day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures.
Limit Level being exceeded by one sampling day	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact;	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all



Event	Action			
	ET Leader	IEC	ER	Contractor
	3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit Level.	Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures.	plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures.
Limit Level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurement to confirm findings; 2. Identify reasons for non-compliance and sources of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures; 5. Consider and instruct, if necessary, the	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation

Event	Action			
	ET Leader	IEC	ER	Contractor
	7. mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.		Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.	7. measures; As directed by the ER, to slow down or to stop all or part of the marine work or construction activities.

## 5. ENVIRONMENTAL SITE INSPECTION AND AUDIT

### 5.1. Site Inspection

- 5.1.1. Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control mitigation measures for the project. During the reporting period, site inspections were carried out on 06, 14, 21 & 28 June 2019.
- 5.1.2. Observations for the site inspections within this reporting period are summarized in **Table 5.1** and inspection checklists are attached in **Appendix H**.

**Table 5.1 Summary of observation of site inspections**

Date	Observations/ Reminders	Follow-up Action	Closed Date
31 May 2019	1. Temporarily cover was not fully overspread the drainage at P1. 1. Fill material was observed without cover at the Northern side of UV.	1. A temporarily cover was provided to cover the drainage at P1. 2. Fill material was covered at the Northern side of UV.	06 June 2019
06 June 2019	1. Stagnant water was accumulated at UV.	1. Larvicide was added for the stagnant water.	14 June 2019
14 June 2019	--	--	--
21 June 2019	1. Stagnant water was observed at the drip tray near DO1 work area.	1. Stagnant water was cleared	28 June 2019
28 June 2019	1. Stagnant water was observed near SDB.	Follow-up actions for outstanding observation will be inspected during the next site inspection.	--

### 5.2. Landscape and Visual Audit

- 5.2.1. Landscape and visual audits were undertaken at least once every two weeks throughout the construction period by a competent landscape architect. During the reporting period, audits were carried out on 14 and 28 June 2019.



5.2.2. Observations and reminders were summarized in the landscape and visual impact assessment checklists which are attached in **Appendix I**.

### 5.3. Advice on the Solid and Liquid Waste Management Status

5.3.1. All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil

5.3.2. The quantities of waste for disposal in this Reporting Period are summarized in **Table 5.2** and **Table 5.3** and the Monthly Summary Waste Flow Table is shown in **Appendix J**. Whenever possible, materials were reused on-site as far as practicable.

**Table 5.2 Summary of Quantities of Inert C&D Materials**

Type of Waste	Quantity	Disposal Location
Reused in this Contract (Inert) (m <sup>3</sup> )	0	--
Reused in other Projects (Inert) (m <sup>3</sup> )	0	--
Disposed as Public Fill (Inert) (m <sup>3</sup> )	2,408	Tuen Mun 38 Fill Bank

**Table 5.3 Summary of Quantities of C&D Materials**

Type of Waste	Quantity	Disposal Location
Recycled Metal (kg)	0	--
Recycled Paper / Cardboard Packing (kg)	0	--
Recycled Plastic (kg)	0	--
Chemical Wastes (kg)	0	--
General Refuses (m <sup>3</sup> )	125,740	North East New Territories (NENT) Landfill

5.3.3. To control over the site performance on waste management, the Contractor shall ensure that all solid and liquid waste management works are in full compliance with the relevant license/permit requirements, such as the effluent discharge license and the chemical waste producer registration. The Contractor is also reminded to implement the recommended environmental mitigation measures according to the EM&A Manual based on actual site conditions.

### 5.4. Discharge License and Results of Effluent Monitoring

5.4.1. Effluent quality was monitored in the reporting month in accordance with the EM&A Manual at the discharge point. A discharge license under Water Pollution Control Ordinance was obtained by the Contractor upon commencement of the Project. Self-monitoring would be performed as per the requirement under the discharge license. According to the EM&A Manual, pH, chemical oxygen demand and total suspended solid are required to be analysed at least once every two week.

5.4.2. Effluent water samples were scheduled to be collected on 04 and 18 June 2019. As only Wetsep at P1a was operated on 04 and 18 June 2019, the effluent water sample was sampled at P1a only on the reporting month. The required testing parameter including pH, chemical oxygen demand and total suspended solid were carried out in a HOKLAS laboratory. The methods of chemical oxygen demand and total suspended solid determination follow APHA 19ed 5220 B and APHA 19ed 2540 D respectively. The laboratory reports for the discharge water are presented in **Appendix N**.

5.4.3. For effluent quality monitoring as per the discharge license requirement, the results complied with the discharge license requirement.

## 5.5. Environmental Licenses and Permits

- 5.5.1. The valid environmental licenses and permits during the reporting period are summarized in **Appendix K**.

## 5.6. Implementation Status of Environmental Mitigation Measures

- 5.6.1. The environmental mitigation measures that recommended in the Environmental Monitoring and Audit Manual covered the issues of dust, noise, water and waste and they are summarized as following:

### **Dust Mitigation Measures**

- a. The working area for the uprooting of trees, shrubs, or vegetation or for the removal of boulders, poles, pillars or temporary or permanent structures should be sprayed with water or a dust suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet;
- b. All demolished items (including trees, shrubs, vegetation, boulders, poles, pillars, structures, debris, rubbish and other items arising from site clearance) that may dislodge dust particles should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition;
- c. Vehicle washing facilities including a high pressure water jet should be provided at every discernible or designated vehicle exit point;
- d. The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;
- e. Where a site boundary adjoins a road, street, service and or other area accessible to the public, hoarding of not less than 2.4m from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit;
- f. Every main haul road (i.e. any course inside a construction site having a vehicle passing rate of higher than 4 in any 30 minutes) should be paved with concrete, bituminous materials, hardcores or metal plates, and kept clear of dusty materials; or sprayed with water or a dust suppression chemical so as to maintain the entire road surface wet;
- g. The portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit should be kept clear of dusty materials;
- h. Immediately before leaving a construction site, every vehicle should be washed to remove any dusty materials from its body and wheels;
- i. 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;
- j. The working area of any excavation or earth moving operation should be sprayed with water or a dusty suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet;
- k. Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within 6 months after the last construction activity on the construction site or part of the construction site where the exposed earth lies;
- l. Any stockpile of dusty material should be either covered entirely by impervious sheeting; placed in an area sheltered on the top and the 3 sides; or sprayed with water or a dust suppression chemical so as to maintain the entire surface wet.

**Noise Mitigation Measures**

- a. Quiet plants should be used in order to reduce the noise impacts to protect the nearby NSRs.
- b. Temporary and Movable Noise Barriers should be used in order to reduce the noise impact to the surrounding sensitive receivers
- c. The contractor should site noisy equipment and activities as far from sensitive receivers as practical.
- d. Idle equipment should be turned off or throttled down.
- e. Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided
- f. Construction plant should be properly maintained and operated.

**Water Quality Mitigation Measures**

- a. Exposed stockpiles should be covered with tarpaulin or impervious sheets before a rainstorm occurs;
- b. The exposed soil surfaces should also be properly protected to minimize dust emission;
- c. The stockpiles of materials should be placed in the locations away from the drainage channel so as to avoid releasing materials into the channel;
- d. Wheel washing facilities should be provided at site exits to ensure that earth, mud and debris would not be carried out of the works areas by vehicles;
- e. Provision of site drainage systems and treatment facilities would be required to minimize the water pollution;
- f. A discharge license needs to be applied from EPD for discharging effluent from the construction site;
- g. The treated effluent quality is required to meet the requirements specified in the discharge license;
- h. Provision of chemical toilets is required to collect sewage from workforce. The chemical toilets should be cleaned on a regular basis;
- i. A licensed waste collector should be employed to clean the chemical toilets and temporary storage tank on a regular basis;
- j. Illegal disposal of chemicals should be strictly prohibited;
- k. Registration as a chemical waste producer is required if chemical wastes are generated and need to be disposed of. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes;
- l. Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance should be used as a guideline for handling chemical wastes;
- m. The impact from accidental spillage of chemicals can be effectively controlled through good management practices.

**Waste Management Mitigation Measures**

- a. Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;
- b. To encourage collection of aluminium cans by individual collectors, separate bins should be provided to segregate this waste from other general refuse generated by the workforce;
- c. Any unused chemicals or those with remaining functional capacity should be recycled;
- d. Prior to disposal of C&D waste, it is recommended that wood, steel and other metals be separated for re-use and/or recycling and inert waste as fill material to minimize the quantity of waste to be disposed of to landfill;
- e. Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and
- f. Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.

**5.6.2.** An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in **Appendix L**. Most of the necessary mitigation measures were implemented properly. Any deficiencies were noted in the remarks of the schedule.

**5.7. Summary of Exceedance of the Environmental Quality Performance Limit**

**5.7.1.** There was no Action and Limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded at station ASR1a and ASR2b during this reporting month.

**5.7.2.** There was no Action and Limit Level exceedance for noise recorded at station NSR1a and NSR2b during the reporting period.

**5.7.3.** There was no Action and Limit Level exceedance for water quality monitoring recorded at station R1b during the reporting period.

**5.8. Summary of Complaints, Notification of Summons and Successful Prosecution**

**5.8.1.** There were no complaints received during the reporting period.

**5.8.2.** There were no notifications of summons or prosecutions received during the reporting period.

**5.8.3.** A summary of environmental complaints, notifications of summons and successful prosecutions was given in **Table 5.4**.

**Table 5.4 Summary of Environmental Complaints Notification of Summons and Successful Prosecution**

Reporting Period	Cumulative Statistic		
	Complaints	Notifications of summons	Successful prosecutions
The reporting period	0	0	0
From commencement date of construction to end of reporting month	0	0	0

**6. FUTURE KEY ISSUES**

**6.1. Construction Programme for the Coming Months**

**6.1.1.** As informed by the Contractor, the major construction activities for July 2019 are included:

- Backfilling;
- Water Tightness Test;
- Internal ABWF;
- External ABWF;
- Superstructure (RC and Metalworks);
- Substructure (ELS & Bulk Excavation);
- Removal of ELS;
- Retaining Wall, U-Channel & Stormwater Pipe;
- Underground Utilities Along EVA

**6.2. Key Issues for the Coming Month**

**Key issues to be considered in the coming month include:**

- Chemical and waste management;
- Treatment of runoff and wastewater prior to discharge; and
- Dust and Noise generated from construction activities;



**Mitigation measures to be required in the coming month:**

Air Quality Impact

- To provide adequate water spraying in the worksite;
- To operate and maintain automatic wheel washing facilities properly;
- To provide road sweeping site entrance and public roads outside site entrance;
- To ensure implementation of the dust mitigation measures for the site activities;
- To maintain proper operation of the mist spraying system;
- To provide proper maintenance for vehicles and machines on site; and
- To investigate any other dust sources around the air sensitive receivers

Noise

- To switch off equipment if not in use;
- To operate silent equipment;
- To identify the noise sources inside and outside of the site; and
- To follow up any exceedance caused by the construction work inside the worksite

Water Quality Impact

- To ensure the drainage system was maintained properly;
- To maintain the existing silt trap to ensure good efficiency of wheel wash facilities;
- To avoid stagnant water in the drip trays due to rainfall;
- To avoid any stagnant water or provide insecticide to avoid mosquito breeding

Chemical and Waste Management

- To remove waste from the site regularly;
- To properly store and handle chemical wastes on site;
- To implement trip ticket system for all the imported public fill and general refuse disposal;
- To maintain proper housekeeping;
- To identify C&D material by packaging, labelling, storage, transportation and disposal in accordance with statutory regulations.

**6.3. Environmental Monitoring and Site Inspection Schedule for the Coming Month**

- 6.3.1.** The tentative schedule for environmental monitoring and site inspection schedule for July 2019 is provided in **Appendix M**.

**7. CONCLUSION**

**7.1. Conclusions**

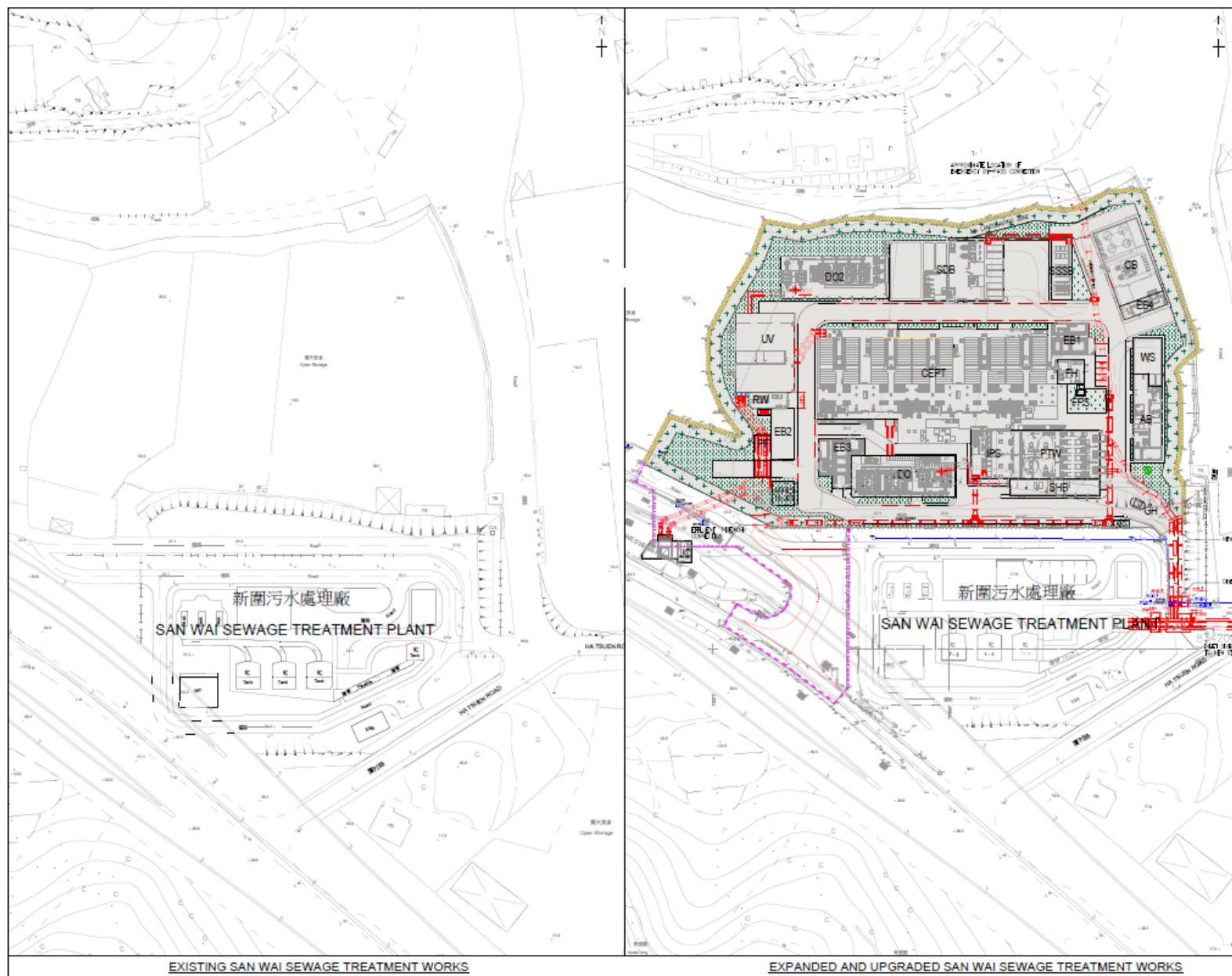
- 7.1.1.** There was no Action and Limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded at station ASR1a and ASR2b during this reporting month.
- 7.1.2.** There was no Action and Limit Level exceedance for noise recorded at station NSR1a and NSR2b during the reporting period.
- 7.1.3.** There was no Action and Limit Level exceedance for water quality monitoring recorded at station R1b during the reporting period.
- 7.1.4.** There were no complaints received during the reporting period.
- 7.1.5.** There were no notifications of summons or prosecutions received during the reporting period.

**- END OF REPORT -**

## **Appendix A**

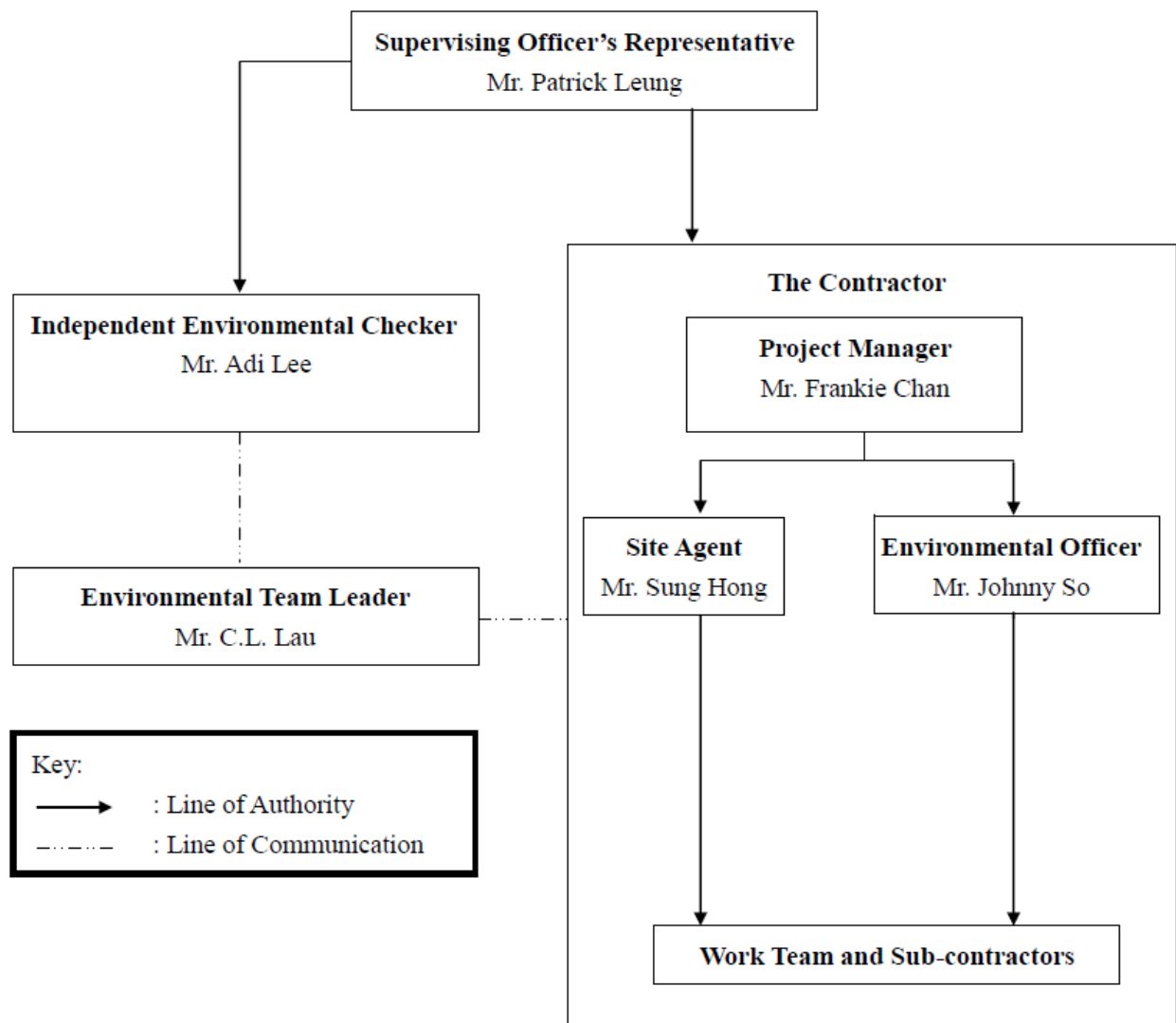
### **Location of Works Areas**





## **Appendix B**

### **Project Organization Chart**



## **Appendix C**

### **Construction Programme**

DATA DATE: 30-Jun-19		LAYOUT: SW Project Phase 1 Rev 11(3M30Jun19)CODE			PAGE 1 OF 4				
Activity ID	Activity Name	At Completion Duration	Start	Finish	2019				
					Jun	Jul	Aug	Sep	Oct
<b>San Wai Sewage Treatment Works Phase 1 - Rev 11 MP (Update as of 30 Jun 2019)</b>					327 27-Nov-18 A 19-Oct-19				
<b>Key Date</b>					77 30-Jun-19 14-Sep-19				
<b>Key Date</b>					77 30-Jun-19 14-Sep-19				
<b>Plant Room Access Dates to E&amp;M Installation</b>					77 30-Jun-19 14-Sep-19				
KD300	Administration Building & Maintenance Workshop (AB & WS)	0		15-Jul-19	◆ Administration Building & Maintenance Workshop (AB & WS)				
KD302	Inlet Works, Preliminary Treatment Units & Inlet Pumping Station (PTW & IPS)	0		15-Aug-19	◆ Inlet Works, Preliminary Treatment Units & Inlet Pumping Station (PTW & IPS)				
KD304	Solid Handling Building (SHB)	0		04-Aug-19	◆ Solid Handling Building (SHB)				
KD306	System Control Flowmeter Chamber (SF)	0		12-Aug-19	◆ System Control Flowmeter Chamber (SF)				
KD308	Chemically Enhanced Primary Treatment (CEPT)	0		14-Sep-19	◆ Chemically Enhanced Primary Treatment (CEPT)				
KD310	Deodorization Facilities No.1 (DO 1)	0		30-Aug-19	◆ Deodorization Facilities No.1 (DO 1)				
KD312	Deodorization Facilities No.2 (DO 2)	0		29-Aug-19	◆ Deodorization Facilities No.2 (DO 2)				
KD314	Sludge Dewatering Building (SDB)	0		07-Aug-19	◆ Sludge Dewatering Building (SDB)				
KD316	UV Disinfection Facilities (UV)	0		29-Jul-19	◆ UV Disinfection Facilities (UV)				
KD318	Re-use Water Building (RW)	0		02-Aug-19	◆ Re-use Water Building (RW)				
KD320	Payment Flowmeter Chamber (PF)	0		18-Jul-19	◆ Payment Flowmeter Chamber (PF)				
KD324	Chemical Building (CB)	0		15-Jul-19	◆ Chemical Building (CB)				
KD326	Electrical Building No.1 (EB1)	0		02-Jul-19	◆ Electrical Building No.1 (EB1)				
KD328	Electrical Building No.2 (EB2)	0		02-Jul-19	◆ Electrical Building No.2 (EB2)				
KD330	Electrical Building No.3 (EB3)	0		30-Jun-19	◆ Electrical Building No.3 (EB3)				
KD331	Electrical Building No.4 (EB4)	0		30-Jun-19	◆ Electrical Building No.4 (EB4)				
KD336	Street Fire Hydrant Pump Room & GENSET Room (FH)	0		01-Aug-19	◆ Street Fire Hydrant Pump Room & GENSET Room (FH)				
KD341	Foul Water Pump Sump (FW)	0		24-Aug-19	◆ Foul Water Pump Sump (FW)				
<b>Administration Building &amp; Maintenance Workshop</b>					245 14-Jan-19 A 15-Sep-19				
Water Tightness Test + Backfilling					22 12-Jul-19 02-Aug-19				
Internal ABWF					183 14-Jan-19 A 15-Jul-19				
External ABWF					217 11-Feb-19 A 15-Sep-19				
<b>Inlet Works, Preliminary Treatment Units &amp; Inlet Pumping Station</b>					55 22-Jun-19 A 15-Aug-19				
Superstructure (RC and Metalworks)					18 22-Jun-19 A 09-Jul-19				
Water Tightness Test + Backfilling					33 14-Jul-19 15-Aug-19				
Internal ABWF					37 10-Jul-19 15-Aug-19				
ABWF					7 09-Aug-19 15-Aug-19				
<b>Solid Handling Building</b>					35 30-Jun-19 04-Aug-19				
Substructure (RC Structure)					7 30-Jun-19 06-Jul-19				
Superstructure (RC and Metalworks)					26 07-Jul-19 01-Aug-19				
Water Tightness Test + Backfilling					24 07-Jul-19 30-Jul-19				
Internal ABWF					17 19-Jul-19 04-Aug-19				
ABWF					15 21-Jul-19 04-Aug-19				
<b>System Control Flowmeter Chamber</b>					31 13-Jul-19 12-Aug-19				

Actual Work

Remaining Work

Critical Remaining Work

Milestone

Summary

ATAL-Degremont-China Harbour Joint Venture

TASK filter: 3 Months Rolling Programme CG Breakdown.

**CONTRACT NO. DC/2013/10 DESIGN, BUILD & OPERATE**

**SAN WAI SEWAGE TREATMENT WORKS - PHASE 1**

**THREE (3) MONTHS ROLLING PROGRAMME (30 June 2019)**

**C&S WORKS**

Date	Revision	Checked	Approved
30-Jun-19	Three (3) Months Rolling Programme...		

DATA DATE: 30-Jun-19		LAYOUT: SW Project Phase 1 Rev 11(3M30Jun19)CODE			PAGE 2 OF 4				
Activity ID	Activity Name	At Completion Duration	Start	Finish	2019				
					Jun	Jul	Aug	Sep	Oct
	Substructure (ELS & Bulk Excavation)	4	13-Jul-19	16-Jul-19			■ Substructure (ELS & Bulk Excavation)		
	Substructure (RC Structure)	16	17-Jul-19	01-Aug-19			■ Substructure (RC Structure)		
	Removal of ELS	2	31-Jul-19	01-Aug-19			● Removal of ELS		
	Superstructure (RC and Metalworks)	7	31-Jul-19	06-Aug-19			■ Superstructure (RC and Metalworks)		
	ABWF	6	07-Aug-19	12-Aug-19			■ ABWF		
	<b>Chemically Enhanced Primary Treatment</b>	<b>166</b>	<b>09-Apr-19 A</b>	<b>21-Sep-19</b>					
	Superstructure (RC and Metalworks)	77	30-Jun-19	14-Sep-19				■ Superstructure (RC and Metalworks)	
	Water Tightness Test + Backfilling	109	27-Apr-19 A	13-Aug-19			■ Water Tightness Test + Backfilling		
	Internal ABWF	158	09-Apr-19 A	13-Sep-19				■ Internal ABWF	
	External ABWF	44	09-Aug-19	21-Sep-19				■ External ABWF	
	<b>Deodorization Facilities No.1</b>	<b>32</b>	<b>30-Jul-19</b>	<b>30-Aug-19</b>					
	Substructure (RC Structure)	21	30-Jul-19	19-Aug-19			■ Substructure (RC Structure)		
	Superstructure (RC and Metalworks)	7	20-Aug-19	26-Aug-19			■ Superstructure (RC and Metalworks)		
	ABWF	6	24-Aug-19	30-Aug-19			■ ABWF		
	<b>Deodorization Facilities No.2</b>	<b>46</b>	<b>15-Jul-19</b>	<b>29-Aug-19</b>					
	Substructure (RC Structure)	30	15-Jul-19	13-Aug-19			■ Substructure (RC Structure)		
	Superstructure (RC and Metalworks)	9	14-Aug-19	22-Aug-19			■ Superstructure (RC and Metalworks)		
	ABWF	7	23-Aug-19	29-Aug-19			■ ABWF		
	<b>Sludge Dewatering Building</b>	<b>287</b>	<b>27-Nov-18 A</b>	<b>09-Sep-19</b>					
	Water Tightness Test + Backfilling	28	11-Jul-19	07-Aug-19			■ Water Tightness Test + Backfilling		
	Internal ABWF	252	27-Nov-18 A	05-Aug-19			■ Internal ABWF		
	External ABWF	101	01-Jun-19 A	09-Sep-19				■ External ABWF	
	<b>UV Disinfection Facilities</b>	<b>97</b>	<b>27-May-19 A</b>	<b>01-Sep-19</b>					
	Water Tightness Test + Backfilling	58	28-May-19 A	24-Jul-19			■ Water Tightness Test + Backfilling		
	Internal ABWF	64	27-May-19 A	29-Jul-19			■ Internal ABWF		
	External ABWF	45	18-Jul-19	01-Sep-19				■ External ABWF	
	<b>Re-use Water Building</b>	<b>44</b>	<b>20-Jun-19 A</b>	<b>02-Aug-19</b>					
	Substructure (RC Structure)	15	20-Jun-19 A	04-Jul-19			■ Substructure (RC Structure)		
	Superstructure (RC and Metalworks)	21	05-Jul-19	25-Jul-19			■ Superstructure (RC and Metalworks)		
	Water Tightness Test + Backfilling	9	23-Jul-19	31-Jul-19			■ Water Tightness Test + Backfilling		
	ABWF	4	30-Jul-19	02-Aug-19			■ ABWF		
	<b>Payment Flowmeter Chamber</b>	<b>38</b>	<b>10-Jun-19 A</b>	<b>18-Jul-19</b>					
	Removal of ELS	3	12-Jul-19	15-Jul-19			■ Removal of ELS		
	Superstructure (RC and Metalworks)	3	04-Jul-19	06-Jul-19			■ Superstructure (RC and Metalworks)		
	Water Tightness Test + Backfilling	37	10-Jun-19 A	17-Jul-19			■ Water Tightness Test + Backfilling		
	Internal ABWF	4	14-Jul-19	18-Jul-19			■ Internal ABWF		
	External ABWF	8	10-Jul-19	18-Jul-19			■ External ABWF		
	<b>Chemical Building</b>	<b>91</b>	<b>17-Jun-19 A</b>	<b>15-Sep-19</b>					
	Internal ABWF	29	17-Jun-19 A	15-Jul-19			■ Internal ABWF		
	ABWF	67	11-Jul-19	15-Sep-19				■ ABWF	
	<b>Electrical Building No.1</b>	<b>90</b>	<b>05-May-19 A</b>	<b>02-Aug-19</b>					
							■ Electrical Building No.1		

DATA DATE: 30-Jun-19		LAYOUT: SW Project Phase 1 Rev 11(3M30Jun19)CODE			PAGE 3 OF 4				
Activity ID	Activity Name	At Completion Duration	Start	Finish	2019				
					Jun	Jul	Aug	Sep	Oct
Internal ABWF		58	05-May-19 A	02-Jul-19		Internal ABWF			
External ABWF		30	04-Jul-19	02-Aug-19			External ABWF		
<b>Electrical Building No.2</b>		106	14-Apr-19 A	28-Jul-19			Electrical Building No.2		
Internal ABWF		80	14-Apr-19 A	02-Jul-19		Internal ABWF			
External ABWF		49	10-Jun-19 A	28-Jul-19			External ABWF		
<b>Electrical Building No.3</b>		58	04-Jun-19 A	31-Jul-19			Electrical Building No.3		
External ABWF		58	04-Jun-19 A	31-Jul-19			External ABWF		
<b>Electrical Building No.4</b>		28	09-Jul-19	05-Aug-19			Electrical Building No.4		
External ABWF		28	09-Jul-19	05-Aug-19			External ABWF		
<b>DG Store and Chemical Waste Storage Building and Irrigation &amp; Cleansing Water Pump Room</b>		7	24-Sep-19	30-Sep-19				DG Store and Chemi	
Substructure (RC Structure)		7	24-Sep-19	30-Sep-19				Substructure (RC Stru	
<b>Street Fire Hydrant Pump Room &amp; GENSET Room</b>		40	25-Jun-19 A	04-Aug-19			Street Fire Hydrant Pump Room & GENSET Room		
Superstructure (RC and Metalworks)		28	25-Jun-19 A	23-Jul-19			Superstructure (RC and Metalworks)		
Water Tightness Test + Backfilling		17	18-Jul-19	04-Aug-19			Water Tightness Test + Backfilling		
ABWF		14	18-Jul-19	01-Aug-19			ABWF		
<b>Gatehouse</b>		7	24-Sep-19	30-Sep-19				Gatehouse	
Substructure (RC Structure)		7	24-Sep-19	30-Sep-19				Substructure (RC Stru	
<b>Foul Water Pump Room</b>		87	30-May-19 A	24-Aug-19			Foul Water Pump Room		
Substructure (RC Structure)		69	30-May-19 A	06-Aug-19			Substructure (RC Structure)		
Superstructure (RC and Metalworks)		6	07-Aug-19	12-Aug-19			Superstructure (RC and Metalworks)		
ABWF		12	13-Aug-19	24-Aug-19			ABWF		
<b>Slopes and Retaining Wall</b>		98	08-Jul-19	13-Oct-19				Slopes and	
Section 2		98	08-Jul-19	13-Oct-19				Section 2	
North of SSSB		68	08-Jul-19	13-Sep-19				North of SSSB	
North of CB, EB4 and SDB		30	14-Sep-19	13-Oct-19				North of CB	
Section 3		60	01-Aug-19	29-Sep-19				Section 3	
East of CB and EB4		60	01-Aug-19	29-Sep-19				East of CB and EB4	
<b>Underground Utilities Along EVA</b>		173	30-Apr-19 A	19-Oct-19				Underg	
Zone Completion Dates		32	22-Aug-19	23-Sep-19				Zone Completion Dates	
Zone Completion Dates		32	22-Aug-19	23-Sep-19				Zone Completion Dates	
Z1	Zone 1	0		22-Aug-19			◆ Zone 1		
Z2	Zone 2	0		18-Sep-19				◆ Zone 2	
Z3	Zone 3	0		23-Sep-19				◆ Zone 3	
<b>P8 Area</b>		173	30-Apr-19 A	19-Oct-19				P8 Are	
Retaining Wall, U-Channel & Stormwater Pipe		128	30-Apr-19 A	04-Sep-19				Retaining Wall, U-Channel & Stormwater P	
Drainage Inlet Connection (Diversion of 3 Existing Sewage Rising Mains)		45	04-Sep-19	19-Oct-19				Drainage	
<b>ZONE 1</b>		74	10-Jun-19 A	22-Aug-19			ZONE 1		
Underground Utilities Along EVA		74	10-Jun-19 A	22-Aug-19			Underground Utilities Along EVA		
<b>ZONE 2</b>		118	24-May-19 A	18-Sep-19			ZONE 2		
Underground Utilities Along EVA		118	24-May-19 A	18-Sep-19			Underground Utilities Along EVA		
<b>ZONE 3</b>		63	23-Jul-19	23-Sep-19			ZONE 3		

DATA DATE: 30-Jun-19		LAYOUT: SW Project Phase 1 Rev 11(3M30Jun19)CODE			PAGE 4 OF 4				
Activity ID	Activity Name	At Completion Duration	Start	Finish	2019				
					Jun	Jul	Aug	Sep	Oct
	Underground Utilities Along EVA	63	23-Jul-19	23-Sep-19					Underground Utilities Along
	ZONE 4	77	16-Jul-19	30-Sep-19					ZONE 4
	Underground Utilities Along EVA	77	16-Jul-19	30-Sep-19					Underground Utilities A
	ZONE 5	105	30-Jun-19	12-Oct-19					ZONE 5
	Underground Utilities Along EVA	105	30-Jun-19	12-Oct-19					Underground
	ZONE 6	43	22-Aug-19	03-Oct-19					ZONE 6
	Underground Utilities Along EVA	43	22-Aug-19	03-Oct-19					Underground Utilitie



DATA DATE: 30-Jun-19

LAYOUT: SW Project Phase 1 Rev 11 (30-Jun-19)EM

PAGE 1 OF 5

Activity ID	Activity Name	At Completion Duration	Start	Finish	2019				
					Jun	Jul	Aug	Sep	Oct
San Wai Sewage Treatment Works Phase 1 - Rev 11 MP (Update as of 30 Jun 2019)									
E&M Works									
Installation									
Chemically Enhanced Primary Treatment (CEPT)									
Zone 1 - Densadeg No.1									Zone 1 - Densadeg
Mechanical Equipment									Mechanical Equipment
Electrical Equipment									Electrical Equipment
Building Services									Building Services
Zone 2 - Densadeg No.2									
Mechanical Equipment									
Zone 3 - Densadeg No.3									Zone 3 - Densadeg
Mechanical Equipment									Mechanical Equipment
Zone 4 - Densadeg No.4									Zone 4 - Densadeg
Mechanical Equipment									Mechanical Equipment
Zone 5 - Densadeg No.5									Zone 5 - Densadeg
Mechanical Equipment									Mechanical Equipment
Zone 6A - Upper and Lower Level Pump Room No.1									Zone 6A - Upper and Lower Level Pump Room No.1
Mechanical Equipment									Mechanical Equipment
Electrical Equipment									Electrical Equipment
Building Services									Building Services
Zone 6B - Upper and Lower Level Pump Room No.2									Zone 6B - Upper and Lower Level Pump Room No.2
Mechanical Equipment									Mechanical Equipment
Electrical Equipment									Electrical Equipment
Building Services									Building Services
Zone 6C - Upper and Lower Level Pump Room No.3									Zone 6C - Upper and Lower Level Pump Room No.3
Mechanical Equipment									Mechanical Equipment
Zone 7 - Common Inlet Channel									
Mechanical Equipment									
Zone 8 - Common Outlet Channel									
Mechanical Equipment									
Individual Inspection									Individual Inspection
System Control Flowmeter Chamber (SF)									System Control Flowmeter Chamber (SF)
Zone 1 - SF									Zone 1 - SF
Mechanical Equipment									Mechanical Equipment
Electrical Equipment									Electrical Equipment
External Utilities Handled-over									External Utilities Handled-over
Individual Inspection									Individual Inspection
Inlet Work, Preliminary Treatment Units & Inlet Pumping Station (PTW&IPS)									
Zone 1 - Fine Screen Chamber									

Actual Work

Remaining Work

Critical Remaining Work

Milestone

Summary

ATAL

HEC

ATAL-Degremont-China Harbour Joint Venture

TASK filter: 3 Months Rolling Programme EM Breakdown.

CONTRACT NO. DC/2013/10 DESIGN, BUILD & OPERATE

SAN WAI SEWAGE TREATMENT WORKS - PHASE 1

THREE (3) MONTHS ROLLING PROGRAMME (30 June 2019)

E&M WORKS

Date	Revision	Checked	Approved
30-Jun-19	Three (3) Months Rolling Programme...		

DATA DATE: 30-Jun-19		LAYOUT: SW Project Phase 1 Rev 11(3M30Jun19)/EM			PAGE 2 OF 5				
Activity ID	Activity Name	At Completion Duration	Start	Finish	Jun	Jul	Aug	Sep	Oct
	Mechanical Equipment	99	21-Jul-19	28-Oct-19					
	Electrical Equipment	44	19-Aug-19	02-Oct-19					
	Building Services	56	18-Aug-19	13-Oct-19					
	Zone 2 - Grit Chamber	49	18-Aug-19	06-Oct-19					
	Mechanical Equipment	41	26-Aug-19	05-Oct-19					
	Electrical Equipment	44	19-Aug-19	02-Oct-19					
	Building Services	49	18-Aug-19	06-Oct-19					
	Zone 3 - Wet Well and IPS Area	94	14-Jul-19	15-Oct-19					
	Mechanical Equipment	94	14-Jul-19	15-Oct-19					
	Building Services	51	18-Aug-19	08-Oct-19					
	Individual Inspection	55	20-Aug-19	13-Oct-19					
	Solid Handling Building (SHB)	72	05-Aug-19	15-Oct-19					
	Zone 1 - Screening Handling Room	59	05-Aug-19	02-Oct-19					
	Mechanical Equipment	31	05-Aug-19	04-Sep-19					
	Electrical Equipment	28	05-Sep-19	02-Oct-19					
	Zone 2 - Air blower Room	35	26-Aug-19	30-Sep-19					
	Mechanical Equipment	35	26-Aug-19	30-Sep-19					
	Zone 3 - Grit Handling Room	42	04-Sep-19	15-Oct-19					
	Mechanical Equipment	28	04-Sep-19	01-Oct-19					
	Electrical Equipment	21	25-Sep-19	15-Oct-19					
	UV Disinfection Facility (UV)	110	30-Jun-19	17-Oct-19					
	Zone 1 - Roof	60	30-Jul-19	27-Sep-19					
	Electrical Equipment	60	30-Jul-19	27-Sep-19					
	Zone 2 - Electrical Building	94	16-Jul-19	17-Oct-19					
	Mechanical Equipment	21	16-Jul-19	05-Aug-19					
	Electrical Equipment	21	16-Jul-19	05-Aug-19					
	Building Services	73	06-Aug-19	17-Oct-19					
	Zone 3 - UV Inlet Channel	50	04-Jul-19	22-Aug-19					
	Mechanical Equipment	50	04-Jul-19	22-Aug-19					
	Zone 4 - Disinfection Channel	86	30-Jun-19	23-Sep-19					
	Mechanical Equipment	86	30-Jun-19	23-Sep-19					
	Zone 5 - UV Outlet Channel	49	25-Jul-19	11-Sep-19					
	Mechanical Equipment	49	25-Jul-19	11-Sep-19					
	Building Services	34	25-Jul-19	27-Aug-19					
	Sludge Dewatering Building (SDB)	151	15-Jul-19	12-Dec-19					
	Zone 1 - Sludge Feed Pump Room	136	16-Jul-19	28-Nov-19					
	Mechanical Equipment	136	16-Jul-19	28-Nov-19					
	Electrical Equipment	39	26-Aug-19	03-Oct-19					
	Building Services	72	16-Jul-19	25-Sep-19					
	Zone 2 - Return Liquor Tank	45	04-Aug-19	17-Sep-19					
	Mechanical Equipment	18	31-Aug-19	17-Sep-19					
	Electrical Equipment	5	04-Aug-19	08-Aug-19					
	Zone 3 - Ground Floor	96	16-Jul-19	20-Oct-19					
	Mechanical Equipment	96	16-Jul-19	20-Oct-19					
	Building Services	77	16-Jul-19	30-Sep-19					



DATA DATE: 30-Jun-19		LAYOUT: SW Project Phase 1 Rev 11(30/06/19)/EM			PAGE 3 OF 5				
Activity ID	Activity Name	At Completion	Start	Finish	2019				
		Duration			Jun	Jul	Aug	Sep	Oct
<b>Zone 4 - Sludge Skip Area</b>									
	Mechanical Equipment	150	16-Jul-19	12-Dec-19					
	Electrical Equipment	57	16-Jul-19	10-Sep-19					
	Building Services	26	16-Jul-19	10-Aug-19					
<b>Zone 6 - First Floor</b>									
	Mechanical Equipment	87	15-Jul-19	09-Oct-19					
	Electrical Equipment	84	25-Jul-19	16-Oct-19					
<b>Zone 7 - Centrifuge Area</b>									
	Mechanical Equipment	107	15-Jul-19	30-Oct-19					
<b>Zone 8 - Upper Roof</b>									
	Mechanical Equipment	10	29-Aug-19	08-Sep-19					
<b>Zone 9 - Sludge Holding Tank No. 1&amp;2&amp;3</b>									
	Mechanical Equipment	25	25-Aug-19	19-Sep-19					
	Electrical Equipment	5	11-Sep-19	15-Sep-19					
<b>Administration Building &amp; Maintenance Workshop (AB &amp; WS)</b>									
<b>Zone 1 - Ground Floor</b>									
	Mechanical Equipment	197	15-Aug-19	27-Feb-20					
	Electrical Equipment	81	27-May-19 A	16-Aug-19					
	Building Services	105	24-Jun-19 A	07-Oct-19					
<b>Zone 2 - First Floor</b>									
	Electrical Equipment	84	16-Jul-19	07-Oct-19					
	Electrical Equipment	35	16-Jul-19	19-Aug-19					
	Building Services	84	16-Jul-19	07-Oct-19					
<b>Zone 3 - Roof</b>									
	Electrical Equipment	76	16-Jul-19	29-Sep-19					
	Building Services	51	16-Jul-19	04-Sep-19					
<b>Zone 4 - Workshop</b>									
	Mechanical Equipment	76	16-Jul-19	29-Sep-19					
	Building Services	96	24-Jun-19 A	28-Sep-19					
<b>Zone 5 - Control Room</b>									
	Mechanical Equipment	14	07-Jul-19	21-Jul-19					
	Building Services	96	24-Jun-19 A	28-Sep-19					
<b>Zone 6 - Laboratory</b>									
	Building Services	100	09-Jun-19 A	16-Sep-19					
	Building Services	100	09-Jun-19 A	16-Sep-19					
<b>Individual Inspection</b>									
	Building Services	112	27-May-19 A	16-Sep-19					
<b>Deodorization Facilities No. 1 (DO 1)</b>									
	Building Services	21	23-Sep-19	14-Oct-19					
<b>Zone 1 - DO 1</b>									
	Mechanical Equipment	37	30-Aug-19	06-Oct-19					
<b>Deodorization Facilities No. 2 (DO 2)</b>									
	Mechanical Equipment	37	30-Aug-19	06-Oct-19					
<b>Zone 1 - DO 2</b>									
	Mechanical Equipment	36	30-Aug-19	04-Oct-19					
<b>Chemical Building (CB)</b>									
	Mechanical Equipment	110	06-Jul-19	23-Oct-19					
<b>Zone 1 - Polymer Room</b>									
	Mechanical Equipment	67	15-Jul-19	20-Sep-19					
	Electrical Equipment	7	15-Jul-19	22-Jul-19					
	Building Services	35	20-Jul-19	23-Aug-19					
<b>Zone 2 - Polymer Preparation Room</b>									
	Building Services	63	20-Jul-19	20-Sep-19					
	Building Services	96	20-Jul-19	23-Oct-19					

DATA DATE: 30-Jun-19		LAYOUT: SW Project Phase 1 Rev 11(3M30Jun19)EM			PAGE 4 OF 5				
Activity ID	Activity Name	At Completion Duration	Start	Finish	2019				
					Jun	Jul	Aug	Sep	Oct
	Mechanical Equipment	70	14-Aug-19	23-Oct-19					
	Electrical Equipment	35	20-Jul-19	23-Aug-19					
	Building Services	49	12-Aug-19	30-Sep-19					
	Zone 3 - Coagulant Storage Area	77	20-Jul-19	04-Oct-19					
	Mechanical Equipment	51	14-Aug-19	04-Oct-19					
	Electrical Equipment	28	20-Jul-19	16-Aug-19					
	Building Services	35	12-Aug-19	16-Sep-19					
	Zone 4 - Service Water Area	88	06-Jul-19	02-Oct-19					
	Mechanical Equipment	88	06-Jul-19	02-Oct-19					
	Electrical Equipment	21	20-Jul-19	09-Aug-19					
	Building Services	35	12-Aug-19	16-Sep-19					
	Zone 5 - Roof	58	20-Jul-19	16-Sep-19					
	Electrical Equipment	21	20-Jul-19	09-Aug-19					
	Building Services	35	12-Aug-19	16-Sep-19					
	Individual Inspection	69	22-Jul-19	30-Sep-19					
	Street Fire Hydrant Pump Room & GENSET Room (FH)	70	01-Aug-19	10-Oct-19					
	Zone 1 - SFH & GENSET Room	70	01-Aug-19	10-Oct-19					
	Electrical Equipment	42	01-Aug-19	12-Sep-19					
	Building Services	70	01-Aug-19	10-Oct-19					
	Individual Inspection	24	26-Aug-19	19-Sep-19					
	Electrical Building No.1 (EB1)	133	30-Jun-19	09-Nov-19					
	Zone 1 - Transformer Room	38	30-Jun-19	06-Aug-19					
	Electrical Equipment	10	30-Jun-19	09-Jul-19					
	Building Services	15	22-Jul-19	06-Aug-19					
	Zone 2 - LV Switch Room	102	02-Jul-19	12-Oct-19					
	Mechanical Equipment	21	07-Sep-19	28-Sep-19					
	Electrical Equipment	102	02-Jul-19	12-Oct-19					
	Building Services	52	22-Jul-19	12-Sep-19					
	External Utilities Hand-over	47	24-Sep-19	09-Nov-19					
	Individual Inspection	68	27-Jul-19	03-Oct-19					
	Electrical Building No.2 (EB2)	100	10-Jun-19 A	17-Sep-19					
	Zone 1 - Transformer Room	60	10-Jun-19 A	09-Aug-19					
	Electrical Equipment	26	10-Jun-19 A	05-Jul-19					
	Building Services	56	14-Jun-19 A	09-Aug-19					
	Zone 2 - LV Switch Room	73	30-Jun-19	10-Sep-19					
	Mechanical Equipment	21	29-Jul-19	19-Aug-19					
	Electrical Equipment	73	30-Jun-19	10-Sep-19					
	Building Services	49	23-Jul-19	10-Sep-19					
	External Utilities Hand-over	40	06-Jul-19	14-Aug-19					
	Individual Inspection	49	30-Jul-19	17-Sep-19					
	Electrical Building No.3 (EB3)	153	03-May-19 A	02-Oct-19					
	Zone 1 - Transformer Room	82	03-May-19 A	23-Jul-19					
	Building Services	82	03-May-19 A	23-Jul-19					
	Zone 2 - LV Switch Room	95	30-Jun-19	02-Oct-19					
	Mechanical Equipment	21	29-Jul-19	19-Aug-19					

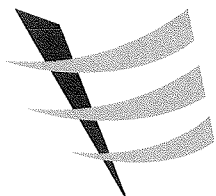
DATA DATE: 30-Jun-19		LAYOUT: SW Project Phase 1 Rev 11(30Jun19)/EM			PAGE 5 OF 5				
Activity ID	Activity Name	At Completion Duration	Start	Finish	2019				
					Jun	Jul	Aug	Sep	Oct
Electrical Equipment		81	30-Jun-19	18-Sep-19					Electrical Equipment
Building Services		72	22-Jul-19	02-Oct-19					Building Services
External Utilities Handed-over		40	31-Jul-19	08-Sep-19					External Utilities Handed-over
Individual Inspection		36	23-Jul-19	28-Aug-19					Individual Inspection
Electrical Building No.4 (EB4)		122	30-Jun-19	29-Oct-19					
Zone 2 - LV Switch Room		121	30-Jun-19	28-Oct-19					
Mechanical Equipment		30	28-Sep-19	28-Oct-19					
Electrical Equipment		89	30-Jun-19	26-Sep-19					Electrical Equipment
Building Services		70	22-Jul-19	30-Sep-19					Building Services
External Utilities Handed-over		40	20-Sep-19	29-Oct-19					
Individual Inspection		44	30-Jul-19	11-Sep-19					Individual Inspection
Re-use Water Building (RW)		63	03-Aug-19	04-Oct-19					Re-use Water Build
E&M Zone 1 - Re-use Water		63	03-Aug-19	04-Oct-19					E&M Zone 1 - Re-u
Mechanical Equipment		58	03-Aug-19	29-Sep-19					Mechanical Equipment
Electrical Equipment		28	03-Aug-19	30-Aug-19					Electrical Equipment
Building Services		63	03-Aug-19	04-Oct-19					Building Services
Individual Inspection		28	24-Aug-19	20-Sep-19					Individual Inspection
Payment Flowmeter Chamber (PF)		79	18-Jul-19	04-Oct-19					Payment Flowmete
Zone 1 - PF Chamber		54	12-Aug-19	04-Oct-19					Zone 1 - PF Cham
Mechanical Equipment		54	12-Aug-19	04-Oct-19					Mechanical Equipn
Electrical Equipment		14	16-Aug-19	30-Aug-19					Electrical Equipment
Zone 2 - Terminal Manhole		21	18-Jul-19	08-Aug-19					Zone 2 - Terminal Manhole
Mechanical Equipment		21	18-Jul-19	08-Aug-19					Mechanical Equipment
Foul Water Pump Sump (FW)		44	25-Aug-19	07-Oct-19					Foul Water Pump
Zone 1 - FW		21	25-Aug-19	14-Sep-19					Zone 1 - FW
Mechanical Equipment		21	25-Aug-19	14-Sep-19					Mechanical Equipment
Electrical Equipment		14	25-Aug-19	07-Sep-19					Electrical Equipment
Individual Inspection		14	24-Sep-19	07-Oct-19					Individual Inspec

## **Appendix D1**

### **Calibration Certificates for Impact Air Quality Monitoring Equipment**

## Summary of Calibration Certificates for TSP Monitoring Equipment used in this reporting month

Equip No.	Model	Serial No.	Calib Date	Due Date
ET/EA/001/05	Sibata LD-3B	8X4282	15/04/2019	14/10/2019
ET/EA/001/06	Sibata LD-3B	014746	16/04/2019	15/10/2019
ET/EA/001/14	Sibata LD-3B	597340	01/03/2019	31/08/2019
ET/EA/001/15	Sibata LD-3B	597227	17/01/2019	16/07/2019
ET/EA/003/12	Greasby GMW (GS2310)	9998	11/04/2019	10/06/2019
			04/06/2019	03/08/2019
ET/EA/003/25	Greasby GMW (GS2310)	1934	11/04/2019	10/06/2019
			04/06/2019	03/08/2019



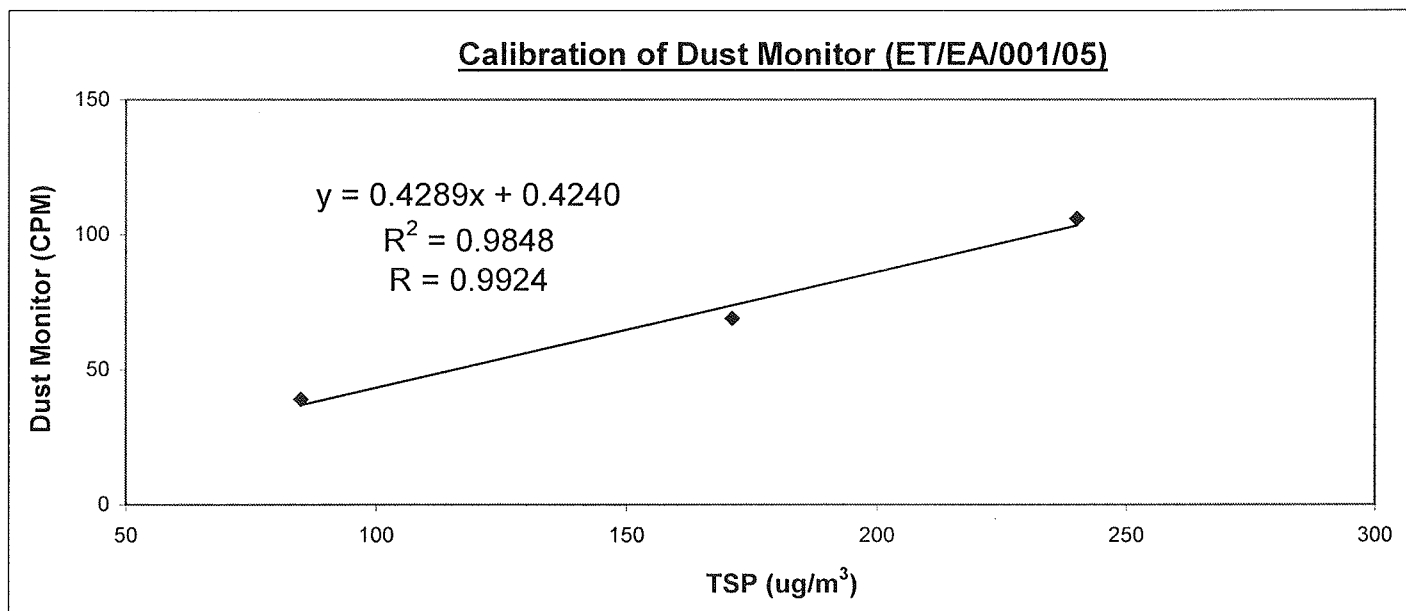
**Internal Calibration Report**  
**of**  
**Dust Monitor**

**Manufacturer** : SIBATA (LD-3B) **Date of Calibration** : 15 April 2019

**Serial No.** : 8X4282 (ET/EA/001/05) **Calibration Due Date** : 14 October 2019

**Method** : Parallel measurement (Three-point calibration) by placing the Dust Monitor and High Volume Air Sampler together under the same environmental condition

<b>Results</b> :	Dust Monitor (CPM)	39	69	106
	TSP ( $\mu\text{g}/\text{m}^3$ )	85	171	240
	High Volume Air Sampler Serial No.: 1177		Calibration Due Date: 28 May 2019	



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after three-point calibration

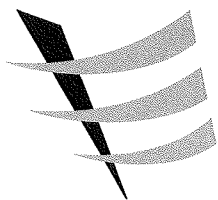
The Dust Trak Monitor complies \* / ~~does not comply~~ \* with the internal calibration procedures and is deemed acceptable \* / unacceptable \* for use.

Calibrated by : LI, Lok Yin  
(Technician)

Checked by : LAU, Chi Leung  
(Environmental Team Leader)

- END OF REPORT -





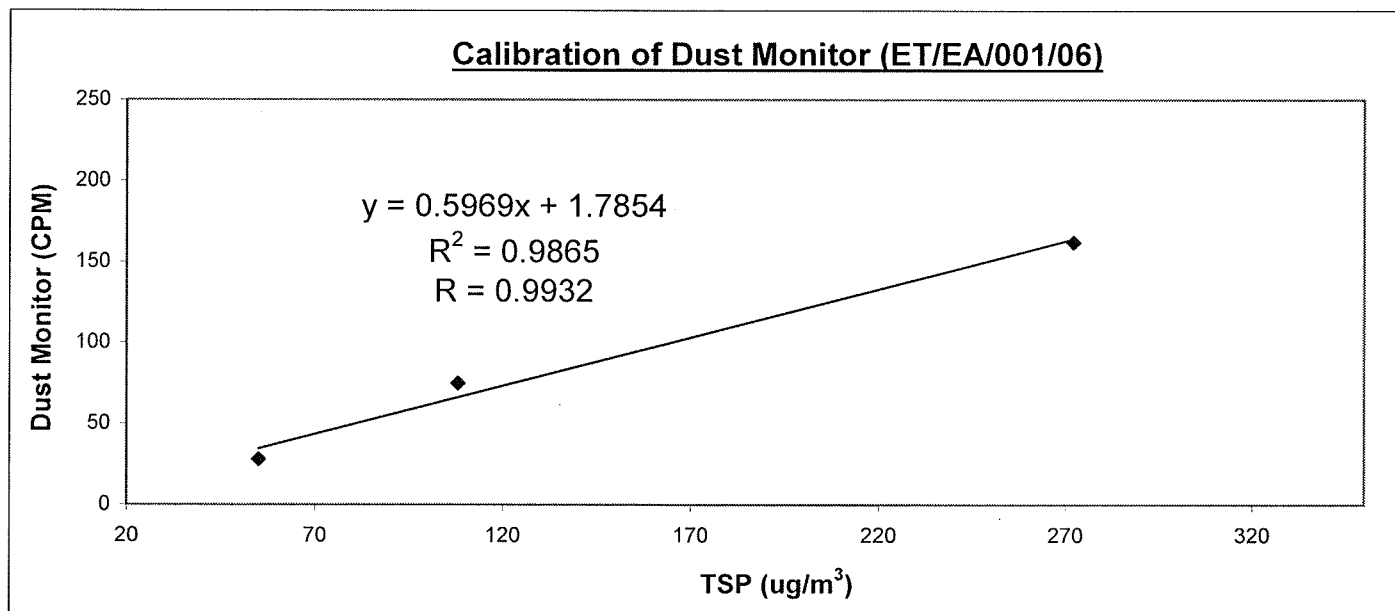
**Internal Calibration Report**  
of  
**Dust Monitor**

Manufacturer : SIBATA (LD-3B) Date of Calibration : 16 April 2019

Serial No. : 014746 (ET/EA/001/06) Calibration Due Date : 15 October 2019


Method : Parallel measurement (Three-point calibration) by placing the Dust Monitor and High Volume Air Sampler together under the same environmental condition

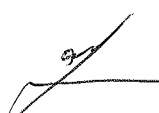
Results	Dust Monitor (CPM)	28	75	162
	TSP (ug/m <sup>3</sup> )	55	108	272
	High Volume Air Sampler Serial No.: 1177		Calibration Due Date: 28 May 2019	



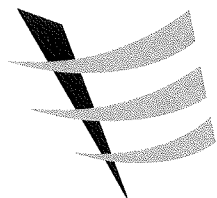
Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after three-point calibration.

The Dust Trak Monitor complies \* / ~~does not comply~~ \* with the internal calibration procedures and is deemed acceptable \* / ~~unacceptable~~ \* for use.

Calibrated by :   
LI, Lok Yin  
(Technician)

Checked by :   
LAU, Chi Leung  
(Environmental Team Leader)

- END OF REPORT -



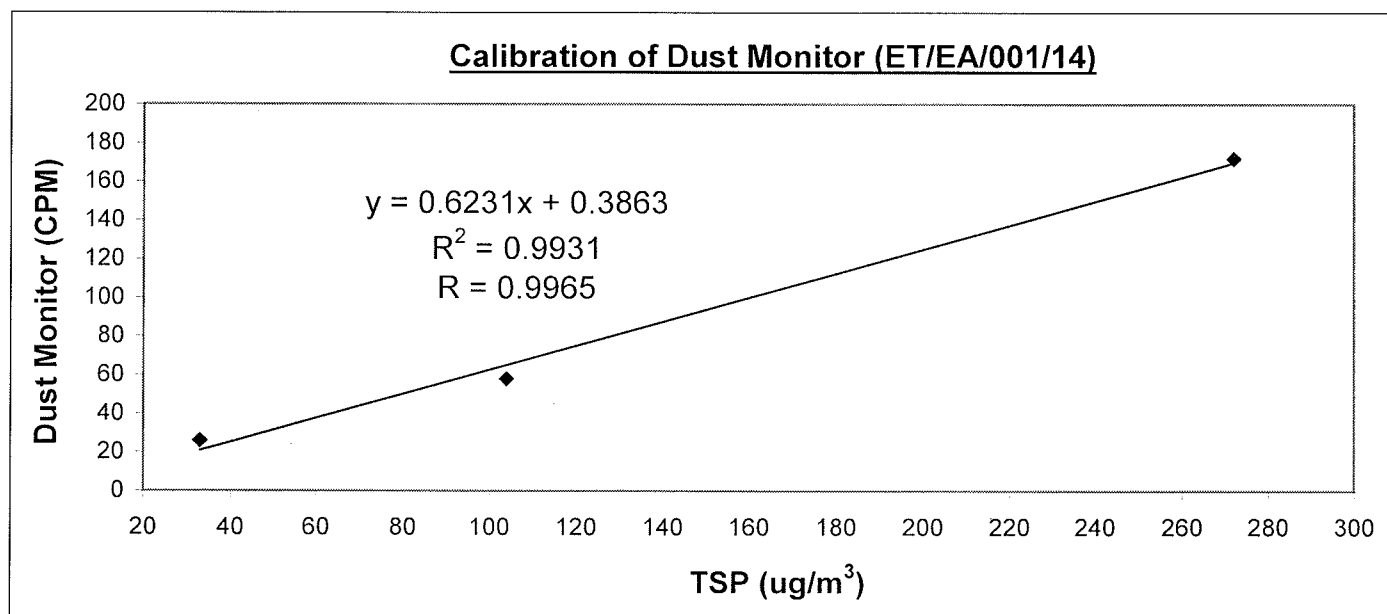
**Internal Calibration Report**  
of  
**Dust Monitor**

**Manufacturer** : SIBATA (LD-3B) Date of Calibration : 01 March 2019

**Serial No.** : 597340 (ET/EA/001/14) Calibration Due Date : 31 August 2019

**Method** : Parallel measurement (Three-point calibration) by placing the Dust Monitor and High Volume Air Sampler together under the same environmental condition

<b>Results</b>	Dust Monitor (CPM)	26	58	172
	High Volume Air Sampler (ug/m <sup>3</sup> )	33	104	272
	High Volume Air Sampler Serial No.: 1177 Calibration Due Date: 29 March 2019			



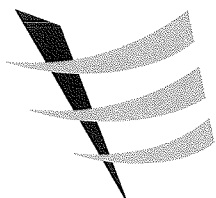
Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a three-point calibration

The Dust Trak Monitor complies \* / ~~does not comply~~ \* with the internal calibration procedures and is deemed acceptable \* / ~~unacceptable~~ \* for use.

Calibrated by : LI, Lok Yin  
(Technician)

Checked by : LAU, Chi Leung  
(Environmental Team Leader)

- END OF REPORT -



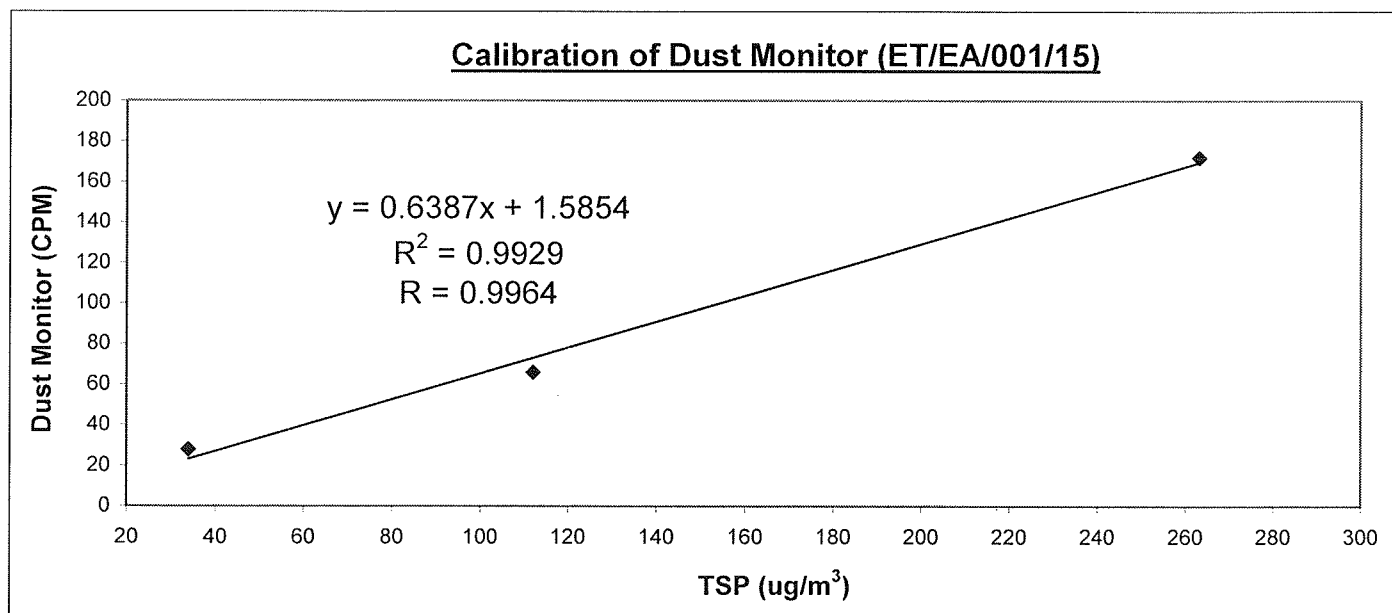
**Internal Calibration Report**  
**of**  
**Dust Monitor**

**Manufacturer** : SIBATA (LD-3B) Date of Calibration : 17 Jan 2019

**Serial No.** : 597227 (ET/EA/001/15) Calibration Due Date : 16 July 2019


**Method** : Parallel measurement (Three-point calibration) by placing the Dust Monitor and High Volume Air Samper together under the same environmental condition


<b>Results</b>	Dust Monitor (CPM)	28	66	172
	TSP (ug/m <sup>3</sup> )	34	112	263
	High Volume Air Sampler Serial No.: 1177 Calibration Due Date: 29 January 2019			

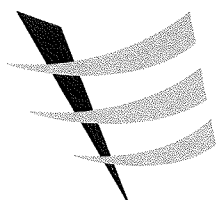


Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a three-point calibration

The Dust Trak Monitor complies \* / ~~does not comply~~ \* with the internal calibration procedures and is deemed acceptable \* / unacceptable \* for use.

Calibrated by :   
LI, Lok Yin  
(Technician)

Checked by :   
LAU, Chi Leung  
(Environmental Team Leader)



**Calibration Report**  
**of**  
**High Volume Air Sampler**

**Manufacturer** : Graseby (Model No. GS2310)      **Date of Calibration** : 11 April 2019

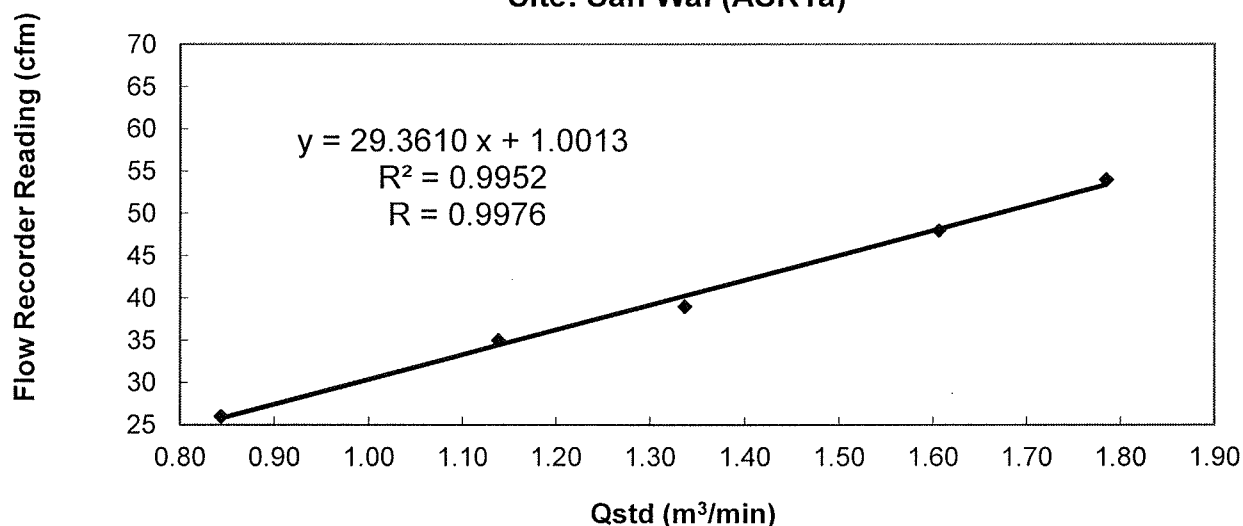
**Serial No.** : 1934 ( ET / EA / 003 / 25 )      **Calibration Due Date** : 10 June 2019

**Method** : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

**Results** :

Flow recorder reading (cfm)	54	48	39	35	26
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.78	1.61	1.34	1.14	0.84
Pressure :	767.31 mm Hg		Temp. :	301 K	

**Sampler 1934 Calibration Curve**  
**Site: San Wai (ASR1a)**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration.

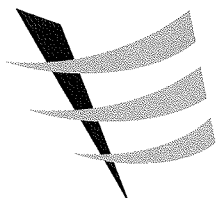
The high volume sampler complies\* / ~~does not comply~~\* with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by :

MAK, Kei Wai  
(Assistant Supervisor)

Approved by :

LAU, Chi Leung  
(Environmental Team Leader)



**Calibration Report**  
**of**  
**High Volume Air Sampler**

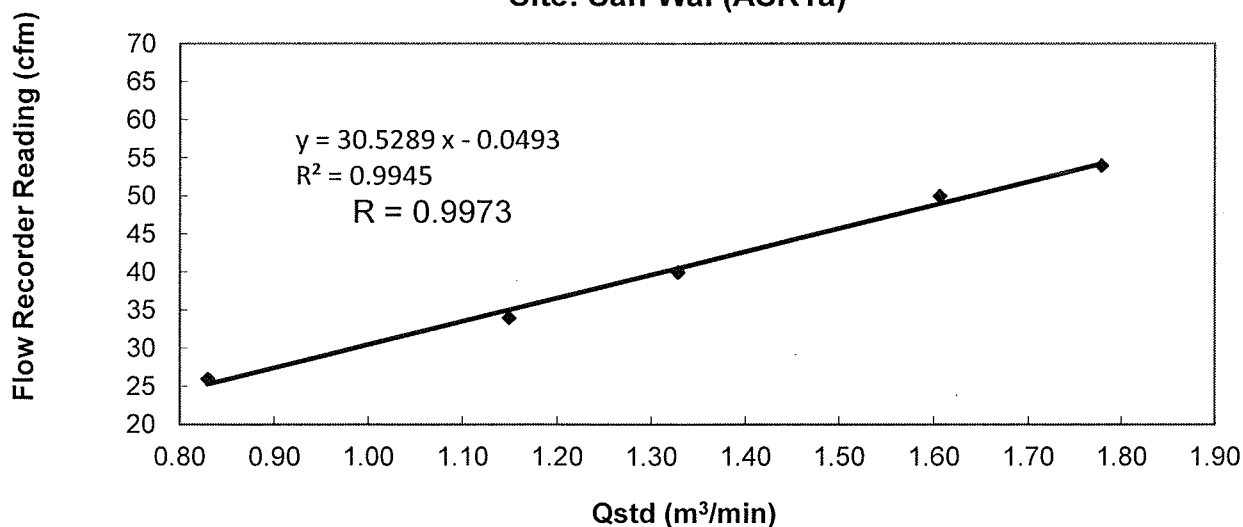
**Manufacturer** : Graseby (Model No. GS2310)      **Date of Calibration** : 04 June 2019

**Serial No.** : 1934 ( ET / EA / 003 / 25 )      **Calibration Due Date** : 03 August 2019

**Method** : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

<b>Results</b> :	Flow recorder reading (cfm)	54	50	40	34	26
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.78	1.61	1.33	1.15	0.83
	Pressure : 767.31 mm Hg	Temp. : 301 K				

**Sampler 1934 Calibration Curve**  
**Site: San Wai (ASR1a)**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration.

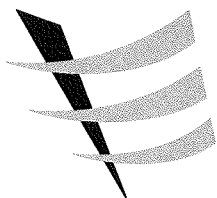
The high volume sampler complies\* / ~~does not comply\*~~ with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by :

TANG, Chung Hang  
(Supervisor)

Approved by :

LAU, Chi Leung  
(Environmental Team Leader)



**Calibration Report**  
**of**  
**High Volume Air Sampler**

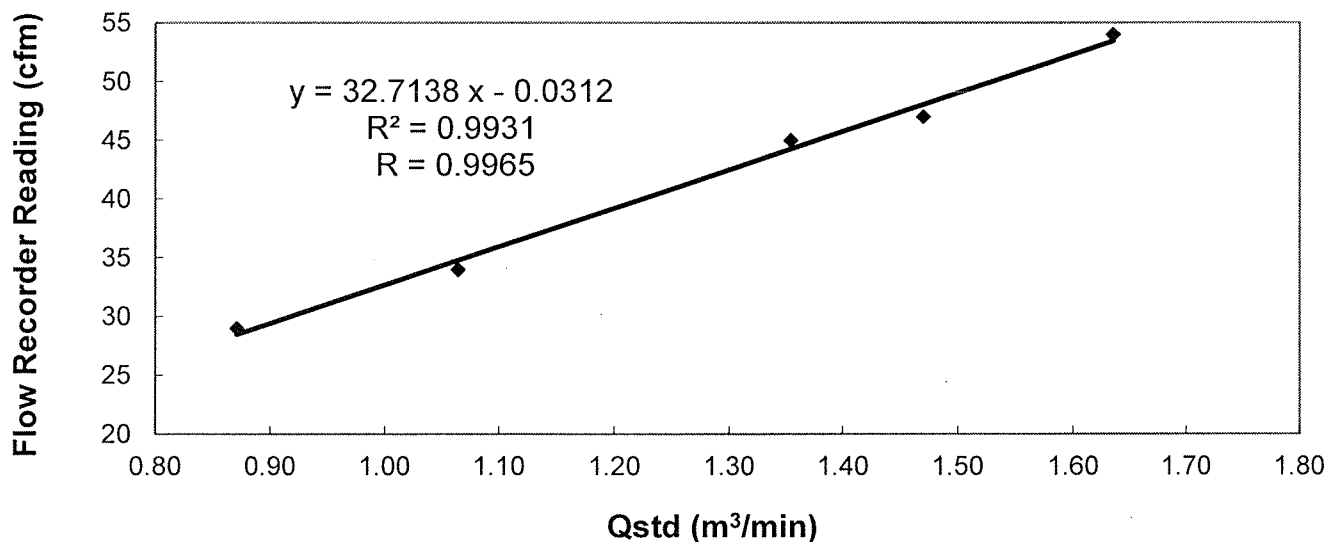
**Manufacturer** : Graseby (Model No. GS2310)      **Date of Calibration** : 11 April 2019

**Serial No.** : 9998 ( ET / EA / 003 / 12 )      **Calibration Due Date** : 10 June 2019

**Method** : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

<b>Results</b> :	Flow recorder reading (cfm)	54	47	45	34	29
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.63	1.47	1.35	1.06	0.87
	Pressure : 767.31 mm Hg	Temp. : 301 K				

**Sampler 9998 Calibration Curve**  
**Site: San Wai (ASR2a)**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration.

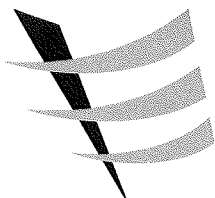
The high volume sampler complies\* / ~~does not comply\*~~ with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by :

MAK, Kei Wai  
(Assistant Supervisor)

Checked by :

LAU, Chi Leung  
(Environmental Team Leader)



**Calibration Report**  
**of**  
**High Volume Air Sampler**

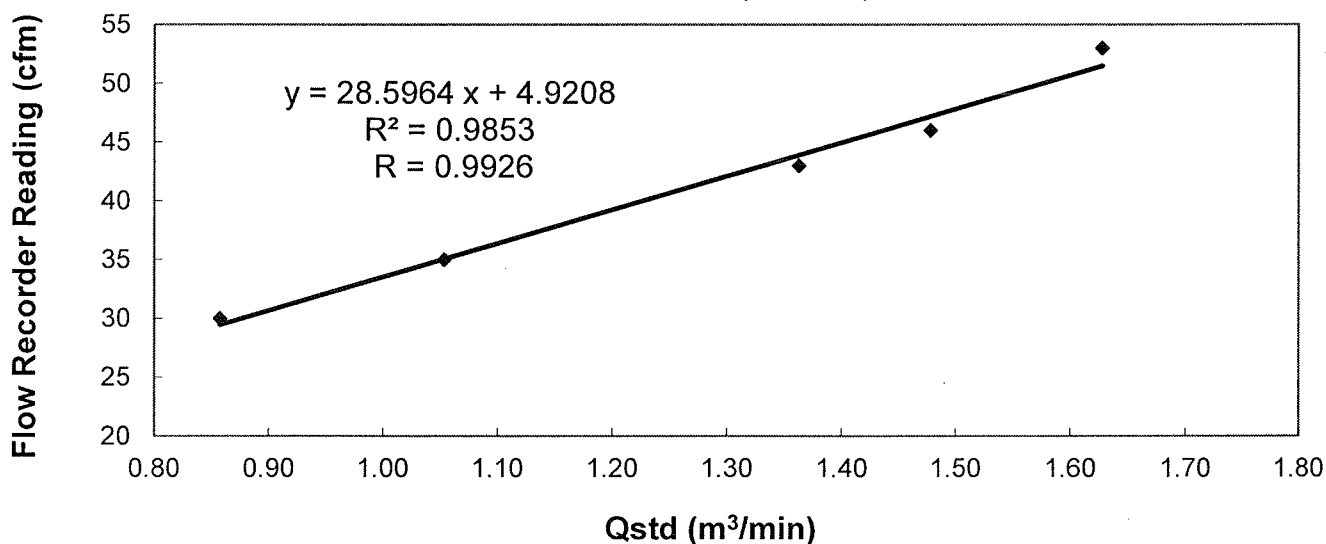
**Manufacturer** : Graseby (Model No. GS2310)      **Date of Calibration** : 04 June 2019

**Serial No.** : 9998 ( ET / EA / 003 / 12 )      **Calibration Due Date** : 03 August 2019

**Method** : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

<b>Results</b> :	Flow recorder reading (cfm)	53	46	43	35	30
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.63	1.48	1.36	1.05	0.86
	Pressure : 767.31 mm Hg	Temp. : 301 K				


**Sampler 9998 Calibration Curve**  
**Site: San Wai (ASR2a)**




Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration.

The high volume sampler complies\* / ~~does not comply\*~~ with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by :

  
TANG, Chung Hang  
(Supervisor)

Checked by :

  
LAU, Chi Leung  
(Environmental Team Leader)

- END OF REPORT -

## **Appendix D2**

### **Impact Air Quality Monitoring Results**



## **Summary of Impact 1-hour TSP Monitoring Results**

### **Air Quality Monitoring Station : ASR1a**

Date	Weather	Temperature (°C)	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )
			Start	Finish	
04/06/2019	Fine	26	09:00	10:00	109
04/06/2019	Fine	26	10:00	11:00	108
04/06/2019	Fine	26	11:00	12:00	113
10/06/2019	Cloudy	31	09:19	10:19	41
10/06/2019	Cloudy	31	10:19	11:19	46
10/06/2019	Cloudy	32	13:00	14:00	43
15/06/2019	Fine	26	09:00	10:00	72
15/06/2019	Fine	26	10:00	11:00	82
15/06/2019	Fine	26	11:00	12:00	86
21/06/2019	Fine	27	08:57	09:57	67
21/06/2019	Fine	27	09:57	10:57	72
21/06/2019	Fine	27	10:57	11:57	70
27/06/2019	Fine	29	09:30	10:30	92
27/06/2019	Fine	29	10:30	11:30	102
27/06/2019	Fine	30	13:30	14:30	83
Min					41
Max					113
Average					79

### **Air Quality Monitoring Station : ASR2b**

Date	Weather	Temperature (°C)	Monitoring Period		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )
			Start	Finish	
04/06/2019	Fine	26	13:10	14:10	87
04/06/2019	Fine	26	14:10	15:10	89
04/06/2019	Fine	26	15:10	16:10	82
10/06/2019	Cloudy	31	09:52	10:52	35
10/06/2019	Cloudy	31	10:52	11:52	36
10/06/2019	Cloudy	32	13:00	14:00	36
15/06/2019	Fine	26	13:30	14:30	66
15/06/2019	Fine	26	14:30	15:30	73
15/06/2019	Fine	26	15:30	16:30	71
21/06/2019	Fine	27	13:11	14:11	88
21/06/2019	Fine	27	14:11	15:11	85
21/06/2019	Fine	27	15:11	16:11	83
27/06/2019	Fine	29	09:45	10:45	86
27/06/2019	Fine	29	10:45	11:45	93
27/06/2019	Fine	30	14:00	15:00	87
Min					35
Max					93
Average					73

## Summary of Impact 24-hour TSP Monitoring Results

### **Air Quality Monitoring Station : ASR1a**

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Paper Weight (g)		Conc. (μg/m <sup>3</sup> )	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
04/06/2019	09:05	05/06/2019	09:05	25949.64	25973.64	24	1.0498	1.0498	1.0498	2.6288	2.7213	61	Fine
10/06/2019	09:25	11/06/2019	09:25	25973.64	25997.64	24	1.0498	1.0498	1.0498	2.7040	2.8083	69	Cloudy
15/06/2019	09:05	16/06/2019	09:05	25997.64	26021.64	24	1.0826	1.0826	1.0826	2.6578	2.7762	76	Fine
21/06/2019	09:00	22/06/2019	09:00	26021.64	26045.64	24	1.0826	1.0826	1.0826	2.5841	2.6869	66	Fine
27/06/2019	09:40	28/06/2019	09:40	26045.64	26069.64	24	1.0826	1.0826	1.0826	2.6336	2.7302	62	Fine
											Min	61	
											Max	76	
											Average	67	

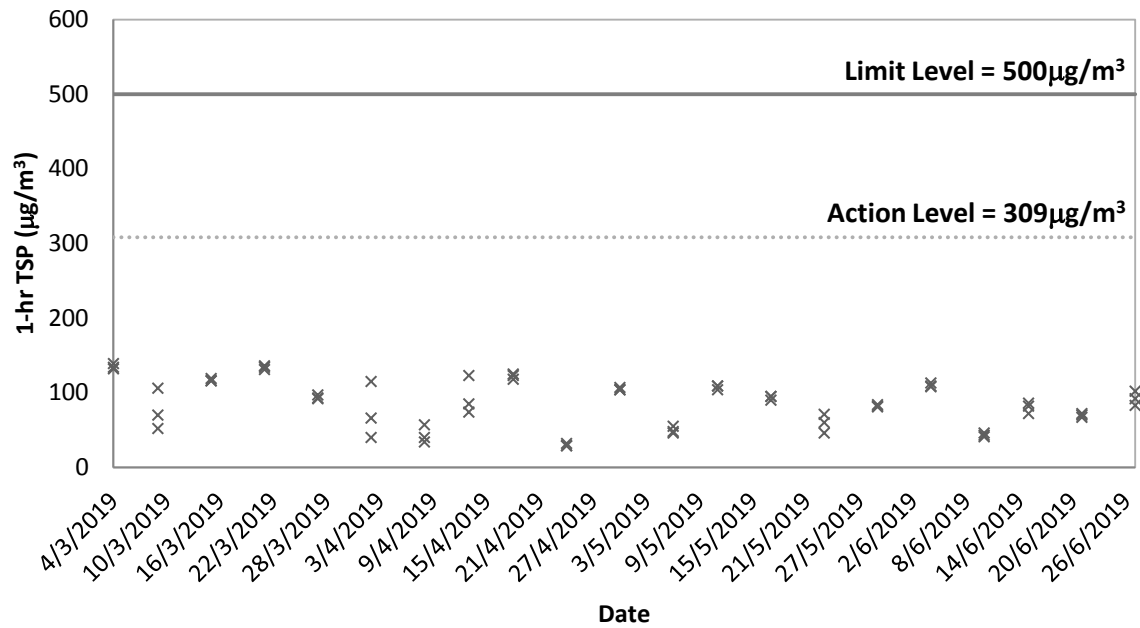
### **Air Quality Monitoring Station : ASR2b**

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Paper Weight (g)		Conc. (μg/m <sup>3</sup> )	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
04/06/2019	13:15	05/06/2019	13:15	22694.45	22718.45	24	0.9469	0.9469	0.9469	2.6531	2.7362	61	Cloudy
10/06/2019	10:00	11/06/2019	10:00	22718.45	22742.45	24	0.9469	0.9469	0.9469	2.6584	2.7647	78	Fine
15/06/2019	13:35	16/06/2019	13:35	22742.45	22766.45	24	0.9469	0.9469	0.9469	2.6104	2.7058	70	Fine
21/06/2019	13:15	22/06/2019	13:15	22766.45	22790.45	24	0.9469	0.9469	0.9469	2.6275	2.7215	69	Fine
27/06/2019	09:55	28/06/2019	09:55	22790.45	22814.45	24	0.9819	0.9819	0.9819	2.6581	2.7514	66	Fine
											Min	61	
											Max	78	
											Average	69	

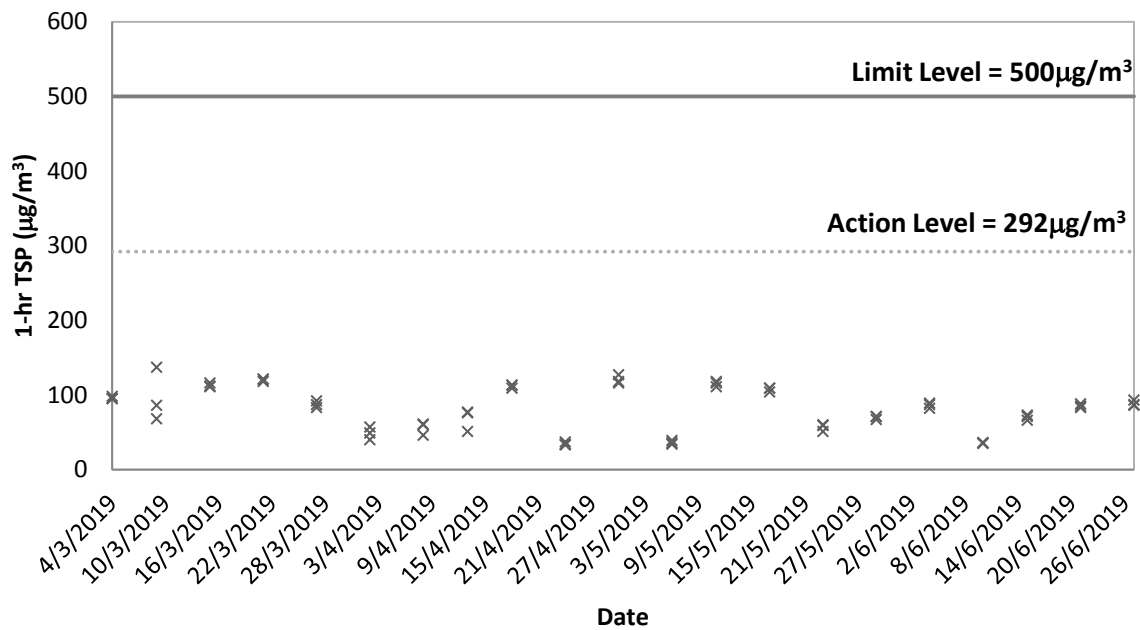
## **Appendix D3**

### **Graphical Plots of Impact Air Quality Monitoring Results**

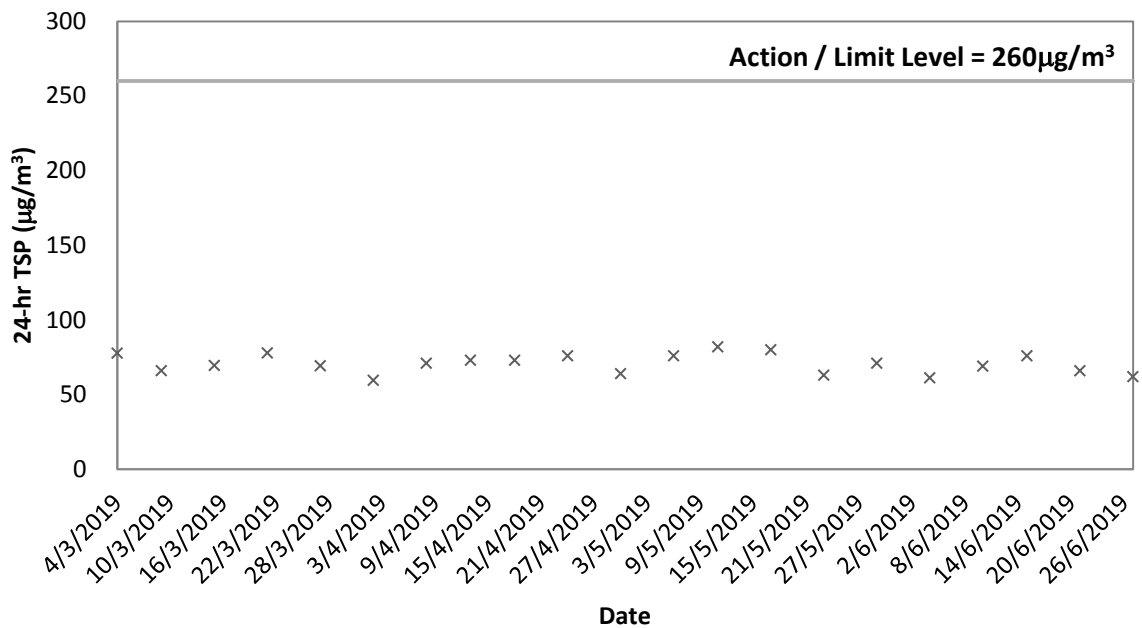
### 1-hr TSP at ASR1a



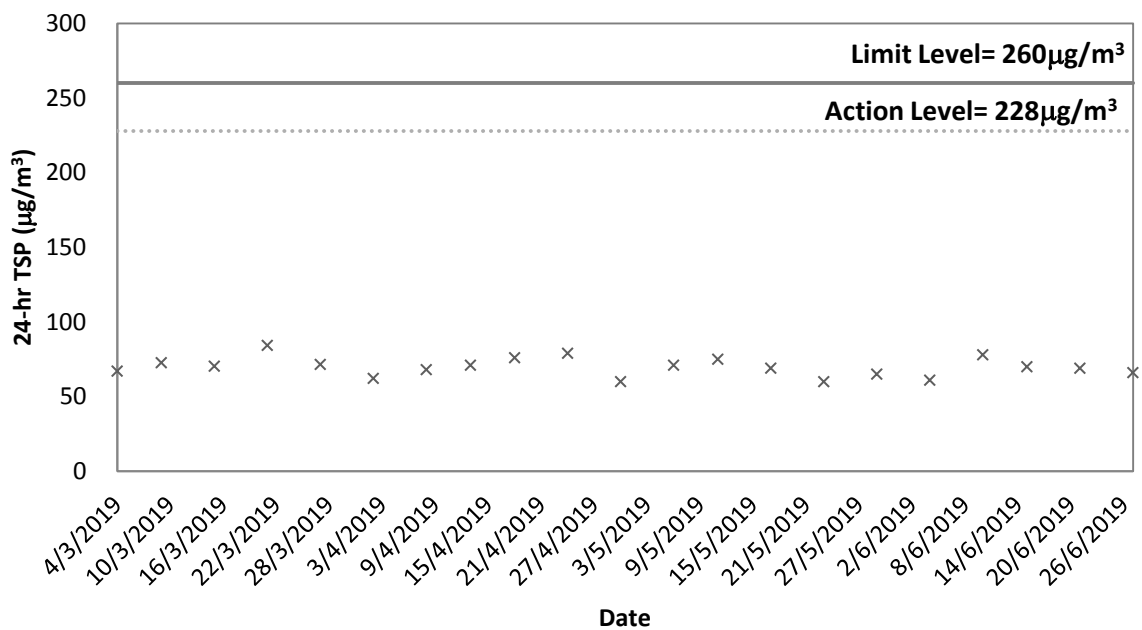
### 1-hr TSP at ASR2b



## 24-hr TSP at ASR1a



## 24-hr TSP at ASR2b

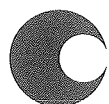


## **Appendix E1**

### **Calibration Certificates for Impact Noise Monitoring Equipment**

## Summary of Calibration Certificates for Noise Monitoring Equipment used in this reporting month

Equipment	Equip No.	Serial No.	Calib. Date	Due Date
Sound Level Calibrator (Rion NC-73)	ET/EN/002/01	10196943	23/10/2018	22/10/2019
Sound Level Calibrator (Castle GA607)	ET/EN/002/07	038641	06/03/2019	05/03/2020
Sound Level Meter (Rion NL-52)	ET/EN/003/18	00264520	27/02/2019	26/02/2020
Thermo-Anemometer (AZ 8908)	ET/EN/001/05	1064869	04/03/2019	03/03/2020



# Calibration Certificate

Certificate No. **810241**

Page **1** of **2** Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q84111

**Date of receipt :** 15-Oct-18

## Item Tested

**Description :** Sound Level Calibrator

**Manufacturer :** Rion

**I.D. :** ET/EN/002/01

**Model :** NC-73

**Serial No. :** 10196943

## Test Conditions

**Date of Test :** 23-Oct-18

**Supply Voltage :** --

**Ambient Temperature :**  $(23 \pm 3)^{\circ}\text{C}$

**Relative Humidity :**  $(50 \pm 25) \%$

## Test Specifications

Calibration check.

Ref. Document/Procedure : F21, Z02.

## Test Results

All results were within the manufacturer's specification.

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	805025	NIM-PRC & SCL-HKSAR
S240	Sound Level Calibrator	803357	NIM-PRC & SCL-HKSAR
S041	Universal Counter	802061	SCL-HKSAR
S206	Sound Level Meter	805027	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.

The test results apply to the above Unit-Under-Test only

**Calibrated by :** 

Elva Chong

**Approved by :** 

Kin Wong

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

**Date:** 23-Oct-18





# Calibration Certificate

Certificate No. 810241

Page 2 of 2 Pages

Results :

**1. Level Accuracy (at 1 kHz)**

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	94.2 dB	$\pm 1$ dB

Uncertainty :  $\pm 0.2$  dB

**2. Frequency Accuracy**

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	1.017 kHz	$\pm 2$ %

Uncertainty :  $\pm 0.1$  %

**3. Level Stability : 0.0 dB**

Uncertainty :  $\pm 0.01$  dB

**4. Total Harmonic Distortion :  $< 0.3$  %**

Mfr's Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % of reading

Remarks: 1. UUT : Unit-Under-Test  
2. The uncertainty claimed is for a confidence probability of not less than 95%.  
3. Atmospheric Pressure : 1 018 hPa

----- END -----



# Calibration Certificate

Certificate No. **901844**

Page 1 of 2 Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q90738

**Date of receipt :** 26-Feb-19

## Item Tested

**Description :** Acoustic Calibrator

**Manufacturer :** Castle

**I.D. :** ET/EN/002/07

**Model :** GA607

**Serial No. :** 038641

## Test Conditions

**Date of Test :** 6-Mar-19

**Supply Voltage :** --

**Ambient Temperature :**  $(23 \pm 3)^{\circ}\text{C}$

**Relative Humidity :**  $(50 \pm 25) \%$

## Test Specifications

Calibration check.

Ref. Document/Procedure : IEC 60942, F06, F20, Z02.

## Test Results

All results were within the IEC 60942 Class 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	805025	NIM-PRC & SCL-HKSAR
S240	Sound Level Calibrator	803357	NIM-PRC & SCL-HKSAR
S041	Universal Counter	802061	SCL-HKSAR
S206	Sound Level Meter	805027	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.  
The test results apply to the above Unit-Under-Test only

**Calibrated by :** 

Elva Chong

**Approved by :** 

Kin Wong

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

**Date:** 6-Mar-19



# Calibration Certificate

Certificate No. 901844

Page 2 of 2 Pages

Results :

## 1. Generated Sound Pressure Level

UUT Nominal Value (dB)	Measured Value (dB)	IEC 60942 Class 1 Spec.
94.0	94.1	$\pm 0.4$ dB

Uncertainty :  $\pm 0.2$  dB

## 2. Short-term Level Fluctuation : 0.0 dB

IEC 60942 Class 1 Spec. :  $\pm 0.1$  dB

Uncertainty :  $\pm 0.01$  dB

## 3. Frequency

UUT Nominal Value (kHz)	Measured Value (kHz)	IEC 60942 Class 1 Spec.
1	1.000	$\pm 1$ %

Uncertainty :  $\pm 3.6 \times 10^{-6}$

## 4. Total Distortion : $< 2.9$ %

IEC 60942 Class 1 Spec. :  $< 4$  %

Uncertainty :  $\pm 2.3$  % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 002 hPa.

----- END -----



# Calibration Certificate

Certificate No. **901292**

Page **1** of **3** Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q90546

**Date of receipt :** 14-Feb-19

## Item Tested

**Description :** Sound Level Meter

**Manufacturer :** Rion

**I.D. :** ET/EN/003/18

**Model :** NL-52

**Serial No. :** 00264520

## Test Conditions

**Date of Test :** 27-Feb-19

**Supply Voltage :** --

**Ambient Temperature :**  $(23 \pm 3)^{\circ}\text{C}$

**Relative Humidity :**  $(50 \pm 25) \%$

## Test Specifications

Calibration check.

Ref. Document/Procedure: Z01, IEC 61672.

## Test Results

All results were within the IEC 61672 Type 1 or manufacturer's specification.


The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C190926	SCL-HKSAR
S240	Sound Level Calibrator	803357	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.  
The test results apply to the above Unit-Under-Test only

**Calibrated by :**   
Elva Chong

**Approved by :**   
Kin Wong

**Date:** 27-Feb-19

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

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# Calibration Certificate

Certificate No. 901292

Page 2 of 3 Pages

Results :

## Acoustical signal test

1. Self-generated noise: 15.9 dBA (Mfr's Spec  $\leq 17$  dBA )

## 2. Reference Sound Pressure Level

UUT Setting				Applied Value (dB)	UUT Reading (dB)
Range (dB)	Frequency Weighting	Time Weighting	Octave Filter		
20 ~ 130	A	F	OFF	94.0	94.0
		S	OFF		94.0
	C	F	OFF		94.0
	Z	F	OFF		94.0
	A	F	OFF	114.0	114.0
		S	OFF		114.0
	C	F	OFF		114.0
	Z	F	OFF		114.0

IEC 61672 Type 1 Spec. :  $\pm 1.1$  dB

Uncertainty :  $\pm 0.1$  Db

## Electrical signal tests

### 3. Electrical signal tests of frequency weightings (A weighting)

Frequency	Attenuation (dB)	IEC 61672 Type 1 Spec.
31.5 Hz	-39.6	- 39.4 dB, $\pm 2$ dB
63 Hz	-26.3	- 26.2 dB, $\pm 1.5$ dB
125 Hz	-16.2	- 16.1 dB, $\pm 1.5$ dB
250 Hz	-8.7	- 8.6 dB, $\pm 1$ dB
500 Hz	-3.3	- 3.2 dB, $\pm 1.4$ dB
1 kHz	0.0 (Ref)	0 dB, $\pm 1.1$ dB
2 kHz	+1.2	+ 1.2 dB, $\pm 1.6$ dB
4 kHz	+1.0	+ 1.0 dB, $\pm 1.6$ dB
8 kHz	-1.1	- 1.1 dB, + 2.1 dB ~ -3.1 dB
16 kHz	-8.0	- 6.6 dB, + 3.5 dB ~ - 17.0 dB

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. 901292

Page 3 of 3 Pages

## 4. Frequency & Time weightings at 1 kHz

### 4.1 Frequency Weighting (Fast)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
A	94.0	94.0 (Ref.)	- -	$\pm 0.4$ dB
C	94.0	94.0	0.0	
Z	94.0	94.0	0.0	

### 4.2 Time Weighting (A-weighted)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
Fast	94.0	94.0 (Ref.)	- -	$\pm 0.3$ dB
Slow	94.0	94.0	0.0	
Time-averaging	94.0	94.0	0.0	

Uncertainty :  $\pm 0.1$  dB

Remarks : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 001 hPa.

4. Preamplifier model : NH-25 , S/N : 64645

5. Firmware Version: 1.7

6. Power Supply Check: OK

7. The UUT was adjusted with the laboratory's sound calibrator at the reference sound pressure level before the calibration.

----- END -----



# Calibration Certificate

Certificate No. **901843**

Page 1 of 2 Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q90738

**Date of receipt :** 26-Feb-19

## Item Tested

**Description :** Thermo-Anemometer

**Manufacturer :** AZ Instrument

**Model :** AZ 8908

**I.D. :** ET/EN/001/05

**Serial No. :** 1064869

## Test Conditions

**Date of Test :** 4-Mar-19

**Supply Voltage :** --

**Ambient Temperature :**  $(23 \pm 3)^{\circ}\text{C}$

**Relative Humidity :**  $(50 \pm 25) \%$

## Test Specifications

Calibration check.

Calibration procedure : T03, Z04.

## Test Results

A correction factor of x 1.1 is required to bring the meter reading to within the manufacturer's specification.  
The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S155	Std. Anemometer	809939	NIM-PRC
S223C	Std. Thermometer	805692	NIM-PRC

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.  
The test results apply to the above Unit-Under-Test only

**Calibrated by :** PN Lee

**Approved by :** Steve Kwan

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

**Date:** 4-Mar-19



# Calibration Certificate

Certificate No. **901843**

Page 2 of 2 Pages

Results :

## 1. Velocity

Applied Value (m/s)	UUT Reading (m/s)	Corrected Reading (UUT Rdg. $\times$ 1.1)	Mfr's Spec.
0.00	0.0	0.0	$\pm$ (3 % of reading + 0.2 m/s)
2.50	2.3	2.5	
5.00	* 4.6	5.1	
10.00	* 9.0	9.9	
15.00	* 13.6	15.0	
19.00	* 17.0	18.7	

## 2. Temperature

Applied Value (°C)	UUT Reading (°C)	Mfr's Spec.
23.49	23.2	$\pm$ 1 °C

Remark : 1. UUT: Unit-Under-Test

2. Uncertainty :  $\pm$  (0.9 % + 0.16 m/s) for Velocity,  $\pm$  0.1 °C for Temperature, for a confidence probability of not less than 95 %.

3. Atmospheric Pressure : 1 001 hPa

4. \* Out of Specification.

----- END -----



## **Appendix E2**

### **Impact Noise Monitoring Results**

## Day-time Noise Monitoring

### Monitoring Station: NSR1a

Date	Weather	Temperature (°C)	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at NSR1a, dB (A)			Wind Speed (m/s)
					Leq (30min)	L10 (30min)	L90 (30min)	
04/06/19	Fine	26	09:04	09:34	64.1	66.7	63.5	0.3
10/06/19	Cloudy	31	09:17	09:47	69.4	71.6	66.3	0.1
15/06/19	Fine	26	09:30	10:00	67.3	71.4	65.1	0.3
21/06/19	Fine	27	09:07	09:37	68.4	71.1	65.1	0.3
27/06/19	Fine	29	09:33	10:03	63.8	66.9	62.3	0.3
Min					63.8	66.7	62.3	
Max					69.4	71.6	66.3	
Logarithmic Average for normal weekdays					67.2	70.1	64.7	

### Monitoring Station: NSR2b

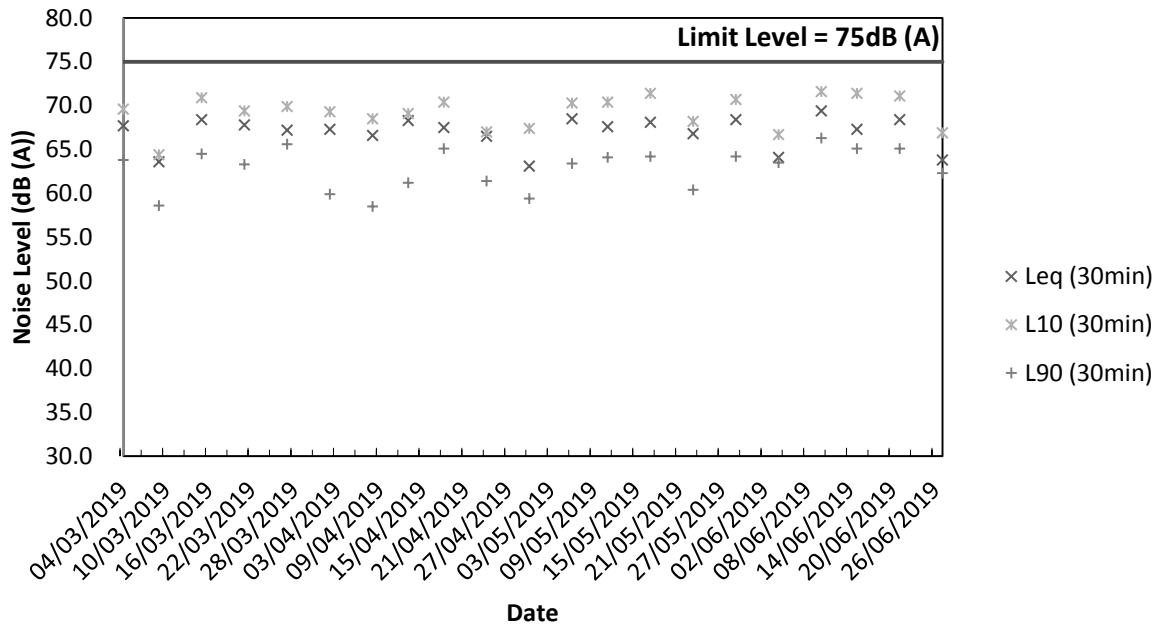
Date	Weather	Temperature (°C)	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at NSR2b, dB (A)			Wind Speed (m/s)
					Leq (30min)	L10 (30min)	L90 (30min)	
04/06/19	Fine	26	13:10	13:40	66.1	68.4	64.2	0.4
10/06/19	Cloudy	31	09:50	10:20	68.2	70.4	63.8	0.1
15/06/19	Fine	26	13:30	14:00	66.4	73.0	63.2	0.4
21/06/19	Fine	27	13:11	13:41	69.4	73.0	66.2	0.3
27/06/19	Fine	29	10:18	10:48	65.7	69.4	63.3	0.3
Min					65.7	68.4	63.2	
Max					69.4	73.0	66.2	
Logarithmic Average for normal weekdays					67.4	71.2	64.3	

(\*) : 3dB(A) correction was added to the results during the free-field noise measurements

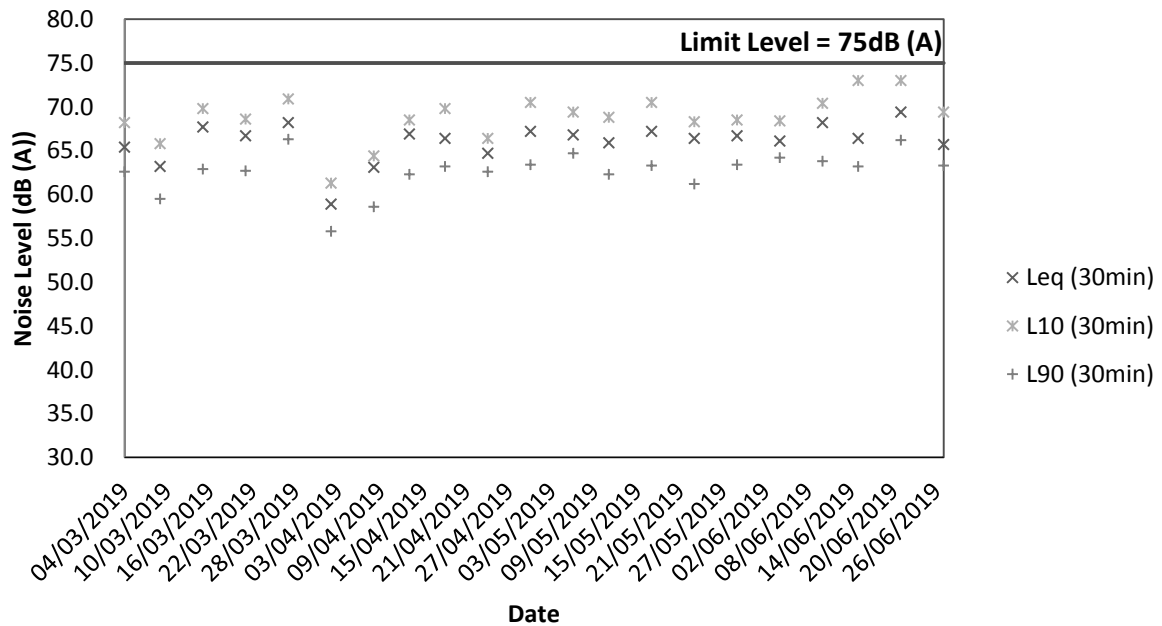
## **Appendix E3**

### **Graphical Plots of Impact Noise Monitoring Data**

## Noise Level at NSR1a



## Noise Level at NSR2b



## **Appendix F1**

### **Calibration Certificates for Impact Water Quality Monitoring Equipments**



### Calibration Report of Dissolved Oxygen Meter (*In situ* Measurement)

Equipment Ref. No. : ET/EW/008/006 Manufacturer : YSI  
Model No. : Pro 2030 Serial No. : 12A100554  
Calibration Date : 2/3/2019 Calibration Due Date : 1/6/2019

#### Temperature Verification by Reference Thermometer (ET/0521/028)

	Temperature Reading (°C)	Correction (°C)	Corrected Temperature (°C)	Difference (°C)
Reference Thermometer	20.2	0.0	20.2	0.1
DO Meter	20.3	0.0	20.3	

Criteria: Difference between corrected temperature from DO meter and reference thermometer :  $< \pm 0.5^{\circ}\text{C}$

#### Zero Point Checking

DO meter reading (mg/L)	0.01
-------------------------	------

Criteria: Zero checking: 0.0 mg/L

#### Linearity Checking of Dissolved Oxygen Content by APHA 19ed 4500-O G

Purging time, min	Expected DO value (mg/L) (ET/0510/012)	DO meter reading (mg/L)	Difference of DO Content (mg/L)
2	6.22	6.41	0.19
5	3.88	3.96	0.08
10	2.15	2.31	0.16

Criteria: Difference between DO meter reading and expected DO value:  $< \pm 0.30\text{ mg/L}$

#### Salinity Checking by APHA 19ed 2520 B

	Expected Salinity (ppt)	DO meter reading (ppt)
Reagent No. of NaCl (10 ppt): CPE/012/4.7/27	10	9.3
Reagent No. of NaCl (30 ppt): CPE/012/4.8/27	30	28.5

Criteria: Difference between DO meter reading and expected Salinity:  $\pm 10.0\%$

The equipment complies <sup>#</sup> / ~~does not comply~~ <sup>#</sup> with the specified requirements and is deemed acceptable <sup>#</sup> / unacceptable <sup>#</sup> for use.

<sup>#</sup> Delete as appropriate

Calibrated by : 

Approved by : 



## Calibration Report of Dissolved Oxygen Meter (*In situ* Measurement)

Equipment Ref. No. : ET/EW/008/006  
Model No. : Pro 2030  
Calibration Date : 3/6/2019

Manufacturer : YSI  
Serial No. : 12A100554  
Calibration Due Date : 2/9/2019

### Temperature Verification by Reference Thermometer (ET/0521/028)

	Temperature Reading (°C)	Correction (°C)	Corrected Temperature (°C)	Difference (°C)
Reference Thermometer	21.5	0.0	21.5	-0.1
DO Meter	21.4	0.0	21.4	

Criteria: Difference between corrected temperature from DO meter and reference thermometer :  $< \pm 0.5^{\circ}\text{C}$

### Zero Point Checking

DO meter reading (mg/L)	0.03
-------------------------	------

Criteria: Zero checking: 0.0 mg/L

### Linearity Checking of Dissolved Oxygen Content by APHA 19ed 4500-O G

Purging time, min	Expected DO value (mg/L) (ET/0510/012)	DO meter reading (mg/L)	Difference of DO Content (mg/L)
2	6.07	6.19	0.12
5	3.76	3.93	0.17
10	2.26	2.41	0.15

Criteria: Difference between DO meter reading and expected DO value:  $< \pm 0.30 \text{ mg/L}$

### Salinity Checking by APHA 19ed 2520 B

	Expected Salinity (ppt)	DO meter reading (ppt)
Reagent No. of NaCl (10 ppt): CPE/012/4.7/005/01	10	9.5
Reagent No. of NaCl (30 ppt): CPE/012/4.8/005/01	30	28.7

Criteria: Difference between DO meter reading and expected Salinity:  $\pm 10.0 \%$

The equipment complies <sup>#</sup> / ~~does not comply~~ <sup>#</sup> with the specified requirements and is deemed acceptable <sup>#</sup> / unacceptable <sup>#</sup> for use.

<sup>#</sup> Delete as appropriate

Calibrated by :       *z*      

Approved by :       *[Signature]*



## Performance Check of Turbidity Meter

Equipment Ref. No. : ET/0505/021 Manufacturer : HACH  
Model No. : 2100Q Serial No. : 17020C056013  
Date of Calibration : 25/4/2019 Due Date : 24/7/19


Theoretical Value of Turbidity Standard (NTU)	Measured Value (NTU)	Difference % *
20	20.2	1.0%
100	102	2.0%
800	785	-1.9%

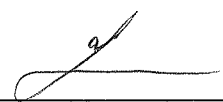
(\*) Difference = (Measured Value – Theoretical Value) / Theoretical Value x 100

Acceptance Criteria

Difference : -5 % to 5 %

The turbidity meter complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use. Measurements are traceable to national standards.

Prepared by : 

Checked by : 



## **Appendix F2**

### **Impact Water Quality Monitoring Results**

## Impact Water Quality Monitoring

### Monitoring Station: R1b

Date	Sampling Duration	Weather Condition	Sampling Level	Turbidity (NTU)			Dissolved Oxygen (DO) (mg/L)			Suspended Solid (SS) (mg/L)		
				1	2	Ave.	1	2	Ave.	1	2	Ave.
01/06/19	09:35-09:40	Cloudy	Mid-Depth	12.0	12.2	12.1	2.27	2.29	2.28	5	5	5
04/06/19	14:15-14:24	Cloudy	Mid-Depth	17.8	17.5	17.7	2.03	2.00	2.02	6	6	6
06/06/19	10:00-10:05	Cloudy	Mid-Depth	8.1	8.1	8.1	2.41	2.37	2.39	<5	<5	<5
08/06/19	13:10-13:15	Fine	Mid-Depth	5.0	5.0	5.0	2.03	1.99	2.01	<5	<5	<5
11/06/19	12:44-12:53	Cloudy	Mid-Depth	15.5	15.3	15.4	2.18	2.15	2.17	8	7	8
13/06/19	16:45-16:56	Fine	Mid-Depth	18.8	18.7	18.8	2.01	2.03	2.02	7	7	7
15/06/19	13:10-13:15	Fine	Mid-Depth	5.8	5.7	5.7	2.07	2.09	2.08	<5	<5	<5
18/06/19	15:35-15:44	Cloudy	Mid-Depth	9.8	9.1	9.5	2.62	2.65	2.64	<5	<5	<5
20/06/19	14:15-14:24	Cloudy	Mid-Depth	11.2	11.3	11.3	2.25	2.22	2.24	<5	<5	<5
22/06/19	12:30-12:35	Fine	Mid-Depth	7.2	7.2	7.2	2.62	2.65	2.64	<5	<5	<5
25/06/19	12:50-13:00	Cloudy	Mid-Depth	10.7	10.5	10.6	2.85	2.90	2.88	9	9	9
27/06/19	12:20-12:25	Cloudy	Mid-Depth	8.7	8.6	8.6	2.50	2.53	2.52	<5	<5	<5
29/06/19	13:05-13:10	Cloudy	Mid-Depth	10.6	10.4	10.5	2.02	1.97	2.00	<5	<5	<5
				Min		5.0	Min		1.97	Min		<5
				Max		18.8	Max		2.90	Max		9
				Average		10.8	Average		2.30	Average		3

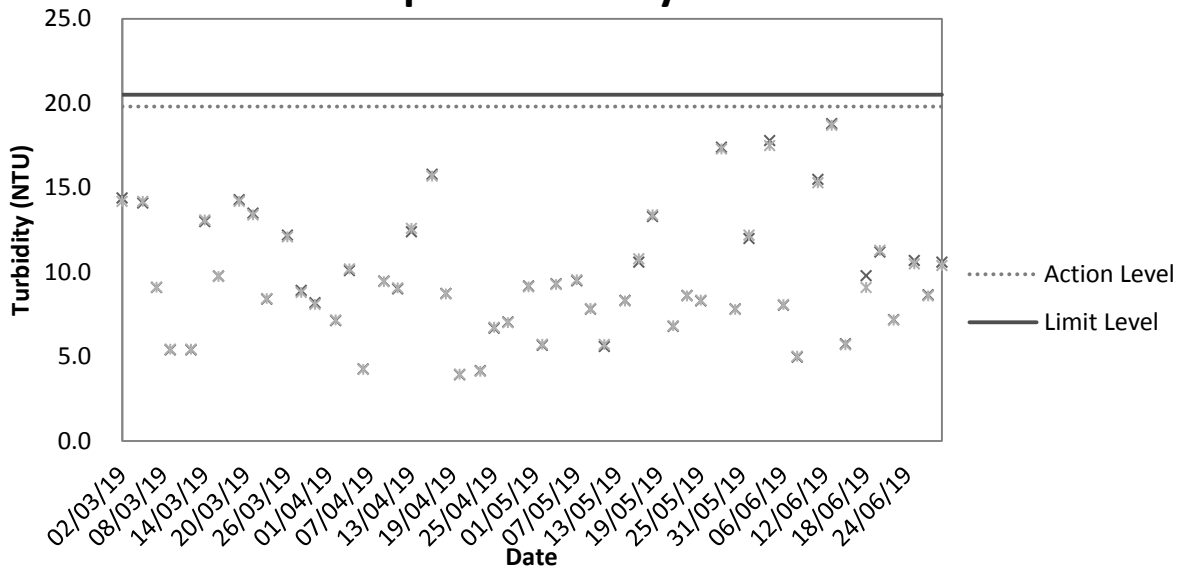
Remark(s):

- (#) 200ml sample was used for Suspended Solids analysis. Practical Quantitation Limit of Suspended Solids reported less than 5 mg/L. The results reported as <5 would be counted as zero for average measurement.

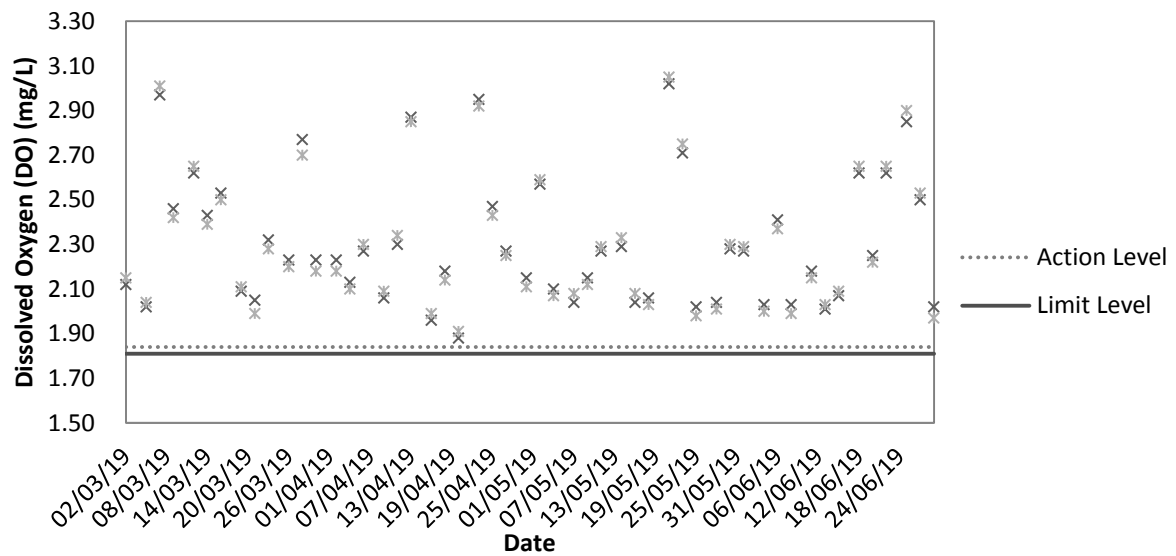
## **Appendix F3**

### **Graphical Plots of Impact Water Quality Monitoring Data**

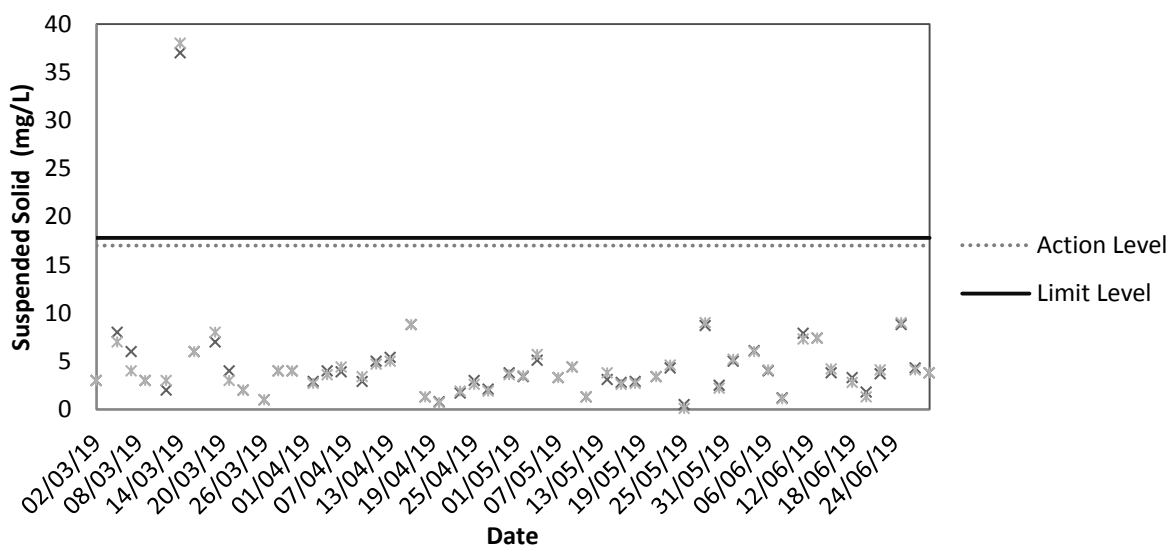
## Impact Turbidity Result



## Impact DO Result



## Impact Suspended Solid (SS) Result



## **Appendix G**

### **Weather Condition**

## Daily Extract of Meteorological Observations, June 2019

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)			
01	1007.5	30.6	27.2	24.9	24.7	87	32.6
02	1007.2	31.2	27.2	25.4	24.6	86	3.0
03	1007.3	30.2	27.5	25.3	24.7	85	34.1
04	1008.6	31.1	28.0	25.9	25.9	89	38.1
05	1009.5	32.6	29.4	27.4	25.9	82	0.0
06	1010.4	33.0	30.2	28.5	25.9	78	Trace
07	1010.4	33.2	30.1	28.6	25.5	77	0.0
08	1008.5	32.4	30.1	28.2	25.4	76	1.1
09	1005.4	32.3	30.1	28.4	26.0	79	4.1
10	1003.5	31.7	29.5	25.8	25.7	81	3.3
11	1004.4	29.4	27.5	24.6	25.9	91	111.6
12	1005.3	29.6	27.5	26.5	25.8	91	1.5
13	1003.0	30.7	27.7	25.5	25.6	88	55.8
14	1002.4	31.6	28.4	25.4	23.5	76	16.5
15	1005.3	31.4	28.6	26.4	23.4	74	Trace
16	1006.5	30.1	27.9	26.8	24.1	80	0.0
17	1007.3	28.7	27.6	26.8	25.3	88	4.7
18	1008.1	30.0	28.6	27.5	26.4	88	11.1
19	1007.8	31.7	28.9	26.5	26.4	87	14.0
20	1006.9	32.5	30.1	28.2	26.1	80	0.5
21	1005.9	32.8	30.8	29.5	26.3	77	0.7
22	1004.7	33.0	30.7	28.7	26.4	78	0.7
23	1004.8	32.2	30.3	29.1	26.4	80	3.2
24	1006.2	30.6	29.1	24.7	26.2	85	16.8
25	1006.7	29.7	27.2	24.8	25.1	89	35.4
26	1004.0	31.4	28.6	26.1	26.0	86	0.9
27	1001.7	32.5	30.2	28.3	26.9	83	3.5
28	1001.7	32.7	30.5	29.3	27.1	82	2.2
29	1001.6	33.3	31.0	29.5	26.8	79	0.6
30	1001.6	33.0	29.5	26.9	26.7	85	33.1
Mean/Total	1005.8	31.5	29.0	27.0	25.7	83	429.1
Normal <sup>§</sup>	1006.1	30.2	27.9	26.2	24.6	82	456.1

Remark(s):

1. Trace means rainfall less than 0.05 mm
2. § 1981-2010 Climatological Normal
3. The meteorological observations extracted from Hong Kong Observatory only shown the daily average and may be varied from the weather condition recorded during monitoring.

## **Appendix H**

### **Environmental Site Inspection Checklist**

**Environmental Site Inspection Checklist – San Wai**

**Inspection Date:** 06 June 2019 **Inspected By:** Ivy Lo  
**Time:** 14:30 **Weather Condition:** Sunny  
**Participants:** Patrick Lenny, Abby Sham, Jason Lenny

1	Permits/Licenses	N/A	Yes	No	Remarks
1.1	Are Environmental Permit, license/ other permit displayed at major site exit and vehicle access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.2	Are Construction Noise Permits available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.3	Is wastewater discharge license available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.4	Are trip tickets for chemical waste and construction waste disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.5	Are relevant license/permits for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2	Air Quality	N/A	Yes	No	Remarks
2.1	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.2	Are speed controlled at 10 km/h on unpaved site areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.3	Are plant and equipment well maintained (i.e. without black smoke from powered plant)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.4	Observed dust source(s): <input type="checkbox"/> Wind erosion <input type="checkbox"/> Vehicle/ Equipment Movements <input type="checkbox"/> Loading/ unloading of materials <input checked="" type="checkbox"/> Others: <u>Not observed</u>				
2.5	Are the work sites wetted with water twice a day?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.6	After removal of boulders, poles, pillars or temporary or permanent structures, are the entire surface sprayed with water or a dust suppression chemical immediately?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.7	Is the area involved demolished items covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.8	Are wheel washing facilities with high pressure water jet provided at all site exits if practicable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.9	Are the areas of washing facilities and the road section between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.10	Are hoarding $\geq 2.4\text{m}$ tall provided beside roads or area with public access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.11	Are main haul road paved with concrete, bituminous materials, hardcores or metal plates, and kept clear of dusty materials; or sprayed with water or a dust suppression chemical?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.12	Are construction site that is within 30m of a discernible or designated vehicle entrance or exit kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.13	Are all vehicles and plant cleaned before they leave the construction site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.14	Are loaded dump trucks covered by impervious sheeting appropriately	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	





	before leaving the site?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.15	Are working areas of any excavation or earth moving operation sprayed with water or a dusty suppression chemical immediately?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.16	Is exposed earth properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, concrete or other suitable surface stabilizer within 6 months after the last construction activity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.17	Are stockpile of dusty material covered entirely by impervious sheeting; placed in an area sheltered on the top and the 3 sides; or sprayed with water or dust suppression chemical?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.18	Are unpaved areas / designated roads watered regularly to avoid dust generation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.19	Are dusty materials covered entirely by impervious sheeting or sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.20	Is every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) covered entirely by impervious sheeting or placed in an area sheltered on the top and 3 sides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.21	Are the approval or exempted NRMM labels painted or securely fixed on site machines or vehicles and displayed at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

3	Noise	N/A	Yes	No	Remarks
3.1	Are idle plant/equipments turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.2	Are silenced equipments or quiet plants utilized?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.3	Are the silencers or mufflers properly fitted on construction equipments and maintained regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.4	Is temporary hoarding installed located on the site boundaries between noisy construction activities and NSRs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.5	Are noise barriers (typically density @14kg/m <sup>2</sup> ) acoustic mat or full enclosure close to noise plants including air compressor, generators and saw etc. provided to protect NSRs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.6	Do air compressors have valid noise labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.7	Are compressor operated with doors closed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.8	QPME used with valid noise labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.9	Are construction activities planned so that parallel operation of several sets of equipment close to a given receiver is avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Major noise source(s): <input type="checkbox"/> Traffic <input checked="" type="checkbox"/> Construction activities inside of site <input type="checkbox"/> Construction activities outside of site <input type="checkbox"/> Others:				

4	Water Quality	N/A	Yes	No	Remarks
	<u>Construction Activities</u>				
4.1	Before a rainstorm, are exposed stockpiles covered with tarpaulin or impervious sheets?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.2	Are stockpiles of materials placed in the locations away from the drainage channel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



4.3	Are site drainage systems and treatment facilities provided to minimize the water pollution?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.4	Is the treated effluent quality met the requirements specified in the discharge license?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.5	Is the sewage generated from toilets collected using a temporary storage system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.6	Are sewage effluent and discharges from on-site kitchen facilities directed to public foul sewers or collected in a temporary storage tank if connection to public foul sewers is not feasible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.7	Is a licensed waste collector employed to clean the chemical toilets and temporary storage tank on a regular basis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.8	Is the storm drainage directed to storm drains via adequately designed sand/ silt removal facilities e.g. sand traps, silt traps and sediment basins?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.9	Are measures taken to prevent the washout of construction materials, soil, silt or debris into any drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.10	Are manholes adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and prevent storm run-off getting into foul sewers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Is a wheel washing bay provided at every site exit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.12	Is the wheel wash overflow directed to silt removal facilities before being discharged to the storm drain?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.13	Is the section of construction road between the wheel washing bay and the public road surfaced with crushed stone or coarse gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.14	Does the surface runoff from bunded areas pass through oil/grease traps prior to discharge to the storm water system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are sedimentation tanks or package treatment systems provided to treat the large amount of sediment-laden wastewater generated from wheel washing, site runoff and construction works?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**5 Waste / Chemical Management**

N/A Yes No Remarks

**General Waste**

5.1	Are sufficient waste disposal points provided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.2	Is waste disposed regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.3	Is the general waste generated on-site stored in enclosed bins or compaction units separately from the construction and chemical wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.4	Are separated labeled containers/ areas provided for facilitating recycling and waste segregation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**Construction Waste**

5.5	Are the temporary stockpiles maintained regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.6	Are the C&D materials sorted and recycled on-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.7	Are the public fill and C&D waste segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.8	Is the segregation and storage of C&D wastes undertaken in designated area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



5.9	Are waste storage area properly cleaned and do not cause windblown litter and dust nuisance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.10	Are surplus insert C&D materials only consist of earth, building debris and broken rock and concrete and free from marine mud, household refuse, plastic, metals, industrial and chemical waste, animal and vegetable matter, and other material considered unsuitable by the public filling supervisor?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Chemical / Fuel Storage Area</u></b>					
5.11	Are the fuel tanks and chemical storage areas provided with locks and sited on sealed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.12	Are the storage areas labeled and separated (if needed)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.13	Do the storage areas have adequate ventilation and be covered to prevent rainfall entering?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.14	Are the containers used for the storage of chemical wastes suitable for the substance that are holding, resist to corrosion, maintained in a good condition, and securely closed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.15	Are proper measures to control oil spillage during maintenance or to control other chemicals spillage? (e.g. provide drip trays)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Chemical Waste / Waste Oil</u></b>					
5.16	Is chemical waste or waste oil stored and labeled in English and Chinese properly in designated area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.17	Are chemicals and waste oil collected and stored for recycling or proper disposal?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Records</u></b>					
5.18	Is a licensed waste hauler used for waste collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.19	Are the records of quantities of wastes generated, recycled and disposed properly kept?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.20	For the demolition material/ waste, is the number of loads for each day recorded as appropriate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>6</b>	<b>Landscape and Visual Impacts</b>	N/A	Yes	No	Remarks
6.1	Is the work site confined within site boundaries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.2	Is damage to surrounding areas avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>7</b>	<b>Environmental Complaint</b>	N/A	Yes	No	Remarks
7.1	Number of Environmental Complaint received from dd/mm/yyyy to dd/mm/yyyy?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>8</b>	<b>General Housekeeping</b>	N/A	Yes	No	Remarks
8.1	Are potential stagnant pools cleared and mosquito breeding prevented?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Item 1
8.2	Are the defined boundaries of working areas identified to prevent loss of vegetation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>9</b>	<b>Others</b>	N/A	Yes	No	Remarks
9.1	Are the portable toilets maintained in a state, which will not deter the workers from utilizing these portable toilets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**Follow up actions for pervious Site Audit:**

Follow-up action to items on 31/5/2018,  
all items are improved.

**Observations**

- i. Stagnant water was observed at UV

**Corrective Actions – Mitigation Measures Implemented or Proposed (if any):**

The contractor should clear the stagnant water properly.

**Signature:**

**ET's representative**



Name: Ivy Lo

Date: 6/6/2018

**Signature:**

**Contractor's representative**



Name: Roly

Date: 6/6/2019

**Signature:**

**ET Leader**



Name: C. L. Lau

Date: 08/06/2018

**Signature:**

**SO's representative**



Name: C. F. Wong

Date: 6/6/2018

### Summary of the Weekly Environmental Site Inspection

Item	Details of observations	Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Proposed Follow up Date
--	 <p>Follow up action to Item 1 on 31/05/2019, a temporarily cover was provided to cover the drainage at P1.</p>	--	190606_001	No	--

--	 <p>Follow up action to Item 2 on 31/05/2019, fill material was covered at the Northern side of UV.</p>	--	190606_002	No	--
1	 <p>Stagnant water was accumulated at UV.</p>	To clear the stagnant water properly	190606_003	Yes	14/06/2019

**Environmental Site Inspection Checklist – San Wai**

**Inspection Date:** 14 June 2019 **Inspected By:** Ivy Lo  
**Time:** 09:30 **Weather Condition:** Fine  
**Participants:** Patrick Leung, Johnny So, Abby Sham, Jason Leung

1	Permits/Licenses	N/A	Yes	No	Remarks
1.1	Are Environmental Permit, license/ other permit displayed at major site exit and vehicle access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.2	Are Construction Noise Permits available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.3	Is wastewater discharge license available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.4	Are trip tickets for chemical waste and construction waste disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.5	Are relevant license/permits for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2	Air Quality	N/A	Yes	No	Remarks
2.1	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.2	Are speed controlled at 10 km/h on unpaved site areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.3	Are plant and equipment well maintained (i.e. without black smoke from powered plant)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.4	Observed dust source(s): <input type="checkbox"/> Wind erosion <input type="checkbox"/> Vehicle/ Equipment Movements <input type="checkbox"/> Loading/ unloading of materials <input checked="" type="checkbox"/> Others: <u>Not observed</u>				
2.5	Are the work sites wetted with water twice a day?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.6	After removal of boulders, poles, pillars or temporary or permanent structures, are the entire surface sprayed with water or a dust suppression chemical immediately?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.7	Is the area involved demolished items covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.8	Are wheel washing facilities with high pressure water jet provided at all site exits if practicable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.9	Are the areas of washing facilities and the road section between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.10	Are hoarding $\geq$ 2.4m tall provided beside roads or area with public access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.11	Are main haul road paved with concrete, bituminous materials, hardcores or metal plates, and kept clear of dusty materials; or sprayed with water or a dust suppression chemical?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.12	Are construction site that is within 30m of a discernible or designated vehicle entrance or exit kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.13	Are all vehicles and plant cleaned before they leave the construction site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.14	Are loaded dump trucks covered by impervious sheeting appropriately	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



	before leaving the site?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.15	Are working areas of any excavation or earth moving operation sprayed with water or a dusty suppression chemical immediately?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.16	Is exposed earth properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, concrete or other suitable surface stabilizer within 6 months after the last construction activity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.17	Are stockpile of dusty material covered entirely by impervious sheeting; placed in an area sheltered on the top and the 3 sides; or sprayed with water or dust suppression chemical?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.18	Are unpaved areas / designated roads watered regularly to avoid dust generation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.19	Are dusty materials covered entirely by impervious sheeting or sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.20	Is every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) covered entirely by impervious sheeting or placed in an area sheltered on the top and 3 sides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.21	Are the approval or exempted NRMM labels painted or securely fixed on site machines or vehicles and displayed at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>3</b>	<b>Noise</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
3.1	Are idle plant/equipments turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.2	Are silenced equipments or quiet plants utilized?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.3	Are the silencers or mufflers properly fitted on construction equipments and maintained regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.4	Is temporary hoarding installed located on the site boundaries between noisy construction activities and NSRs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.5	Are noise barriers (typically density @14kg/m <sup>2</sup> ) acoustic mat or full enclosure close to noise plants including air compressor, generators and saw etc. provided to protect NSRs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.6	Do air compressors have valid noise labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.7	Are compressor operated with doors closed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.8	QPME used with valid noise labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.9	Are construction activities planned so that parallel operation of several sets of equipment close to a given receiver is avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Major noise source(s): <input type="checkbox"/> Traffic <input checked="" type="checkbox"/> Construction activities inside of site <input type="checkbox"/> Construction activities outside of site <input type="checkbox"/> Others:				
<b>4</b>	<b>Water Quality</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
	<b><u>Construction Activities</u></b>				
4.1	Before a rainstorm, are exposed stockpiles covered with tarpaulin or impervious sheets?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.2	Are stockpiles of materials placed in the locations away from the drainage channel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	





4.3	Are site drainage systems and treatment facilities provided to minimize the water pollution?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.4	Is the treated effluent quality met the requirements specified in the discharge license?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.5	Is the sewage generated from toilets collected using a temporary storage system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.6	Are sewage effluent and discharges from on-site kitchen facilities directed to public foul sewers or collected in a temporary storage tank if connection to public foul sewers is not feasible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.7	Is a licensed waste collector employed to clean the chemical toilets and temporary storage tank on a regular basis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.8	Is the storm drainage directed to storm drains via adequately designed sand/ silt removal facilities e.g. sand traps, silt traps and sediment basins?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.9	Are measures taken to prevent the washout of construction materials, soil, silt or debris into any drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.10	Are manholes adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and prevent storm run-off getting into foul sewers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Is a wheel washing bay provided at every site exit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.12	Is the wheel wash overflow directed to silt removal facilities before being discharged to the storm drain?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.13	Is the section of construction road between the wheel washing bay and the public road surfaced with crushed stone or coarse gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.14	Does the surface runoff from bunded areas pass through oil/grease traps prior to discharge to the storm water system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.15	Are sedimentation tanks or package treatment systems provided to treat the large amount of sediment-laden wastewater generated from wheel washing, site runoff and construction works?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>5</b>	<b>Waste / Chemical Management</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
	<b><u>General Waste</u></b>				
5.1	Are sufficient waste disposal points provided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.2	Is waste disposed regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.3	Is the general waste generated on-site stored in enclosed bins or compaction units separately from the construction and chemical wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.4	Are separated labeled containers/ areas provided for facilitating recycling and waste segregation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	<b><u>Construction Waste</u></b>				
5.5	Are the temporary stockpiles maintained regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.6	Are the C&D materials sorted and recycled on-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.7	Are the public fill and C&D waste segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.8	Is the segregation and storage of C&D wastes undertaken in designated area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



5.9	Are waste storage area properly cleaned and do not cause windblown litter and dust nuisance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.10	Are surplus inert C&D materials only consist of earth, building debris and broken rock and concrete and free from marine mud, household refuse, plastic, metals, industrial and chemical waste, animal and vegetable matter, and other material considered unsuitable by the public filling supervisor?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Chemical / Fuel Storage Area</u></b>					
5.11	Are the fuel tanks and chemical storage areas provided with locks and sited on sealed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.12	Are the storage areas labeled and separated (if needed)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.13	Do the storage areas have adequate ventilation and be covered to prevent rainfall entering?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.14	Are the containers used for the storage of chemical wastes suitable for the substance that are holding, resist to corrosion, maintained in a good condition, and securely closed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.15	Are proper measures to control oil spillage during maintenance or to control other chemicals spillage? (e.g. provide drip trays)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Chemical Waste / Waste Oil</u></b>					
5.16	Is chemical waste or waste oil stored and labeled in English and Chinese properly in designated area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.17	Are chemicals and waste oil collected and stored for recycling or proper disposal?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Records</u></b>					
5.18	Is a licensed waste hauler used for waste collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.19	Are the records of quantities of wastes generated, recycled and disposed properly kept?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.20	For the demolition material/ waste, is the number of loads for each day recorded as appropriate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>6</b>	<b>Landscape and Visual Impacts</b>	N/A	Yes	No	Remarks
6.1	Is the work site confined within site boundaries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.2	Is damage to surrounding areas avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>7</b>	<b>Environmental Complaint</b>	N/A	Yes	No	Remarks
7.1	Number of Environmental Complaint received from dd/mm/yyyy to dd/mm/yyyy?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>8</b>	<b>General Housekeeping</b>	N/A	Yes	No	Remarks
8.1	Are potential stagnant pools cleared and mosquito breeding prevented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8.2	Are the defined boundaries of working areas identified to prevent loss of vegetation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>9</b>	<b>Others</b>	N/A	Yes	No	Remarks
9.1	Are the portable toilets maintained in a state, which will not deter the workers from utilizing these portable toilets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



**Follow up actions for pervious Site Audit:**

Follow-up action to item on 6/6/2019,  
all item was improved.

**Observations**

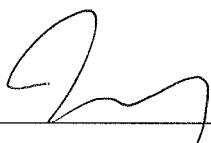
/

**Corrective Actions – Mitigation Measures Implemented or Proposed (if any):**

/

**Signature:**

**ET's representative**



Name: Ivy Lo

Date: 14/6/2019

**Signature:**

**Contractor's representative**



Name: Abby

Date: 14/6/2019

**Signature:**

**ET Leader**



Name: C. L. Lau

Date: 15/06/2019

**Signature:**

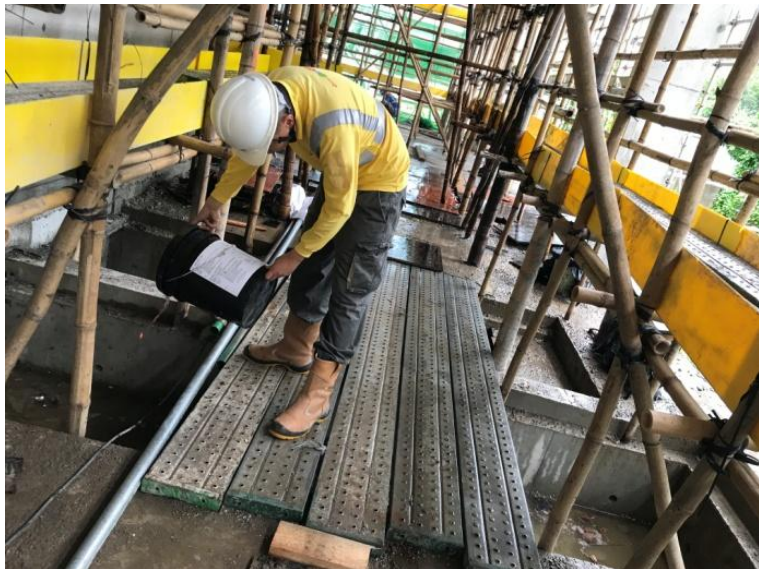
**SO's representative**



Name: C. F. L. L. L.

Date: 14/6/2019

### Summary of the Weekly Environmental Site Inspection

Item	Details of observations	Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Proposed Follow up Date
--	 <p>Follow up action to Item 1 on 14/06/2019, larvicide was added for the stagnant water.</p>	--	190614_001	No	--



### Environmental Site Inspection Checklist – San Wai

Inspection Date:

21.6.19

Inspected By:

Frankie Tang

Time:

9:30

Weather Condition:

Fine

Participants:

Patrick Leung

Abby Sham

Jashan Leung

Johnny So

1	Permits/Licenses	N/A	Yes	No	Remarks
1.1	Are Environmental Permit, license/ other permit displayed at major site exit and vehicle access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.2	Are Construction Noise Permits available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.3	Is wastewater discharge license available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.4	Are trip tickets for chemical waste and construction waste disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.5	Are relevant license/permits for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2	Air Quality	N/A	Yes	No	Remarks
2.1	Is open burning avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.2	Are speed controlled at 10 km/h on unpaved site areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.3	Are plant and equipment well maintained (i.e. without black smoke from powered plant)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.4	Observed dust source(s): <input type="checkbox"/> Wind erosion <input type="checkbox"/> Vehicle/ Equipment Movements <input type="checkbox"/> Loading/ unloading of materials <input checked="" type="checkbox"/> Others: <i>Not observed</i>				
2.5	Are the work sites wetted with water twice a day?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.6	After removal of boulders, poles, pillars or temporary or permanent structures, are the entire surface sprayed with water or a dust suppression chemical immediately?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.7	Is the area involved demolished items covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.8	Are wheel washing facilities with high pressure water jet provided at all site exits if practicable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.9	Are the areas of washing facilities and the road section between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.10	Are hoarding $\geq 2.4\text{m}$ tall provided beside roads or area with public access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.11	Are main haul road paved with concrete, bituminous materials, hardcores or metal plates, and kept clear of dusty materials; or sprayed with water or a dust suppression chemical?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.12	Are construction site that is within 30m of a discernible or designated vehicle entrance or exit kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.13	Are all vehicles and plant cleaned before they leave the construction site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.14	Are loaded dump trucks covered by impervious sheeting appropriately	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



	before leaving the site?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.15	Are working areas of any excavation or earth moving operation sprayed with water or a dusty suppression chemical immediately?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.16	Is exposed earth properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, concrete or other suitable surface stabilizer within 6 months after the last construction activity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.17	Are stockpile of dusty material covered entirely by impervious sheeting; placed in an area sheltered on the top and the 3 sides; or sprayed with water or dust suppression chemical?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.18	Are unpaved areas / designated roads watered regularly to avoid dust generation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.19	Are dusty materials covered entirely by impervious sheeting or sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.20	Is every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) covered entirely by impervious sheeting or placed in an area sheltered on the top and 3 sides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.21	Are the approval or exempted NRMM labels painted or securely fixed on site machines or vehicles and displayed at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

3	Noise	N/A	Yes	No	Remarks
3.1	Are idle plant/equipments turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.2	Are silenced equipments or quiet plants utilized?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.3	Are the silencers or mufflers properly fitted on construction equipments and maintained regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.4	Is temporary hoarding installed located on the site boundaries between noisy construction activities and NSRs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.5	Are noise barriers (typically density @14kg/m <sup>2</sup> ) acoustic mat or full enclosure close to noise plants including air compressor, generators and saw etc. provided to protect NSRs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.6	Do air compressors have valid noise labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.7	Are compressor operated with doors closed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.8	QPME used with valid noise labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.9	Are construction activities planned so that parallel operation of several sets of equipment close to a given receiver is avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Major noise source(s): <input type="checkbox"/> Traffic <input checked="" type="checkbox"/> Construction activities inside of site <input type="checkbox"/> Construction activities outside of site <input type="checkbox"/> Others:				

4	Water Quality	N/A	Yes	No	Remarks
	<u>Construction Activities</u>				
4.1	Before a rainstorm, are exposed stockpiles covered with tarpaulin or impervious sheets?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.2	Are stockpiles of materials placed in the locations away from the drainage channel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



4.3	Are site drainage systems and treatment facilities provided to minimize the water pollution?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.4	Is the treated effluent quality met the requirements specified in the discharge license?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.5	Is the sewage generated from toilets collected using a temporary storage system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.6	Are sewage effluent and discharges from on-site kitchen facilities directed to public foul sewers or collected in a temporary storage tank if connection to public foul sewers is not feasible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.7	Is a licensed waste collector employed to clean the chemical toilets and temporary storage tank on a regular basis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.8	Is the storm drainage directed to storm drains via adequately designed sand/ silt removal facilities e.g. sand traps, silt traps and sediment basins?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.9	Are measures taken to prevent the washout of construction materials, soil, silt or debris into any drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.10	Are manholes adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and prevent storm run-off getting into foul sewers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Is a wheel washing bay provided at every site exit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.12	Is the wheel wash overflow directed to silt removal facilities before being discharged to the storm drain?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.13	Is the section of construction road between the wheel washing bay and the public road surfaced with crushed stone or coarse gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.14	Does the surface runoff from bunded areas pass through oil/grease traps prior to discharge to the storm water system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are sedimentation tanks or package treatment systems provided to treat the large amount of sediment-laden wastewater generated from wheel washing, site runoff and construction works?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5	<b>Waste / Chemical Management</b>	N/A	Yes	No	Remarks
	<u>General Waste</u>				
5.1	Are sufficient waste disposal points provided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.2	Is waste disposed regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.3	Is the general waste generated on-site stored in enclosed bins or compaction units separately from the construction and chemical wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.4	Are separated labeled containers/ areas provided for facilitating recycling and waste segregation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	<u>Construction Waste</u>				
5.5	Are the temporary stockpiles maintained regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.6	Are the C&D materials sorted and recycled on-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.7	Are the public fill and C&D waste segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.8	Is the segregation and storage of C&D wastes undertaken in designated area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

5.9	Are waste storage area properly cleaned and do not cause windblown litter and dust nuisance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.10	Are surplus inert C&D materials only consist of earth, building debris and broken rock and concrete and free from marine mud, household refuse, plastic, metals, industrial and chemical waste, animal and vegetable matter, and other material considered unsuitable by the public filling supervisor?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Chemical / Fuel Storage Area</u></b>					
5.11	Are the fuel tanks and chemical storage areas provided with locks and sited on sealed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.12	Are the storage areas labeled and separated (if needed)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.13	Do the storage areas have adequate ventilation and be covered to prevent rainfall entering?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.14	Are the containers used for the storage of chemical wastes suitable for the substance that are holding, resist to corrosion, maintained in a good condition, and securely closed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.15	Are proper measures to control oil spillage during maintenance or to control other chemicals spillage? (e.g. provide drip trays)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Chemical Waste / Waste Oil</u></b>					
5.16	Is chemical waste or waste oil stored and labeled in English and Chinese properly in designated area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.17	Are chemicals and waste oil collected and stored for recycling or proper disposal?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Records</u></b>					
5.18	Is a licensed waste hauler used for waste collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.19	Are the records of quantities of wastes generated, recycled and disposed properly kept?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.20	For the demolition material/ waste, is the number of loads for each day recorded as appropriate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>6</b>	<b>Landscape and Visual Impacts</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
6.1	Is the work site confined within site boundaries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.2	Is damage to surrounding areas avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>7</b>	<b>Environmental Complaint</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
7.1	Number of Environmental Complaint received from dd/mm/yyyy to dd/mm/yyyy?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>8</b>	<b>General Housekeeping</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
8.1	Are potential stagnant pools cleared and mosquito breeding prevented?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>There is</i>
8.2	Are the defined boundaries of working areas identified to prevent loss of vegetation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>9</b>	<b>Others</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
9.1	Are the portable toilets maintained in a state, which will not deter the workers from utilizing these portable toilets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	






Follow up actions for pervious Site Audit: N/A

Observations <sup>Item 1:</sup> Stagnant water was observed at the drip tray near DO1 work area


Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

To clean the stagnant water properly.


Signature:  
ET's representative

  
Name: Frankie Tang  
Date: 21-6-19

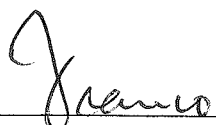
Signature:  
Contractor's representative

  
Name: Abby  
Date: 21/6/2019


Signature:  
ET Leader

  
Name: C.H. Lau  
Date: 22/06/2019

Signature:  
SO's representative

  
Name: C7 LEONG  
Date: 21/6/2019

### Summary of the Weekly Environmental Site Inspection

Item	Details of observations	Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Proposed Follow up Date
1	 <p>Stagnant water was observed at the drip tray near DO1 work area.</p>	To clear the stagnant water properly	190621_001	Yes	21/06/2019


**Environmental Site Inspection Checklist – San Wai**

Inspection Date: 28.6.19 Inspected By: Frankie Tung  
 Time: 14:00 Weather Condition: Fine  
 Participants: Patrick Leung, Abby Sham, Jackson Leung

1	Permits/Licenses	N/A	Yes	No	Remarks
1.1	Are Environmental Permit, license/ other permit displayed at major site exit and vehicle access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.2	Are Construction Noise Permits available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.3	Is wastewater discharge license available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.4	Are trip tickets for chemical waste and construction waste disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.5	Are relevant license/permits for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

2	Air Quality	N/A	Yes	No	Remarks
2.1	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.2	Are speed controlled at 10 km/h on unpaved site areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.3	Are plant and equipment well maintained (i.e. without black smoke from powered plant)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.4	Observed dust source(s): <input type="checkbox"/> Wind erosion <input type="checkbox"/> Vehicle/ Equipment Movements <input type="checkbox"/> Loading/ unloading of materials <input checked="" type="checkbox"/> Others: <u>Not observed</u>				
2.5	Are the work sites wetted with water twice a day?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.6	After removal of boulders, poles, pillars or temporary or permanent structures, are the entire surface sprayed with water or a dust suppression chemical immediately?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.7	Is the area involved demolished items covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.8	Are wheel washing facilities with high pressure water jet provided at all site exits if practicable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.9	Are the areas of washing facilities and the road section between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.10	Are hoarding $\geq 2.4\text{m}$ tall provided beside roads or area with public access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.11	Are main haul road paved with concrete, bituminous materials, hardcores or metal plates, and kept clear of dusty materials; or sprayed with water or a dust suppression chemical?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.12	Are construction site that is within 30m of a discernible or designated vehicle entrance or exit kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.13	Are all vehicles and plant cleaned before they leave the construction site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.14	Are loaded dump trucks covered by impervious sheeting appropriately	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



	before leaving the site?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.15	Are working areas of any excavation or earth moving operation sprayed with water or a dusty suppression chemical immediately?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.16	Is exposed earth properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, concrete or other suitable surface stabilizer within 6 months after the last construction activity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.17	Are stockpile of dusty material covered entirely by impervious sheeting; placed in an area sheltered on the top and the 3 sides; or sprayed with water or dust suppression chemical?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.18	Are unpaved areas / designated roads watered regularly to avoid dust generation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.19	Are dusty materials covered entirely by impervious sheeting or sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.20	Is every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) covered entirely by impervious sheeting or placed in an area sheltered on the top and 3 sides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.21	Are the approval or exempted NRMM labels painted or securely fixed on site machines or vehicles and displayed at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

3	Noise	N/A	Yes	No	Remarks
3.1	Are idle plant/equipments turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.2	Are silenced equipments or quiet plants utilized?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.3	Are the silencers or mufflers properly fitted on construction equipments and maintained regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.4	Is temporary hoarding installed located on the site boundaries between noisy construction activities and NSRs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.5	Are noise barriers (typically density @14kg/m <sup>2</sup> ) acoustic mat or full enclosure close to noise plants including air compressor, generators and saw etc. provided to protect NSRs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.6	Do air compressors have valid noise labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.7	Are compressor operated with doors closed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.8	QPME used with valid noise labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.9	Are construction activities planned so that parallel operation of several sets of equipment close to a given receiver is avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Major noise source(s): <input type="checkbox"/> Traffic <input checked="" type="checkbox"/> Construction activities inside of site <input type="checkbox"/> Construction activities outside of site <input type="checkbox"/> Others:				

4	Water Quality	N/A	Yes	No	Remarks
	<u>Construction Activities</u>				
4.1	Before a rainstorm, are exposed stockpiles covered with tarpaulin or impervious sheets?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.2	Are stockpiles of materials placed in the locations away from the drainage channel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



4.3	Are site drainage systems and treatment facilities provided to minimize the water pollution?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.4	Is the treated effluent quality met the requirements specified in the discharge license?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.5	Is the sewage generated from toilets collected using a temporary storage system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.6	Are sewage effluent and discharges from on-site kitchen facilities directed to public foul sewers or collected in a temporary storage tank if connection to public foul sewers is not feasible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.7	Is a licensed waste collector employed to clean the chemical toilets and temporary storage tank on a regular basis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.8	Is the storm drainage directed to storm drains via adequately designed sand/ silt removal facilities e.g. sand traps, silt traps and sediment basins?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.9	Are measures taken to prevent the washout of construction materials, soil, silt or debris into any drainage system?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	item 1
4.10	Are manholes adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and prevent storm run-off getting into foul sewers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Is a wheel washing bay provided at every site exit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.12	Is the wheel wash overflow directed to silt removal facilities before being discharged to the storm drain?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.13	Is the section of construction road between the wheel washing bay and the public road surfaced with crushed stone or coarse gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.14	Does the surface runoff from bunded areas pass through oil/grease traps prior to discharge to the storm water system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are sedimentation tanks or package treatment systems provided to treat the large amount of sediment-laden wastewater generated from wheel washing, site runoff and construction works?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5	<b>Waste / Chemical Management</b>	N/A	Yes	No	Remarks
	<u>General Waste</u>				
5.1	Are sufficient waste disposal points provided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.2	Is waste disposed regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.3	Is the general waste generated on-site stored in enclosed bins or compaction units separately from the construction and chemical wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.4	Are separated labeled containers/ areas provided for facilitating recycling and waste segregation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	<u>Construction Waste</u>				
5.5	Are the temporary stockpiles maintained regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.6	Are the C&D materials sorted and recycled on-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.7	Are the public fill and C&D waste segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.8	Is the segregation and storage of C&D wastes undertaken in designated area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



5.9	Are waste storage area properly cleaned and do not cause windblown litter and dust nuisance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.10	Are surplus inert C&D materials only consist of earth, building debris and broken rock and concrete and free from marine mud, household refuse, plastic, metals, industrial and chemical waste, animal and vegetable matter, and other material considered unsuitable by the public filling supervisor?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Chemical / Fuel Storage Area</u></b>					
5.11	Are the fuel tanks and chemical storage areas provided with locks and sited on sealed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.12	Are the storage areas labeled and separated (if needed)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.13	Do the storage areas have adequate ventilation and be covered to prevent rainfall entering?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.14	Are the containers used for the storage of chemical wastes suitable for the substance that are holding, resist to corrosion, maintained in a good condition, and securely closed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.15	Are proper measures to control oil spillage during maintenance or to control other chemicals spillage? (e.g. provide drip trays)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Chemical Waste / Waste Oil</u></b>					
5.16	Is chemical waste or waste oil stored and labeled in English and Chinese properly in designated area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.17	Are chemicals and waste oil collected and stored for recycling or proper disposal?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b><u>Records</u></b>					
5.18	Is a licensed waste hauler used for waste collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.19	Are the records of quantities of wastes generated, recycled and disposed properly kept?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.20	For the demolition material/ waste, is the number of loads for each day recorded as appropriate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>6</b>	<b>Landscape and Visual Impacts</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
6.1	Is the work site confined within site boundaries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6.2	Is damage to surrounding areas avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>7</b>	<b>Environmental Complaint</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
7.1	Number of Environmental Complaint received from dd/mm/yyyy to dd/mm/yyyy?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>8</b>	<b>General Housekeeping</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
8.1	Are potential stagnant pools cleared and mosquito breeding prevented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8.2	Are the defined boundaries of working areas identified to prevent loss of vegetation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>9</b>	<b>Others</b>	<b>N/A</b>	<b>Yes</b>	<b>No</b>	<b>Remarks</b>
9.1	Are the portable toilets maintained in a state, which will not deter the workers from utilizing these portable toilets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



Follow up actions for pervious Site Audit: Follow up action to item on 21.6.19, all item was improved.

Observations Item 1: Stagnant water was observed near SDB North almost over flow into drainage system.

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Item 2: Provide sandbag to prevent stagnant water overflow into drainage system.

Signature:  
ET's representative

Name: Frankie Tang  
Date: 28.6.19

Signature:  
Contractor's representative

Name: ~~28/6~~ Andy  
Date: 28/6/2019


Signature:  
ET Leader

Name: C.L. Lam  
Date: 28.6.19


Signature:  
SO's representative

Name: CF L20N67  
Date: 28/6/2019

### Summary of the Weekly Environmental Site Inspection

Item	Details of observations	Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Proposed Follow up Date
--	 <p>Follow up action to Item 1 on 21/06/2019, stagnant water was cleared.</p>	--	190628_001	No	--



1	 <p>Stagnant water was observed near SDB</p>	To block the route from flowing into the drainage system	190628_002	Yes	05/07/2019
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## **Appendix I**

### **Landscape and Visual Impact Assessment Checklist**

## Landscape and Visual Impact Assessment Checklist for Site Audit

Inspection Date: 14 June 2019 Weather: Sunny/Fine/ Cloudy / Rainy  
Time: 15:30 p.m. Wind: Strong/ Breeze/ Light/ -Calm

Item	Description	YES	NO	N/A	Actions/ Remarks
<b>1</b>	<b>Construction Phase</b>				
1.1	Is the detailed tree survey completed prior to construction work?	✓			
1.2	Are trees to be transplanted removed to their final positions?		✓		
1.3	Are the transplants and existing trees to be retained properly protected from damage by stout hoarding positioned as directed by a qualified Landscape Architect?	✓			Eastern side trees: Protective fence has been provided at lot.  A few nos. of trees are protected near the site entrance
1.4	Is regular inspection of the retained and transplanted trees made to ensure the effectiveness of the hoarding?	✓			
1.5	Are the TPZ clearly demarcated on site and surrounded by strong fences sturdy enough to withstand impacts from the construction activities?	✓			Except trees far beyond the extent of construction activities, protective fence is noted.
1.6	Are warning signs and notices installed at the fences denoting the “tree protection zone” to prohibit the entry of equipment or construction activities?	✓			
1.7	Are tree labels with clear indication of tree no. and status (e.g. “R”, “T” or “F”) provided for all the trees on site?	✓			
1.8	If protective fencings are not practicable, are the tree root systems adequately protected from soil compaction due to passage of vehicles, equipment or machinery?	✓			
1.9	Are vehicular/foot paths and storage areas designated away from TPZ?	✓			
1.10	Are the trees properly irrigated and sprayed with water to remove the accumulated construction dust during dry season in order to lessen			✓	

	the chances of decline and to maintain the vigour of trees?				
1.11	Are the trees free from any sign of distress, such as dieback, leaf loss, or general decline in tree health or appearance or tree damage with symptoms of construction injury?			✓	Trees in eastern boundary: 1) Dead branches to remove 2) Tear bark/ stubs to be properly pruned.
1.12	Are the trees free from wire or nail and prohibited to be used as anchor for any site activities?	✓			
1.13	Are cutting, trenching, excavating or raising of soil level within the TPZ prohibited?	✓			
1.14	Is improper pruning of the tree branches/roots prohibited?	✓			
1.15	Are the trees free from any tree root damage?	✓			
1.16	Are construction works or operation of machines within the TPZ prohibited?	✓			
1.17	Is the TPZ free from pollution from effluent water, machine petroleum or chemical spillage?	✓			
1.18	Is the excavated topsoil stored and protected on site for reuse for restoration of screen planting works?			✓	The site has previously been reclaimed from ponds. Most of the excavated topsoil is not desirable for reuse due to its inferior quality. Contractor's submitted referencing documents are attached in the checklist dated 4 May, 2018 for information.
1.19	Is the progress of the above activities reported in the monthly EM&A report?	✓			
<b>2</b>	<b>Operational Phase (12 months period from commissioning of the expanded and upgraded works)</b>				
2.1	Is a planting reserve, where locates around the site perimeter of approximately 5m wide, provided to allow a continuous belt of trees to be planted as a visual screen?			✓	
2.2	Is the planting reserve complemented the boundary			✓	



	planting to the existing San Wai STW?				
2.3	Is all new planting maintained for 12 months to ensure proper establishment?			✓	
2.4	Are the trees free from sign of deterioration of tree health and/or structure?			✓	
2.5	Are the trees free from insect pests and disease pathogens?			✓	
2.6	Are the irrigation systems functioning properly and well maintained?			✓	
2.7	Are the tree root systems adequately protected from soil compaction due to storage of materials or operation of machinery?			✓	

**Summary/ Remarks:**

**Follow up actions taken by Contractor for previous comments:**

1. Trees at eastern boundary – pruning of dead branches has carried out. Contractor is reminded to carry out proper reduction cut to some of the branches in future to meet the current tree care standard.

**The contractor was reminded to rectify the following:**

1. Generally, contractor was reminded to keep on the tree protection and maintenance.

**New Observation:**

1. Grade change and construction activities are noted on site. Contractor was reminded not to disturb the TPZ.

**Reminders:**

1. Contractor was reminded to provide TPZ with robust fence, whenever possible, at the drip line of all retained trees unless the trees are well beyond the extend of construction activities.
2. Contractor was reminded not to disturb trees outside site along the boundary.
3. Death branch is found on T11 (Leucaena leucocephala). The condition of the tree is found to be in poor condition. Contractor was reminded to keep on monitoring T11 which is in poor vigour. Tree may need to be replaced upon no other possible remedies.

**Photo Record:**



Figure 1	Figure 2
	
General condition of the existing trees at eastern boundary	General condition of the south-west corner of the site. Former trees are removed.



Figure 3



Condition of trees at the entrance of the existing treatment plant

Figure 4



All the existing trees near the eastern entrance are removed

Figure 5






Existing trees at the site entrance protected by the hoarding fence

Figure 6




Existing trees at the site entrance protected by the hoarding fence



Figure 7	Figure 8
	
Protective fence is removed.	Death branch is found on T11. Contractor is required to have follow-up and keep on monitoring. Replacement may be needed.
Figure 9	
	
Poor vigour condition of tree T11	



**Signature:**

		Signature	Date
Inspected & Recorded by	Registered Landscape Architect		
		Xylem Leung	

## Landscape and Visual Impact Assessment Checklist for Site Audit

Inspection Date: 28 June 2019 Weather: Sunny/ Fine/ Cloudy/ Rainy  
Time: 15:30 p.m. Wind: Strong/ Breeze/ Light/ Calm

Item	Description	YES	NO	N/A	Actions/ Remarks
<b>1</b>	<b>Construction Phase</b>				
1.1	Is the detailed tree survey completed prior to construction work?	✓			
1.2	Are trees to be transplanted removed to their final positions?		✓		
1.3	Are the transplants and existing trees to be retained properly protected from damage by stout hoarding positioned as directed by a qualified Landscape Architect?	✓			Eastern side trees: Protective fence has been provided at lot.  A few nos. of trees are protected near the site entrance
1.4	Is regular inspection of the retained and transplanted trees made to ensure the effectiveness of the hoarding?	✓			
1.5	Are the TPZ clearly demarcated on site and surrounded by strong fences sturdy enough to withstand impacts from the construction activities?	✓			Except trees far beyond the extent of construction activities, protective fence is noted.
1.6	Are warning signs and notices installed at the fences denoting the “tree protection zone” to prohibit the entry of equipment or construction activities?	✓			
1.7	Are tree labels with clear indication of tree no. and status (e.g. “R”, “T” or “F”) provided for all the trees on site?	✓			
1.8	If protective fencings are not practicable, are the tree root systems adequately protected from soil compaction due to passage of vehicles, equipment or machinery?	✓			
1.9	Are vehicular/foot paths and storage areas designated away from TPZ?	✓			
1.10	Are the trees properly irrigated and sprayed with water to remove the accumulated construction dust during dry season in order to lessen the chances of decline and to			✓	

	maintain the vigour of trees?				
1.11	Are the trees free from any sign of distress, such as dieback, leaf loss, or general decline in tree health or appearance or tree damage with symptoms of construction injury?			✓	Trees in eastern boundary: 1) Dead branches to remove 2) Tear bark/ stubs to be properly pruned.
1.12	Are the trees free from wire or nail and prohibited to be used as anchor for any site activities?	✓			
1.13	Are cutting, trenching, excavating or raising of soil level within the TPZ prohibited?	✓			
1.14	Is improper pruning of the tree branches/roots prohibited?	✓			
1.15	Are the trees free from any tree root damage?	✓			
1.16	Are construction works or operation of machines within the TPZ prohibited?	✓			
1.17	Is the TPZ free from pollution from effluent water, machine petroleum or chemical spillage?	✓			
1.18	Is the excavated topsoil stored and protected on site for reuse for restoration of screen planting works?			✓	The site has previously been reclaimed from ponds. Most of the excavated topsoil is not desirable for reuse due to its inferior quality. Contractor's submitted referencing documents are attached in the checklist dated 4 May, 2018 for information.
1.19	Is the progress of the above activities reported in the monthly EM&A report?	✓			
<b>2</b>	<b>Operational Phase (12 months period from commissioning of the expanded and upgraded works)</b>				
2.1	Is a planting reserve, where locates around the site perimeter of approximately 5m wide, provided to allow a continuous belt of trees to be planted as a visual screen?			✓	
2.2	Is the planting reserve complemented the boundary planting to the existing San Wai			✓	

	STW?				
2.3	Is all new planting maintained for 12 months to ensure proper establishment?			✓	
2.4	Are the trees free from sign of deterioration of tree health and/or structure?			✓	
2.5	Are the trees free from insect pests and disease pathogens?			✓	
2.6	Are the irrigation systems functioning properly and well maintained?			✓	
2.7	Are the tree root systems adequately protected from soil compaction due to storage of materials or operation of machinery?			✓	

### Summary/ Remarks:

#### Follow up actions taken by Contractor for previous comments:

1. Trees at eastern boundary – pruning of dead branches has carried out. Contractor is reminded to carry out proper reduction cut to some of the branches in future to meet the current tree care standard.

#### The contractor was reminded to rectify the following:

1. Generally, contractor was reminded to keep on the tree protection and maintenance.

#### New Observation:

1. Grade change and construction activities are noted on site. Contractor was reminded not to disturb the TPZ.

#### Reminders:

1. Contractor was reminded to provide TPZ with robust fence, whenever possible, at the drip line of all retained trees unless the trees are well beyond the extend of construction activities.
2. Contractor was reminded not to disturb trees outside site along the boundary.
3. Death branch is found on T11 (Leucaena leucocephala). The condition of the tree is found to be in poor condition. Contractor was reminded to keep on monitoring T11 which is in poor vigour. Tree may need to be replaced upon no other possible remedies.

#### Photo Record:






Figure 1	Figure 2
	
General condition of the existing trees at eastern boundary	General condition of the south-west corner of the site. Former trees are removed.

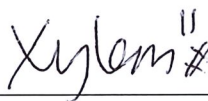


Figure 3	Figure 4
	
Condition of trees at the entrance of the existing treatment plant	All the existing trees near the eastern entrance are removed
Figure 5	Figure 6
	
Existing trees at the site entrance protected by the hoarding fence	Existing trees at the site entrance protected by the hoarding fence



Figure 7	Figure 8
	
<p>Protective fence is removed.</p>	<p>Death branch is found on T11. Contractor is required to have follow-up and keep on monitoring. Replacement may be needed.</p>
Figure 9	
	
<p>Poor vigour condition of tree T11</p>	

**Signature:**

		Signature	Date
Inspected & Recorded by	Registered Landscape Architect		
		Xylem Leung	



## **Appendix J**

### **Waste Flow Table**

DSD Contract: DC/2013/10  
Design, Build and Operate  
San Wai Sewage Treatment Works Phase 1




ATAL-Degremont-China Harbour Joint Venture

Name of Department: DSD

Year: 2019

Project: Design, Build and Operate San Wai Sewage Treatment Works - Phase 1

Contract No.: DC/2013/10

## Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Broken Concrete (see Note <sup>3</sup> )	Reused in the Contract (see Note)	Reused in other Projects	Disposed as Public Fill (see Note <sup>4</sup> )	Imported Fill (see Note <sup>4</sup> )	Metals	Paper/ cardboard packaging	Plastics (see Note <sup>2</sup> )	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)
Jan	0.988	0.000	0.000	0.000	0.988	0.449	0.000	0.000	0.000	0.000	55.820
Feb	0.632	0.000	0.000	0.000	0.632	0.637	0.000	0.300	0.000	0.000	87.830
Mar	0.750	0.000	0.000	0.000	0.750	0.182	0.000	0.000	0.000	0.000	103.440
Apr	0.625	0.000	0.000	0.000	0.625	0.024	0.000	0.200	0.000	0.000	129.800
May	0.442	0.000	0.206	0.000	0.442	0.032	0.000	0.000	0.000	0.000	186.750
Jun	2.408	0.000	0.000	0.000	2.408	1.217	0.000	0.000	0.000	0.000	125.740
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	5.845	0.000	0.206	0.000	5.845	2.541	0.000	0.500	0.000	0.000	689.380

- Notes:
- (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
  - (2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
  - (3) Broken concrete for recycling into aggregates.
  - (4) Assumption: The densities of subbase, Type A, Type B, Rockfill, Soil, Mix Rock and Soil, Reclaimed Asphalt Pave, Slurry are 2.0 ton/m<sup>3</sup>; the densities of Building debris and special fill materials are 2.1 ton/m<sup>3</sup>; the densities of Broken Concrete is 2.4 ton/m<sup>3</sup>.

## **Appendix K**

### **Environmental Licenses and Permits**

Item No.	Nature of Permit / License / Notification	Permit / License/ Notification No.	Date of Issue / Effective of Permit / License	Date of Expiry of Permit / License	Remark (Validity for reporting period only)
1	Environmental Permit	EP-464/2013	18/10/2013	NA	Valid
2	Billing Account for Disposal of Construction Waste	7025330	07/07/2016	NA	Valid
3	Form NA notification (for APCO)	405489	26/07/2016	25/09/2020	Valid
4	Chemical Waste Producer Registration (for Site)	5218-511-A2823-01	23/01/2017	NA	Valid
5	Wastewater Discharge Licence (for WPCO)	WT00026754-2017	28/04/2017	31/01/2022	Valid
6	Construction Noise Permit (for Site)	GW-RN0698-19	13/12/2018	12/06/2019	Superseded by GW-RN0698-19 on and after 13/06/2019
7	Construction Noise Permit (for Site)	GW-RN0364-19	13/06/2019	12/08/2019	Valid

## **Appendix L**

### **Implementation Schedule for Environmental Mitigation Measures (EMIS)**

Environmental Mitigation Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
<ul style="list-style-type: none"><li>The working area for the uprooting of trees, shrubs, or vegetation or for the removal of boulders, poles, pillars or temporary or permanent structures should be sprayed with water or a dust suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet;</li></ul>	Site Area	√			
<ul style="list-style-type: none"><li>All demolished items (including trees, shrubs, vegetation, boulders, poles, pillars, structures, debris, rubbish and other items arising from site clearance) that may dislodge dust particles should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition;</li></ul>	Site Area	√			
<ul style="list-style-type: none"><li>Vehicle washing facilities including a high pressure water jet should be provided at every discernible or designated vehicle exit point;</li></ul>	Site Entrance	√			
<ul style="list-style-type: none"><li>The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</li></ul>	Site Exit	√			
<ul style="list-style-type: none"><li>Where a site boundary adjoins a road, street, service and or other area accessible to the public, hoarding of not less than 2.4m from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit;</li></ul>	Site Area	√			
<ul style="list-style-type: none"><li>Every main haul road (i.e. any course inside a construction site having a vehicle passing rate of higher than 4 in any 30 minutes) should be paved with concrete, bituminous materials, hardcores or metal plates, and kept clear of dusty materials; or sprayed with water or a dust suppression chemical so as to maintain the entire road surface wet;</li></ul>	Main Haul Road	√			
<ul style="list-style-type: none"><li>The portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit should be kept clear of dusty materials;</li></ul>	Site Entrance and Exit	√			
<ul style="list-style-type: none"><li>Immediately before leaving a construction site, every vehicle should be washed to remove any dusty materials from its body and wheels;</li></ul>	Site Exit	√			
<ul style="list-style-type: none"><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>	--	√			
<ul style="list-style-type: none"><li>The working area of any excavation or earth moving operation should be sprayed with water or a dusty suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet;</li></ul>	Site Area	√			
<ul style="list-style-type: none"><li>Exposed earth shall be properly treated by compaction, turving, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable</li></ul>	Site Area	√			

surface stabilizer within 6 months after the last construction activity on the construction site or part of the construction site where the exposed earth lies;					
• Any stockpile of dusty material should be either covered entirely by impervious sheeting; placed in an area sheltered on the top and the 3 sides; or sprayed with water or a dust suppression chemical so as to maintain the entire surface wet.	Site Area	√			
<b>Noise</b>					
• Quiet plants should be used in order to reduce the noise impacts to protect the nearby NSRs.	Site Area	√			
• Temporary and Movable Noise Barriers should be used in order to reduce the noise impact to the surrounding sensitive receivers	Site Area	√			
• Intermittent noisy activities should be scheduled to minimize exposure of nearby NSRs to high levels of construction noise.	Site Area	√			
• Idle equipment should be turned off or throttled down.	Site Area	√			
• Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided	Site Area	√			
• Construction plant should be properly maintained and operated.	Site Area	√			
<b>Water Quality</b>					
• Exposed stockpiles should be covered with tarpaulin or impervious sheets before a rainstorm occurs;	Site Area	√			
• The exposed soil surfaces should also be properly protected to minimize dust emission;	Site Area	√			
• The stockpiles of materials should be placed in the locations away from the drainage channel so as to avoid releasing materials into the channel;	Site Area	√			
• Wheel washing facilities should be provided at site exits to ensure that earth, mud and debris would not be carried out of the works areas by vehicles;	Site Exit	√			
• Provision of site drainage systems and treatment facilities would be required to minimize the water pollution;	Site Area	√			
• A discharge license needs to be applied from EPD for discharging effluent from the construction site;	--	√			
• The treated effluent quality is required to meet the requirements specified in the discharge license;	--	√			
• Provision of chemical toilets is required to collect sewage from workforce. The chemical toilets should be cleaned on a regular basis;	Chemical Toilet	√			

• A licensed waste collector should be employed to clean the chemical toilets and temporary storage tank on a regular basis;	--	√			
• Illegal disposal of chemicals should be strictly prohibited;	Site Area	√			
• Registration as a chemical waste producer is required if chemical wastes are generated and need to be disposed of. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes;	Site Area	√			
• Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance should be used as a guideline for handling chemical wastes;	Site Area	√			
• The impact from accidental spillage of chemicals can be effectively controlled through good management practices.	Site Area	√			
<b>Waste Management</b>					
• Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Site Area	√			
• To encourage collection of aluminium cans by individual collectors, separate bins should be provided to segregate this waste from other general refuse generated by the workforce;	Site Area	√			
• Any unused chemicals or those with remaining functional capacity should be recycled;	Site Area	√			
• Prior to disposal of C&D waste, it is recommended that wood, steel and other metals be separated for re-use and/or recycling and inert waste as fill material to minimize the quantity of waste to be disposed of to landfill;	Site Area	√			
• Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and	Site Area		√		
• Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.	Site Area	√			
<b>Landscape and Visual</b>					
• Detailed tree survey should have been completed	Site Area	√			
• Trees should be transplanted to their final positions clear of the construction site	--			√	
• Erect site hoarding to protect adjacent vegetation from damage	Site Area	√			



<ul style="list-style-type: none"> <li>Regular inspections of the transplanted trees should be made to ensure the effectiveness of the hoarding</li> </ul>	Site Area	√			
<ul style="list-style-type: none"> <li>Any topsoil excavated during the course of the works should be stored and protected on site for reuse for the restoration and screen planting works</li> </ul>	Site Area			√	

## **Appendix M**

### **Environmental Site Inspection Schedule**

**Contract No. DC/2013/10 -  
Design, Build and Operate San Wai Sewage Treatment Works – Stage 1  
Schedule for Environmental Monitoring and Site Inspection  
June 2019**

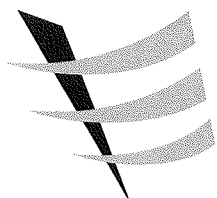
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
					SI	WQM
2	3	4 24hr-TSP 1hr-TSP x 3 NM  Effluent Sampling  WQM	5	6  WQM  SI	7	8  WQM
9	10 24hr-TSP 1hr-TSP x 3 NM	11  WQM	12	13  WQM	14  SI	15 24hr-TSP 1hr-TSP x 3 NM  WQM
16	17	18  Effluent Sampling  WQM	19	20  WQM	21 24hr-TSP 1hr-TSP x 3 NM  SI	22  WQM
23	24	25  WQM	26	27 24hr-TSP 1hr-TSP x 3 NM  WQM	28  SI	29  WQM
30						

**Contract No. DC/2013/10 -**  
**Design, Build and Operate San Wai Sewage Treatment Works – Stage 1**  
**Schedule for Environmental Monitoring and Site Inspection**  
**July 2019**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2  Effluent Sampling  WQM	3  24hr-TSP 1hr-TSP x 3 NM	4  WQM	5  SI	6  WQM
7	8	9  24hr-TSP 1hr-TSP x 3 NM  WQM	10	11  WQM	12  SI	13  WQM
14	15  24hr-TSP 1hr-TSP x 3 NM	16  Effluent Sampling  WQM	17	18  WQM	19  SI	20  24hr-TSP 1hr-TSP x 3 NM  WQM
21	22	23  WQM	24	25  WQM	26  24hr-TSP 1hr-TSP x 3 NM  SI	27  WQM
28	29	30  Effluent Sampling  WQM	31			

## **Appendix N**

### **Laboratory Report for Discharge Water**



# 東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.™

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## TEST REPORT

### Testing of Water and Wastewater

Report No. : ENA94445  
Date of Issue : 12 June 2019  
Page No. : 1 of 1

#### Information Provided by Customer

Customer Name : ATAL-Degremont-China Harbour Joint Venture  
Customer Address : 19/F, China Harbour Building, 370-374 King's Road, North Point, Hong Kong  
Sample Source : Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works - Stage 1  
Sample Type : Wastewater  
Date of Sampling : 04 June 2019  
Sample Description : Sample was stored in 1L plastic bottle (for pH and Total Suspended Solids).  
Sample was stored in 500ml plastic bottle (for Chemical Oxygen Demand).  
Sample for Chemical Oxygen Demand was preserved by adding conc. H<sub>2</sub>SO<sub>4</sub> to pH <2.  
Sample was collected by the customer and refrigerated after received.

#### Laboratory Information

Date of Received : 04 June 2019  
Date of Testing Period : 04 to 05 June 2019  
Lab Ref. No. : W44117

#### Result

Sample ID	Sample No.	Test	Method Used	Result	Unit
P1a	01	pH	In house method TPE/003/W	8.5	(at 25°C)
		Total Suspended Solids	In house method TPE/006/W	<5*	mg/L
	02	Chemical Oxygen Demand	In house method TPE/002/W	<10	mgO <sub>2</sub> /L

#### Remark(s):

- The results relate only to the tested sample as received.
- \*200ml sample was used for Total Suspended Solids analysis. PQL of Total Suspended Solids reported less than 5 mg/L.

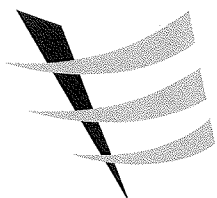
Approved Signatory :

LAU, Chi Leung

TPE/001/W

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- END OF REPORT -



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## TEST REPORT

### Testing of Water and Wastewater

Report No. : ENA95160  
Date of Issue : 27 June 2019  
Page No. : 1 of 1

#### Information Provided by Customer

Customer Name : ATAL-Degremont-China Harbour Joint Venture  
Customer Address : 19/F, China Harbour Building, 370-374 King's Road, North Point, Hong Kong  
Sample Source : Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works - Stage 1  
Sample Type : Wastewater  
Date of Sampling : 18 June 2019  
Sample Description : Sample was stored in 1L plastic bottle (for pH and Total Suspended Solids).  
Sample was stored in 500ml plastic bottle (for Chemical Oxygen Demand).  
Sample for Chemical Oxygen Demand was preserved by adding conc. H<sub>2</sub>SO<sub>4</sub> to pH <2.  
Sample was collected by the customer and refrigerated after received.

#### Laboratory Information

Date of Received : 18 June 2019  
Date of Testing Period : 18 to 19 June 2019  
Lab Ref. No. : W44221

#### Result

Sample ID	Sample No.	Test	Method Used	Result	Unit
P1a	01	pH	In house method TPE/003/W	8.4	(at 25°C)
		Total Suspended Solids	In house method TPE/006/W	<5*	mg/L
	02	Chemical Oxygen Demand	In house method TPE/002/W	<10	mgO <sub>2</sub> /L

#### Remark(s):

- The results relate only to the tested sample as received.
- \*200ml sample was used for Total Suspended Solids analysis. PQL of Total Suspended Solids reported less than 5 mg/L.

Approved Signatory :

LAU, Chi Leung

TPE/001/W

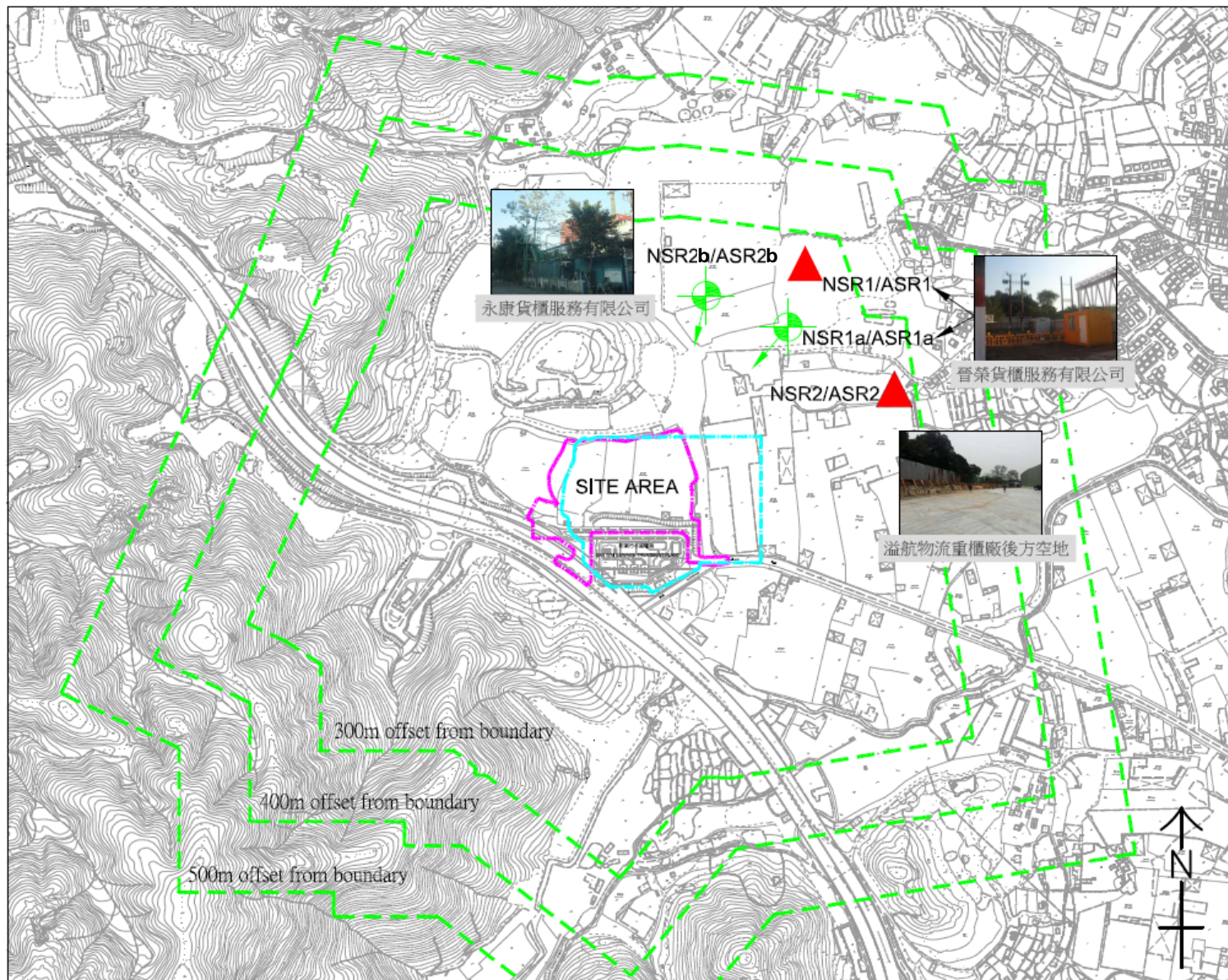
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- END OF REPORT -

## **Figure 1**

### **Locations of Air Quality and Noise Monitoring Stations**





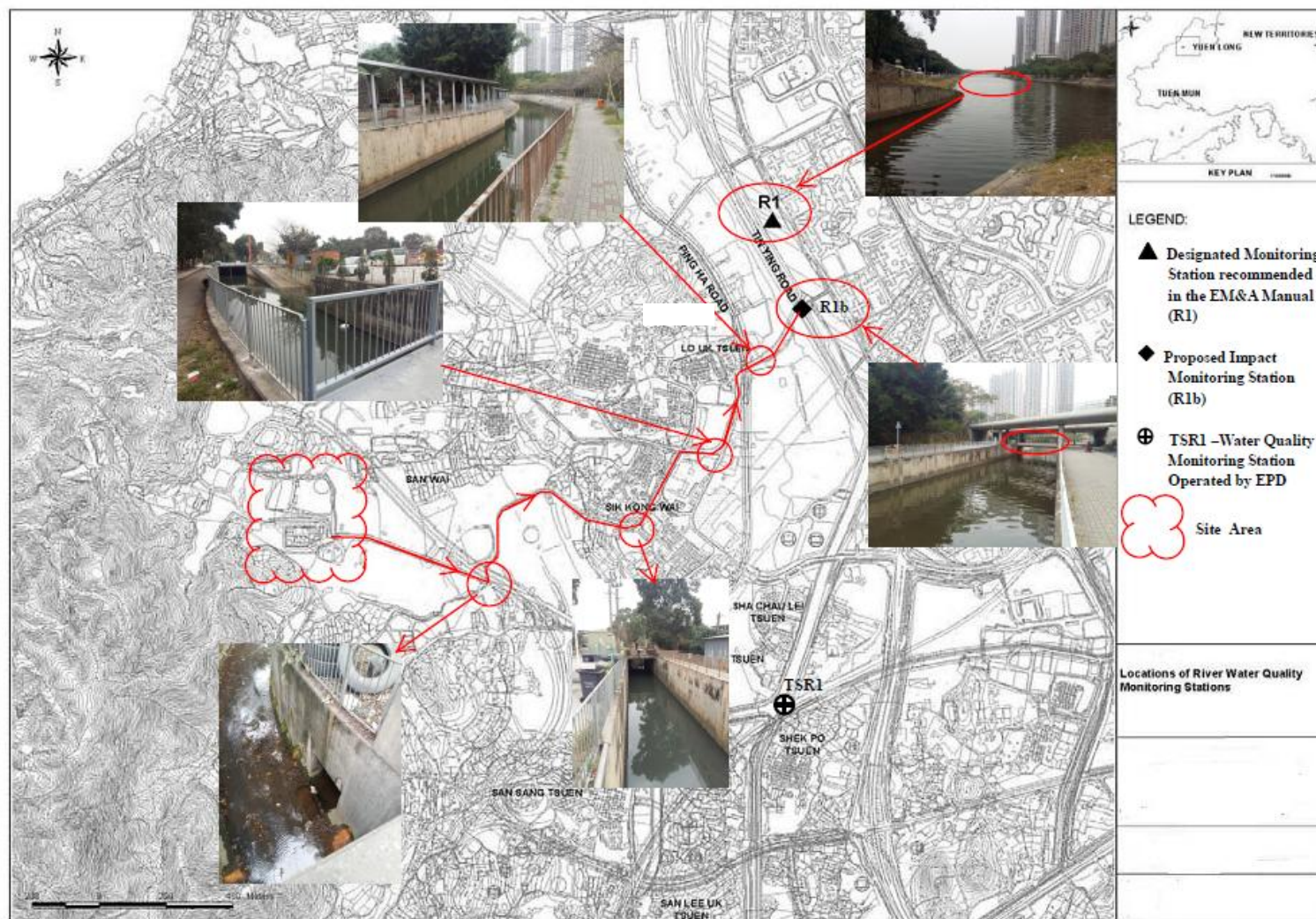
Project: Contract No. DC/2013/10 -Design, Build and Operate San Wai Sewage Treatment Works – Phase 1

Figure 1 Locations of Air Quality and Noise Monitoring Stations

**Figure 2**

**Locations of Water Quality Monitoring Station**

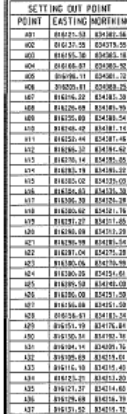




**Project: Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works – Phase 1**  
**Figure 2 Locations of Water Quality Monitoring Station**

### **Figure 3**

#### **Location Plan for the Wetsep Treatment Tank**



Legend:

**Project: Contract No. DC/2013/10 - Design, Build and Operate San Wai Sewage Treatment Works – Phase 1**

**Figure 3 Location Plan for the Wetsep Treatment Tank**