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Sang Hing Civil Contractors Co Ltd

CONTRACT NO. CV/2016/04
TEMPORARY CONSTRUCTION WASTE SORTING FACILITIES, 2017-2018

AT TSEUNG KWAN O AREA 137

MONTHLY EM&A REPORT NO.26

(FEBRUARY 2019)

Prepared by: _____
TANG, Chung Hang
Environmental Officer

Checked by: _____
LAU, Chi Leung
Environmental Team Leader

Issue Date: 01 March 2019

Report No.: ENA91443

RAMBOLL

Ref.: CEDPFRSFEM02_0_0566L.19

19 March 2019

By Email and Fax No.: 2695 3944

ETS-Testconsult Limited
8/F, Block B, Veristrong Industrial Centre
34-36 Au Pui Wan Street
Fo Tan, Hong Kong

Attention: Mr. C L Lau

Dear Mr. Lau,

Re: Contract No. CV/2016/04
Temporary Construction Waste Sorting Facilities, 2017 – 2018

Monthly EM&A Report (No. 26) for February 2019 for the CWSF at Tseung Kwan O Area 137

Reference is made to your submission of the draft Monthly EM&A Report for February 2019 for the CWSF at TKO Area 137 by email on 13 March 2019 and the subsequent revision on 18 March 2019.

We are pleased to inform you that we have no further comment on the captioned report.

Thank you for your attention. Please do not hesitate to contact our Jason Lai or the undersigned should you have any queries.

Yours sincerely,
For and on behalf of
Ramboll Hong Kong Limited

F. C. Tsang
Independent Environmental Checker

c.c.	CEDD	Attn: Mr. P C Leung	Fax No.: 2714 0113
	Sang Hing	Attn: Mr. Kenny Chan	Fax No.: 2403 1162

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Ramboll Hong Kong Limited 英環香港有限公司
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EXECUTIVE SUMMARY

This monthly Environmental Monitoring and Audit (EM&A) report No.26 was prepared by ETS-Testconsult Ltd (ET) for the "Contract No: CV/2016/04 – Temporary Construction Waste Sorting Facilities (CWSF), 2017-2018, at Tseung Kwan O (TKO) Area 137" (The Project).

This report documented the findings of EM&A Works conducted during the operation phase of TKO CWSF in February 2019

Site Activities

As informed by the Contractor, the site activities in this reporting month were as below:

- *Operation of CWSF's;*
- *Maintenance of CWSFs ;*
- *Disposal of sorted waste at designated landfills and public fill reception facilities*
- *Replacement of Combined Reception Exit Office (CREO) at TKO CWSF*

Environmental Monitoring Progress

The summary of the monitoring activities in this monitoring month is listed below:

- *24-hour TSP Monitoring: 5 Occasions at 1 designated location*
- *1-hour TSP 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.

Weekly Site Inspection

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

Environmental Complaints, Notification of summons and successful prosecutions

No complaint, notification of summons or successful prosecutions with respect to environmental issues was received in this reporting month.

Future Key Issues

Based on the site inspections and forecast of engineering works in the coming month, key issues to be considered are as follows:

- *Air quality impact due to site works;*
- *Maintain all drainage and desilting facilities properly;*
- *Remove the stagnant water or provide pesticide for the stagnant water in the permanent desilting chambers, if any;*
- *Sufficient drip trays for all oil drums / chemical containers;*
- *Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste;*
- *Maintain good site practice and waste management to minimize environmental impacts at the site; and*
- *Follow-up improvements on waste management issues.*

1.0 INTRODUCTION

Sang Hing Civil Contractors Co Ltd (Sang Hing) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) works for the "Contract No: CV/2016/04 – Temporary Construction Waste Sorting Facilities (CWSF), 2017-2018, at Tseung Kwan O (TKO) Area 137" (The Project).

The latest Environmental Permit (No.: EP-134/2002/M) was granted to the Project on 17 December 2018. The scale and scope of this project as stated in the EP include:

- Site clearance;
- Construction of a temporary storm water system;
- Stockpiling of 6 million m^3 of public fill;
- Setting up two barging points: one at the TKO Basin and one at the Construction and Demolition Material Sorting Facility (C&DMSF) for transporting the stockpiled public fill by barges;
- Setting up a temporary barging point at the existing Explosives Off-loading Barging Point located in the south-eastern part of TKO Area 137 for the month of May 2004 to December 2004 for transporting the stockpiled public fill by barge;
- Construction and operation of a C&DMSF;
- Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin; and
- Remove the temporary fill bank.

Under the EP, construction and operation of the construction and demolition material sorting facility is within the scope. Therefore, the said activities in the temporary CWSF in TKO Area 137 are under the governance of the EP.

According to the updated EM&A Manual for "Contract CV/2004/13 – Temporary Construction Waste Sorting Facilities at Tseung Kwan O Area 137 and Tuen Mun Area 38" (the EM&A Manual), air quality monitoring (1-hr and 24-hr TSP) and site inspections are necessary to carry out until the completion of the contract month of the Project. The EM&A programme, or any part of it., will be terminated upon approval from the ER, IEC and EPD.

In accordance with the Section 25.40(1) of the Particular Specification of the Project, the baseline conditions as well as action and limit levels of the Project was established based on the baseline data collected by Fill Bank at TKO Area 137 from October 2004 to December 2004.

This report presents a summary of the environmental monitoring and inspection works carried out by the ET for the temporary CWSF at TKO Area 137 in February 2019.

2.0 PROJECT INFORMATION

2.1 Site Description

TKO CWSF is located at TKO Area 137 which is located at the southern end of Wan Po Road. Sang Hing shall comply with all control measures in accordance with the PS for providing the service within the TKO CWSF (Portion A, AA, B1, B2, B3 and B4 of the affected property).

2.2 Work Programme

Details of work programme are shown in Appendix E.

2.3 Project Organization and Management Structure

The organization chart is shown in Appendix A.

2.4 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	*Name of Key Staff*	*Project Role*	*Tel. No.*	*Fax No.*
CEDD	*Mr. P C Leung*	*Engineer's Representative*	*2762 5514*	*2714 0113*
IEC (Ramboll)	*F C Tsang*	*IEC*	*3465 2888*	*3465 2899*
Contractor (Sang Hing)	*Mr. Edwin Au*	*Contractors Manager*	*2403 1118*	*2403 1162*
ET (ETL)	*Mr C. L. Lau*	*ET Leader*	*2946 7791*	*2695 3944*

3.0 WORK PROGRESS IN THIS REPORTING MONTH

As informed by the Contractor, the activities in the reporting month include:

- *Operation of CWSF's;*
- *Maintenance of CWSFs ;*
- *Disposal of sorted waste at designated landfills and public fill reception facilities*
- *Replacement of Combined Reception Exit Office (CREO) at TKO CWSF*

4.0 AIR QUALITY MONITORING

4.1 Monitoring Requirement

TSP levels were monitored in the reporting month in accordance with the EM&A Manual. Table 4.4 shows the Action and Limit Levels for the environmental monitoring works.

4.2 Monitoring Equipment

Table 4.1 summarizes the equipment used in the air quality monitoring programme. A copy of the calibration certificates for the HVS and calibrator are attached in Appendix B1.

Table 4.1 Air Quality Monitoring Equipment

Parameter	*Model and Make*
1-hr TSP and 24-hr TSP	*Greasby GMWS-2310 High Volume Air Sampling System*
HVS Calibration	*Tisch Environmental TE-5025A High Volume Air Sampler Calibrator*

4.3 Monitoring Parameters, Frequency and Duration

Table 4.2 summarizes the monitoring parameters, monitoring duration and frequencies of air quality monitoring.

Table 4.2 Monitoring parameters, duration, frequency of air quality monitoring

Parameter	*Duration*	*Frequency*
24-hr TSP	*24 hr*	*Once every six days*
1-hr TSP	*1 hr*	*Three times per day every six days*

4.4 Monitoring Locations

The location for the air quality monitoring station TKO2 is provided in Table 4.3 and depicted in Figure 1.

Table 4.3 Air quality monitoring location

Monitoring station	*Location*
TKO2	*Combined Reception & Exit Office in Area B1*

4.5 Monitoring Methodology

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).

Air was drawn through HVS fitted with a pre-conditioned and pre-weighted filter paper at a controlled rate. After sampling for 1 hour / 24 hours, the filter paper with retained particles was collected and returned to the laboratory for drying in a desiccators followed by accurate weighting. The laboratory was HOKLAS accredited or other internationally accredited laboratory. 1-hr TSP and 24-hr TSP levels were then calculated from the ratio of the mass of particulates retained on the filter paper to the total volume of air sampled. The balance was regularly calibrated against a certified standard.

Relevant data including temperature, pressure, weather condition and elapsed-time before the start and after the stop of the monitoring, identification and weight of the filter paper, and work activities of the site during the monitoring were also recorded.

Installation

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

Operation/Analytical Procedures

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

- Prior to the commencement of dust sampling, the following specification of HVS should be used:
  - 0.6m^3/min - 1.7m^3/min.) (20-60 SCFM) adjustable flow range;
  - equipped with a timing/control device with +/- 5 minutes accuracy for 24-hours operation;
  - installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
  - capable of providing a minimum exposed area of 406cm2 (63in^2);
  - flow control accuracy : +/- 2.5% deviation over 24-hr sampling period;
  - equipped with a shelter to protect the filter and sampler;
  - incorporated with an electronic mass flow rate controller or other equivalent devices;
  - equipped with a flow recorder for continuous monitoring;
  - provided with a peaked roof inlet;
  - incorporated with a manometer;
  - able to hold and seal the filter paper to the sampler housing at horizontal position;
  - Easy to change the filter;
  - capable of operation continuously for 24-hr period.
- 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 start and end time, elapsed-time meter reading for the start and stop. Initial flow rate, final flow rate, average flow rate, total volume, 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 a desiccator for 24 hour with the temperature of 25^{o}C $\pm$ 3^{o}C and the relative humidity (RH) <50% $\pm$5%.

- All measurement procedures in Section 2.3 of the EM&A Manual were followed during the reporting month.

Maintenance & Calibration

- 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.
- Both HVS should be calibrated at bi-monthly intervals.

Wind Data Monitoring

Wind data (wind speed and wind direction) were directly extracted from Tseung Kwan O Station of Hong Kong Observatory. All wind data during this reporting month are shown in Appendix C.

4.6 Action and Limit Levels

Table 4.4 shows the Action and Limit levels for 24-hr TSP and 1-hr TSP monitoring.

Table 4.4 Action and Limit Levels for 24-hr TSP and 1-hr TSP

Monitoring Location	*24-hr TSP ($\mu g/m^3$)*		*1-hr TSP ($\mu g/m^3$)*	
	Action Level	*Limit Level*	*Action Level*	*Limit Level*
TKO2	*260*	*260*	*383*	*500*

4.7 Event-Action Plans

Please refer to Appendix D for details.

4.8 Results

Monitoring data of both 1-hr TSP and 24-hr TSP monitoring carried out in this reporting month are summarized in Appendix B2. Graphical presentation of 1-hr TSP and 24-hr TSP monitoring results for the reporting month is shown in Appendix B3. Wind data included wind speed and wind direction was extracted from Tseung Kwan O Station of Hong Kong Observatory during this reporting month and is presented in Appendix C.

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

Besides the construction activities inside the Project site, other potential dust sources included the dump truck traffic, dumping and manual sorting of inert waste inside the Fill Bank of TKO Area 137.

5.0 ENVIRONMENTAL AUDIT

Weekly ET Site Inspections

Weekly site inspections were carried out by ET to monitor the timely implementation of proper environmental pollution control and mitigation measures for the Project. In this reporting month, four weekly site inspections were conducted (04, 11, 18 and 25 February 2019). The details of weekly site inspections are summarized in Table 5.1.

Table 5.1 Key Findings of Weekly ET Site Audits in this reporting month

Date	*Key Findings*	*Action(s) Taken recommended by ET*	*Action(s) Taken by the Contractor*	*Rectification Status by ET*
04 February 2019	*No defective work or observation was recorded during the weekly ET site inspection.*			
11 February 2019	*No defective work or observation was recorded during the weekly ET site inspection.*			
18 February 2019	*No defective work or observation was recorded during the weekly ET site inspection.*			
25 February 2019	*No defective work or observation was recorded during the weekly ET site inspection.*			

6.0 Review of Environmental Monitoring Procedures

The monitoring works conducted by the ET were inspected regularly. The observations for the monitoring works were recorded and summarised as follows:

- The monitoring team recorded the observations around the monitoring stations within and outside of the construction site.
- The monitoring team recorded the temperature, air pressure and general weather condition on the monitoring day.

7.0 Assessment of Environmental Monitoring Results

All monitoring results were audited against the A/L levels and any exceedances would be validated.

The monitoring results in this reporting month were comparable with the established action and limit levels.

8.0 Advice on the Solid and Liquid Waste Management Status

As advised by the Contractor, there were disposal of sorted inert and non-inert waste in the reporting month. The actual amounts of different types of waste generated by the activities of the Project in the month are shown in Table 8.1.

Table 8.1 Actual Amounts of Waste Generated in this reporting month

Waste Type	***Actual Amount***	***Disposal Locations***
Public fill collected (ton)	*16,469.16*	*-*
Sorted inert material (ton)	*10,370.85*	*TKO Fill Bank*
Sorted non-inert material (ton)	*9,996.23*	*SENT Landfill*
Recycling (Metal) ('000kg)	*0*	*Recycling companies*
C&D waste (e.g papar / cardboard packaging and plastic) (in tonne)	*0*	*WENT Landfill*
Chemical waste (kg / L)	*0*	*Chemical Waste Treatment Centre*
Hard Rock and Large Broken Concrete (tonne)	*0*	*TKO Fill Bank*

The Contractor should provide sufficient drip trays for all the oil drums/chemical containers. Besides, these drip trays should be covered by tarpaulin sheet to minimize rainfall accumulation.

The Contractor should use suitable containers with proper labels to store chemical wastes inside a designated chemical waste store in accordance with Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. The Contractor should also advise their workers of the proper procedures

in handling the chemical waste. All the trip tickets for chemical waste disposal were properly kept in the site office.

The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials using for this cleaning works as chemical waste.

9.0 Status of Environmental Licensing and Permitting

All permits/licenses valid in this reporting month are summarized in Table 9.1.

Table 9.1 Summary of environmental licensing and permit status

Description	*Permit No.*	*Valid Month*		*Details*
		From	*To*	
Environmental Permit	*EP-134/2002/M*	*17/12/18*	*---*	▪ *Site clearance* ▪ *Construction of a temporary storm water system* ▪ *Stockpiling of 6 million m3 of public fill* ▪ *Setting up two barging points for transporting the stockpiled public fill by barges* ▪ *Setting up a temporary barging point at the existing Explosive Off-loading Barging Point for the month of May 2004 to December 2004 for transporting the stockpiled public fill by barge* ▪ *Construction of operation of a construction and Demolition Material Sorting Facility (C&DMSF)* ▪ *Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin* ▪ *Remove the temporary fill bank*
Effluent Discharge License	*WT00027622-2017*	*07/04/17*	*30/04/22*	▪ *Effluent, Surface run-off, and other wastewater discharges from the premises*
Chemical Waste Producer	*5213-839-S3993-01*	*18/01/17*	*End of Project*	▪ *Spent Lubricating Oil*
Billing Account for Disposal of Construction Waste	*7026885*	*10/01/17*	*End of Project*	▪ *---*

10.0 ENVIRONMENTAL NON-CONFORMANCE

10.1 Summary of air quality

No Action and Limit level exceedance of 1-hour and 24-hour TSP monitoring was recorded in this reporting month.

10.2 Summary of Environmental Complaints

No complaint was received in this reporting month.

10.3 Summary of Notification of Summons and successful Prosecution

There was no notification of summons and successful prosecution respect to environmental issues registered in this reporting month.

11.0 IMPLEMENTATION STATUS

11.1 Implementation Status of Environmental Mitigation Measures

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

11.2 Implementation Status of Event and Action Plan

Since no exceedance of Action and Limit level of air quality monitoring results was recorded for this reporting month, no further action was required.

11.3 Implementation Status of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No complaint, notification of summon and successful prosecution was received in this reporting period. A summary of environmental complaints, notifications of summons and successful prosecutions was given in Table 11.1 and further details of the complaint could be found in the Complaint Log (Appendix J).

Table 11.1 Summary of Environmental Complaints and Prosecutions

Complaints logged		*Summons served*		*Successful prosecution received*	
February 2019	*Cumulative*	*February 2019*	*Cumulative*	*February 2019*	*Cumulative*
0	*0*	*0*	*0*	*0*	*0*

12.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Impact monitoring of air quality was carried out at a designated location in accordance with the EM&A Manual in this reporting period.

No Action and Limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded in this reporting period.

No complaint, prosecutions and notifications of summons was received in this reporting period.

According to the ET weekly site inspections carried out in this reporting period, the Contractor generally implemented sufficient dust mitigation measures, including operation of the mist spraying systems, dampening of haul roads and stockpiling areas.

Recommendations

According to the environmental site inspections performed in the reporting period, the following recommendations were provided:

Air Quality

- Ensure the frequency of water spraying on haul roads, unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke;
- Provide water spraying onto the truckloads during inspection of fill material;
- Conduct road sweeping on the public road and the main haul roads outside and near the site egress by the road sweeper;
- Undertake water spraying on stockpiling area by water bowsers;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit;
- Operate mist spraying systems and automatic water sprinklers in the temporary CWSF;
- Implement the dust mitigation measures for the construction activities;
- Designate proper haul roads to ensure effective water spraying; and

- Ensure all vehicles to be washed before leaving the site egress by provision, operation and maintenance of automatic wheel washing facilities.

Construction Noise
- Conduct noisy activities at a farther location from the NSR.

Water Quality
- Maintain the drainage system, including the trapezoidal channels;
- Operate and maintain the treatment system for the site toilet; and
- Remove the stagnant water or provide pesticide for the stagnant water in the permanent desilting chambers, if any.

Chemical and Waste Management
- Remove waste materials from site regularly to avoid accumulation;
- Handle and store chemical wastes properly;
- Remove unwanted material in the existing stockpiles and avoid further dumping of such material;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain good housekeeping at the workshop area;
- Ensure sufficient tarpaulin sheets are provided to cover drip trays;
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any, and
- Provide a proper chemical waste store.

Landscape and Visual
- Erect all the site hoardings/chaining fences in accordance with agreed design at proper location.

13.0 FUTURE KEY ISSUES

13.1 Work Programme for the Coming Month

As informed by the Contractor, the activities to be conducted by them in the next month included:

- *Operation of Construction Waste Sorting Facilities (CWSFs);*
- *Maintenance of CWSFs;*
- *Disposal of sorted waste at designated landfills and public fill reception facilities.*
- *Replacement of Combined Reception Exit Office (CREO) at TKO CWSF*

13.2 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;*
- *Dust generated from loading and unloading activities; and*
- *Dust generated from dump trucks traffic.*

Mitigation measures to be required in the coming month:

Air Quality
- To prohibit any open burning on site;
- To provide adequate water spraying on haul roads and working platforms;
- To operate and maintain automatic wheel washing facilities properly;
- To dampen the fill material prior to unloading or movement;
- To provide road sweeping on all paved haul roads and the public roads outside site egress;
- To provide proper maintenance for equipment and vehicles on site;
- To ensure implementation of the dust mitigation measures for the construction activities, if any;
- To maintain proper operation of the mist spraying systems;

- To ensure vehicle speed below 10 km/hr in the temporary CWSF;
- To investigate any other dust sources around the air sensitive receivers; and
- To follow up any exceedance, if any, caused by the temporary CWSF operation.

Noise

- To identify the noise sources inside and outside of the site;
- To follow up any exceedance caused by the temporary CWSF operation;
- To switch off equipment if not in use;
- To operate silent equipment; and
- To re-schedule the work activities in the event of valid noise exceedance.

Water Quality

- To operate and maintain the wastewater treatment facility for the site toilet;
- To provide covers for the drip trays to avoid stagnant water ponding due to rainfall;
- To ensure cleanliness of oil interceptor bypass tank and all the drainage channels;
- To maintain the existing silt trap to ensure sufficient treatment of wheel wash water frequently;
- To maintain the drainage system in the temporary CWSF; and
- To avoid formation of any stagnant water or provide insecticide to avoid mosquito breeding in the temporary CWSF

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 provide and manage sufficiently sized drip trays for diesel drums or chemical containers;
- To maintain proper housekeeping at the workshop area;
- To provide all the preventive measures during equipment maintenance;
- To remove the oil stains in the event of leakage and handle all the materials using for this cleaning works as chemical waste; and
- To identify C&D material by packaging, labelling, storage, transportation and disposal in accordance with statutory regulations.

13.3 Monitoring Schedule for the Coming Month

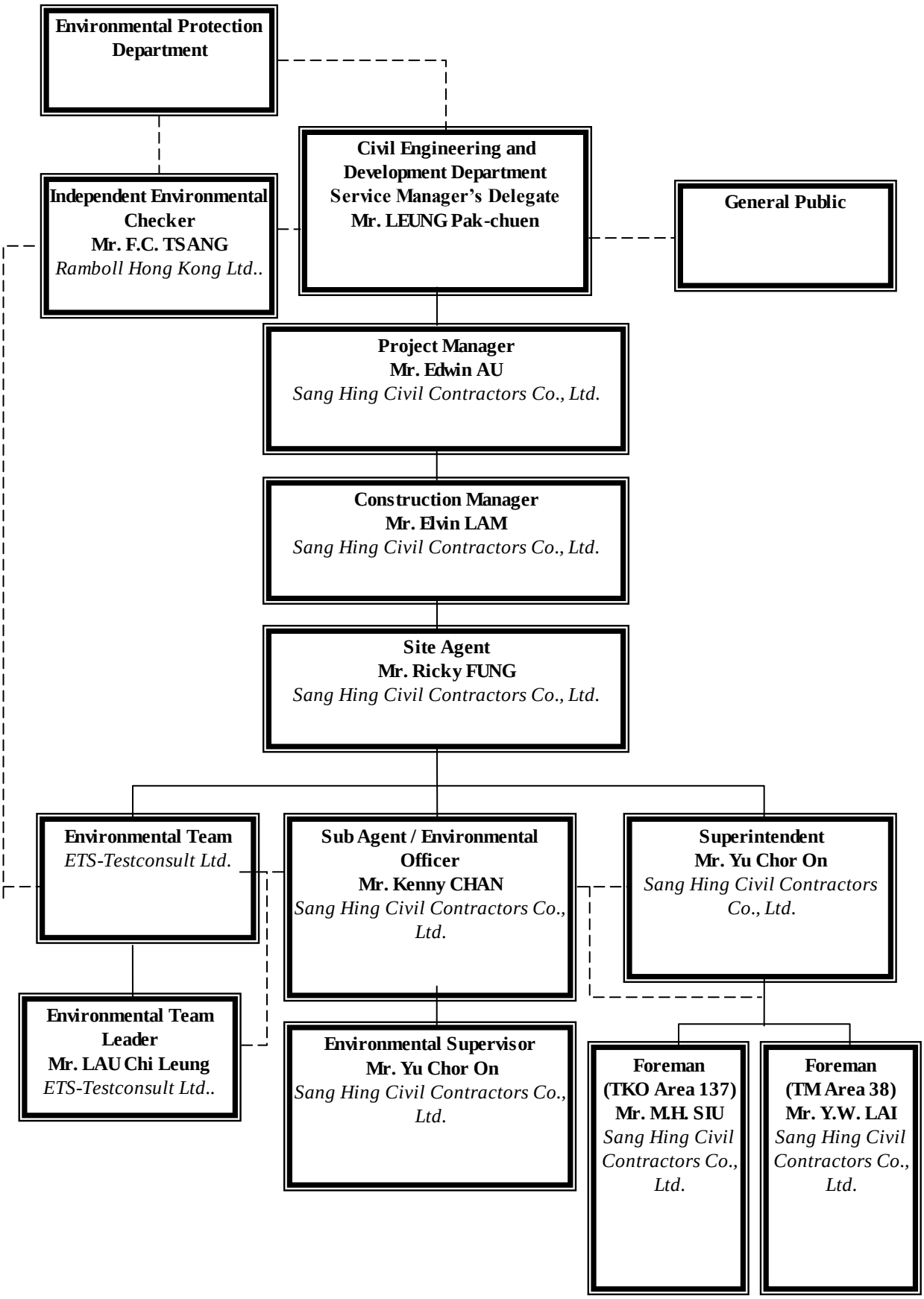
The proposed EM&A program of the coming month is attached in Appendix I.

- END OF REPORT -

Appendix A

Organization Chart

Organization Chart for Environmental Management



Appendix B1

Calibration Certificates for Impact Air Quality Monitoring Equipment

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Calibration Report
of
High Volume Air Sampler

Manufacturer : Tisch TE-5009X

Date of Calibration : 10 December 2018

Serial No. : 2185 (ET / EA / 003 / 24)

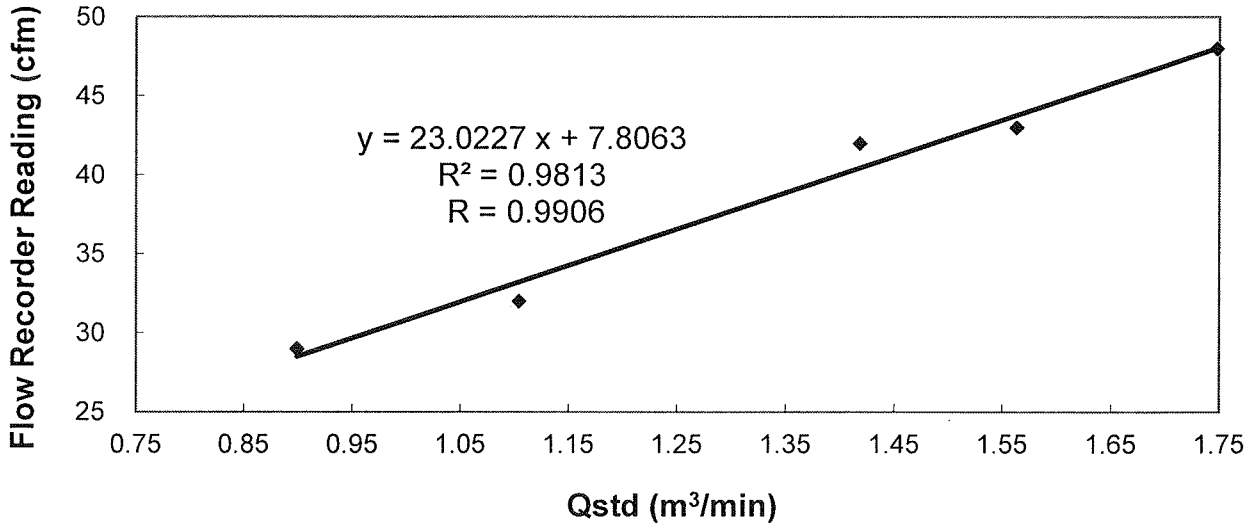
Calibration Due Date : 09 February 2019

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

Results :

Flow recorder reading (cfm)	48	43	42	32	29
Qstd (Actual flow rate, m^3/min)	1.75	1.56	1.42	1.10	0.90
Pressure : 768.81 mm Hg		Temp. : 287 K			

Sampler 2185 Calibration Curve
Site: Sorting TKO (TKO2)



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 : _____
LIAO, Yun Chao
(Technician)

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

- END OF REPORT -

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Calibration Report
of
High Volume Air Sampler

Manufacturer : Tisch TE-5009X

Date of Calibration : 08 February 2019

Serial No. : 2185 (ET / EA / 003 / 24)

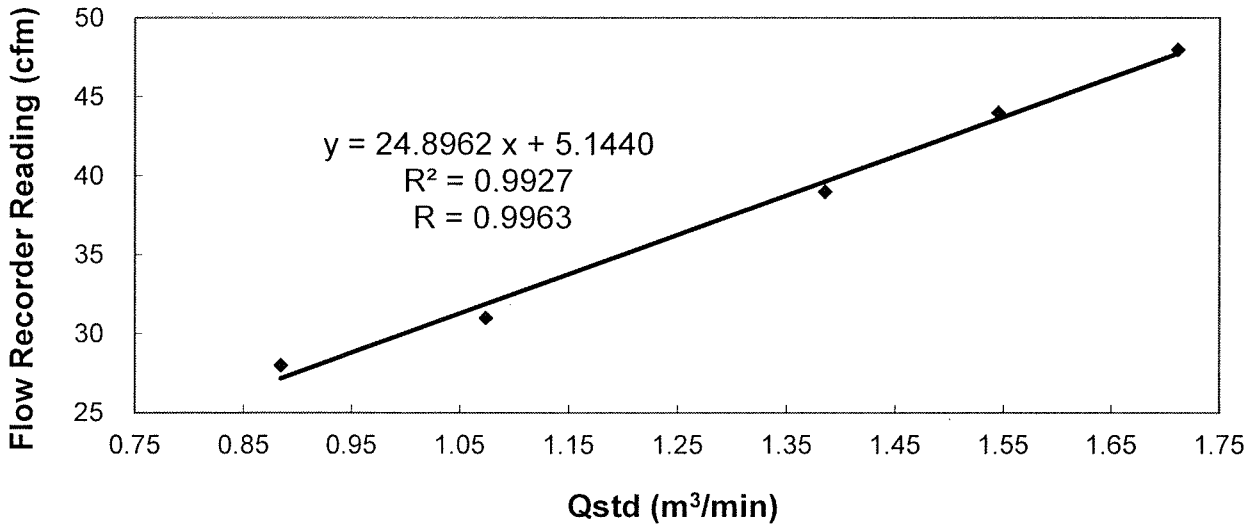
Calibration Due Date : 07 April 2019

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

Results :

Flow recorder reading (cfm)	48	44	39	31	28
Qstd (Actual flow rate, m^3/min)	1.71	1.54	1.38	1.07	0.88
Pressure : 768.81 mm Hg		Temp. : 297 K			

Sampler 2185 Calibration Curve
Site: Sorting TKO (TKO2)



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
(Envrionmental Officer)

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

- END OF REPORT -

TISCH Environmental

RECALIBRATION DUE DATE:
March 21, 2019

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	March 21, 2018	**Rootsmeter S/N:** 438320	**Ta:** 293	°K
Operator:	Jim Tisch		**Pa:** 756.9	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **3480**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4200	3.2	2.00
2	3	4	1	1.0000	6.4	4.00
3	5	6	1	0.8950	7.9	5.00
4	7	8	1	0.8570	8.8	5.50
5	9	10	1	0.7070	12.7	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0087	0.7103	1.4233	0.9958	0.7012	0.8799
1.0044	1.0044	2.0129	0.9915	0.9915	1.2443
1.0024	1.1200	2.2505	0.9896	1.1057	1.3912
1.0012	1.1682	2.3603	0.9884	1.1533	1.4591
0.9959	1.4087	2.8467	0.9832	1.3907	1.7598
QSTD	**m=**	**2.04113**	**QA**	**m=**	**1.27812**
	b=	**-0.03040**		**b=**	**-0.01879**
	r=	**0.99994**		**r=**	**0.99994**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg

Key
ΔH: calibrator manometer reading (in H2O)
ΔP: rootsmeter manometer reading (mm Hg)
Ta: actual absolute temperature (°K)
Pa: actual barometric pressure (mm Hg)
b: intercept
m: slope

RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

Appendix B2

Impact Air Quality Monitoring Results

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Summary of 24-hr TSP Monitoring Results

Monitoring Station : TKO2

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Action Level ($260\mu g/m^3$ Exceedance	Limit Level ($260\mu g/m^3$ Exceedance
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final			
03/02/2019	08:00	04/02/2019	08:00	18491.95	18515.95	24.00	1.0509	1.0509	1.0509	2.7035	2.8248	80	No	No
09/02/2019	08:00	10/02/2019	08:00	18518.95	18542.95	24.00	1.0787	1.0787	1.0787	2.5864	2.8381	162	No	No
15/02/2019	13:00	16/02/2019	13:00	18545.95	18569.95	24.00	1.0787	1.0787	1.0787	2.4828	2.7127	148	No	No
21/02/2019	08:00	22/02/2019	08:00	18572.95	18596.95	24.00	1.0787	1.0787	1.0787	2.6568	2.8974	155	No	No
27/02/2019	14:00	28/02/2019	14:00	18599.95	18623.95	24.00	1.1189	1.1189	1.1189	2.6478	2.8266	111	No	No

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Summary of 1-hr TSP Monitoring Results

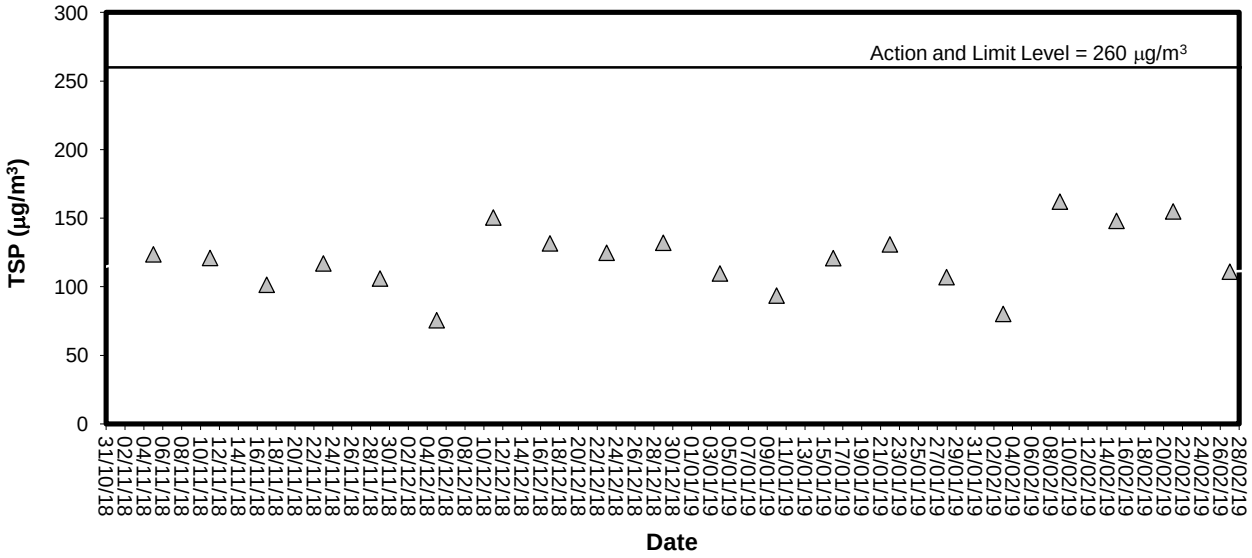
Monitoring Station :TKO2

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Action Level (383$\mu g/m^3$ Exceedance	Limit Level (500$\mu g/m^3$ Exceedance
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final			
01/02/2019	09:56	01/02/2019	10:56	18490.95	18491.95	1.00	1.0509	1.0509	1.0509	2.7286	2.7383	154	No	No
08/02/2019	10:44	08/02/2019	11:44	18515.95	18516.95	1.00	1.1189	1.1189	1.1189	2.7204	2.7317	168	No	No
08/02/2019	13:00	08/02/2019	14:00	18516.95	18517.95	1.00	1.1189	1.1189	1.1189	2.7033	2.7138	156	No	No
08/02/2019	14:17	08/02/2019	15:17	18517.95	18518.95	1.00	1.1189	1.1189	1.1189	2.7270	2.7365	142	No	No
11/02/2019	09:20	11/02/2019	10:20	18542.95	18543.95	1.00	1.1189	1.1189	1.1189	2.6475	2.6660	276	No	No
11/02/2019	10:25	11/02/2019	11:25	18543.95	18544.95	1.00	1.1189	1.1189	1.1189	2.6108	2.6285	264	No	No
13/02/2019	09:15	13/02/2019	10:15	18544.95	18545.95	1.00	1.0787	1.0787	1.0787	2.6744	2.6881	212	No	No
18/02/2019	09:47	18/02/2019	10:47	18569.95	18570.95	1.00	1.1189	1.1189	1.1189	2.7369	2.7518	222	No	No
18/02/2019	14:08	18/02/2019	15:08	18570.95	18571.95	1.00	1.1189	1.1189	1.1189	2.6888	2.7057	252	No	No
20/02/2019	10:45	20/02/2019	11:45	18571.95	18572.95	1.00	1.0787	1.0787	1.0787	2.7068	2.7253	286	No	No
22/02/2019	15:06	22/02/2019	16:06	18596.95	18597.95	1.00	1.1189	1.1189	1.1189	2.6429	2.6545	173	No	No
22/02/2019	16:10	22/02/2019	17:10	18597.95	18598.95	1.00	1.1189	1.1189	1.1189	2.6357	2.6468	165	No	No
25/02/2019	10:20	25/02/2019	11:20	18598.95	18599.95	1.00	1.1189	1.1189	1.1189	2.6320	2.6418	146	No	No

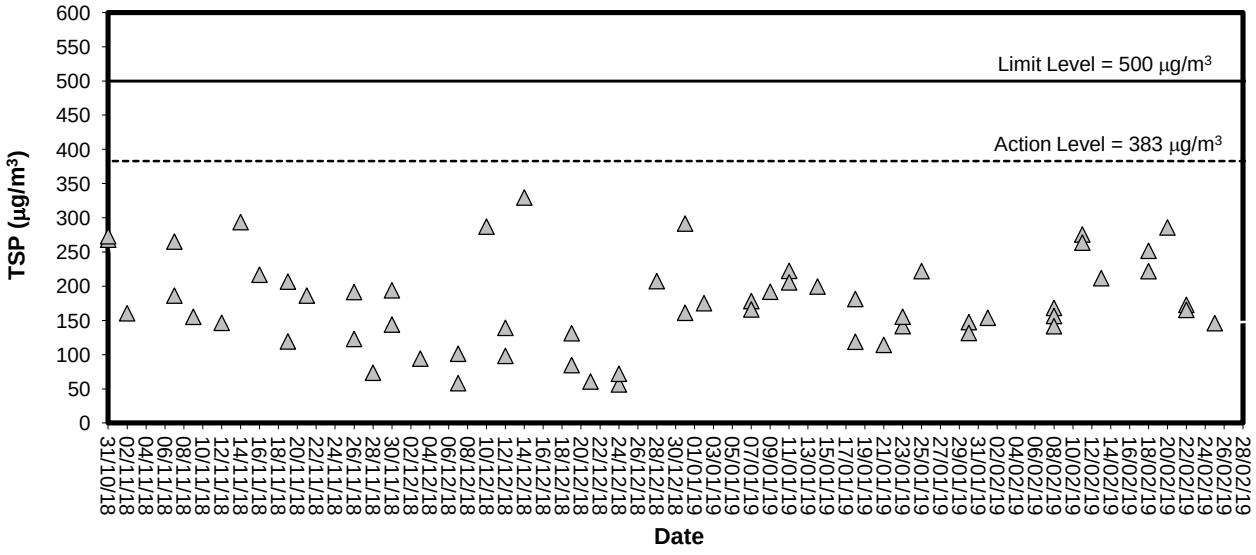
Appendix B3

Graphical Plots of Impact Air Quality Monitoring Data

24-hour TSP level at TKO2



1-hour TSP level at TKO2



Appendix C

Weather Condition

Daily Extract of Meteorological Observations , February 2019 - Tseung Kwan O

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg.C)	Absolute Daily Min (deg. C)					
1	***	19.9	17.6	15.8	11.7	69	0	60	7.5
2	***	19.3	17.7	16.3	14.4	81	0	360	7.5
3	***	25.8	20.9	18.2	18.3	85	0	70	2.9
4	***	26.6	20.7	17.6	18.1	86	0	70	5
5	***	22	19.3	17.2	16.8	85	0	20	5.9
6	***	25.6	21.5	19.5	19.3	88	0	190	3.3
7	***	25.8	21.7	18.8	19.7	89	0	190	3.5
8	***	25.2	20.1	18.7	18.8	92	0	50	6.7
9	***	19.4	18.4	17.7	17.1	92	1	10	8.1
10	***	18	17.3	16.7	16	92	1	40	9.6
11	***	19	17.3	16	15.1	87	0.5	40	6.2
12	***	21.2	17.7	15.3	15.4	87	2	20	6
13	***	25.4	19.5	16.1	17.1	87	0	70	3.5
14	***	23	19.6	17.7	16.9	85	0.5	20	8.3
15	***	20.8#	19	17.6#	17.2	90	0.5	360	5.3
16	***	27	21.4	18	18.2	84	0	60	6.5
17	***	18.9	17.8	17	16.1	90	0.5	40	11.5
18	***	17.7	16.9	16.2	16.1	95	19.5	60	7.8
19	***	22.9	19.4	17.5	18.5	95	24.5	10	3.6
20	***	24.6	21.5	19.8	20.6	95	0	360	3.1
21	***	21	20	19.3	19.7	98	0	360	3.6
22	***	24.7	20.7	18.4	17.1	81	1	60	5.7
23	***	19.2	17	14	15.1	89	11	60	8.9
24	***	18.7	16	13.3	13.4	85	3	70	5
25	***	18.4	16.9	15	14.6	87	0	20	4.2
26	***	18.8	17.7	16.4	16.4	92	2	50	8.2
27	***	21.7	19.4	17.4	17.6	89	0	60	4.1
28	***	27.3	22.2	19.3	19.7	87	0	180	3.1

data incomplete

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Appendix D

Event-Action Plans

EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

EVENT	ACTION			
	ET Leader	IC(E)	ER	Contractor
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Inform ER, IC(E) and Contractor 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily	1. Check monitoring data submitted by the ET 2. Check contractor's working method	1. Notify Contractor	1. Rectify any unacceptable practise 2. Amend working methods if appropriate
2. Exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Inform IC(E) and Contractor 3. Repeat measurements to confirm finding 4. Increase monitoring frequency to daily 5. Discuss with IC(E) and Contractor on remedial actions 6. If exceedance continues, arrange meeting with IC(E) and ER. 7. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by the ET Leader 2. Check the Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise the ER on the effectiveness of the proposed remedial measures 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify the Contractor 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial actions to IC(E) within 3 working days of notification 2. Implement the agreed proposals 3. Amend proposal if appropriate
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Inform ER, Contractor and EPD 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily 5. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results	1. Check monitoring data submitted by the ET Leader 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise the ER on the effectiveness of the proposed remedial measures 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify the Contractor 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification 3. Implement the agreed proposals 4. Amend proposal if appropriate.

EVENT	EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE			
	ACTION			
	ET Leader	IC(E)	ER	Contractor
2. Exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Notify IC(E), ER, EPD and Contractor 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily 5. Carry out analysis of contractor's working procedures to determine possible mitigation to be implemented 6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken 7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results 8. If exceedance stops, cease additional monitoring	1. Discuss amongst ER, ET and Contractor on the potential remedial actions 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. In consultation with the IC(E), agree with the Contractor on the remedial measures to be implemented 4. Ensure remedial measures are properly implemented 5. If exceedances 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 exceedances 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated

Appendix E

Works Programme

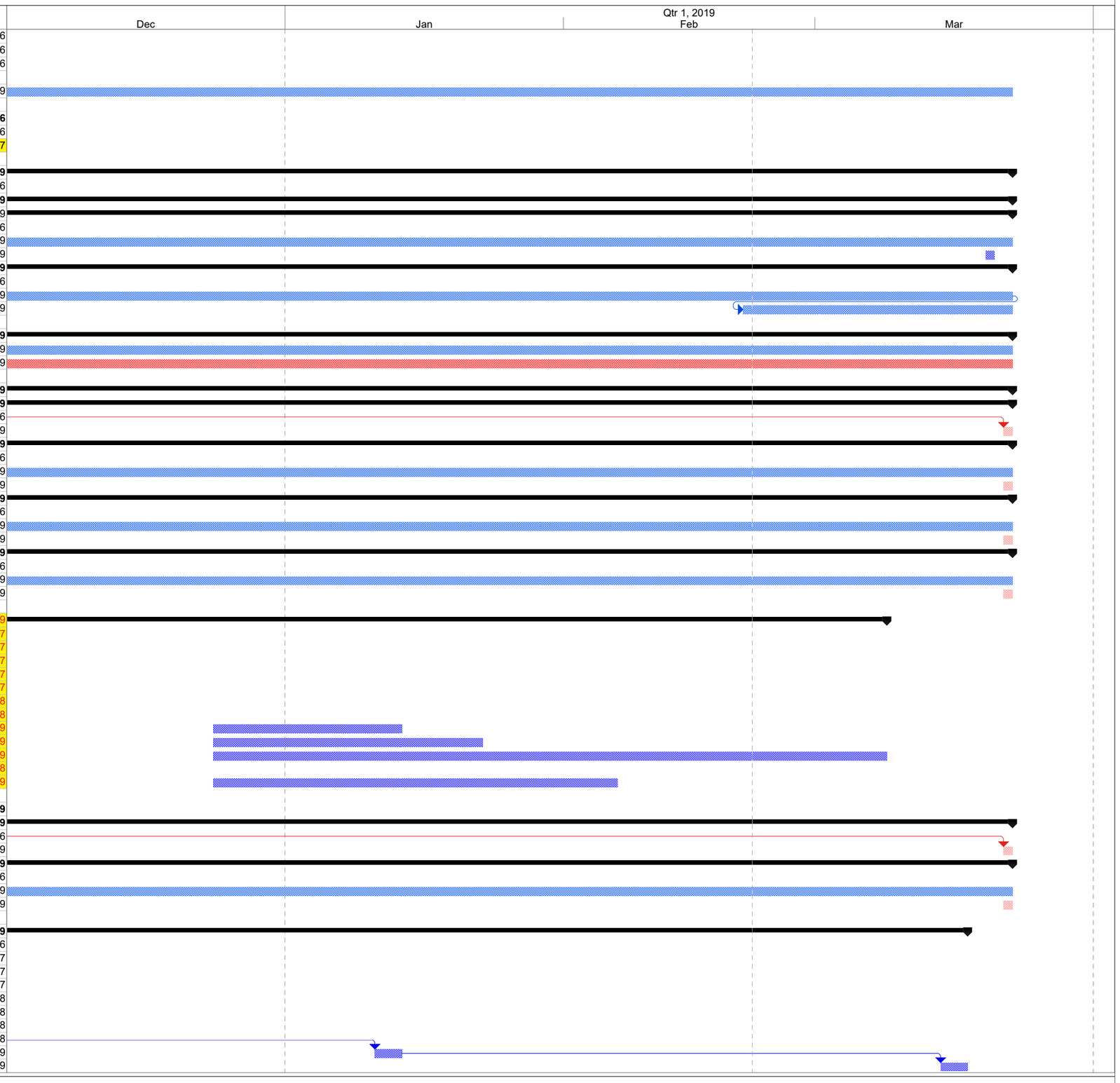
CONTRACT NO. CV/2016/04
TEMPORARY CONSTRUCTION WASTE
SORTING FACILITIES, 2017-2018

Three-Month Rolling Programme

(22.01.2019)

SANG HING CIVIL CONTRACTORS CO. LTD.

ID	Task Name	Duration	Start	Finish
1	**Letter of Acceptance**	1 day	Fri 09/12/16	Fri 09/12/16
2	**Starting Date**	1 day	Fri 23/12/16	Fri 23/12/16
3	**Date for commencement of Operation**	1 day	Wed 28/12/16	Wed 28/12/16
4				
5	**Master Programme of the Works**	820 days	Fri 23/12/16	Fri 22/03/19
6				
7	**Possession of Site**	**1 day**	**Wed 28/12/16**	**Wed 28/12/16**
8	Portions A, AA, B1, B2, B3, B4, C, D1 & D2	1 day	Wed 28/12/16	Wed 28/12/16
9	Handed over of Portion AA	1 day	Fri 23/06/17	Fri 23/06/17
10				
11	**A. Preliminary**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
12	**1. Setting out of works**	1 day	Wed 28/12/16	Wed 28/12/16
13	**2. Engineer's Site Accommodation**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
14	**2.1 Principal & Secondary Site Offices**	815 days	Wed 28/12/16	Fri 22/03/19
15	a. Taking over	1 day	Wed 28/12/16	Wed 28/12/16
16	b. Servicing	815 days	Wed 28/12/16	Fri 22/03/19
17	c. Handover	1 day	Wed 20/03/19	Wed 20/03/19
18	**3. Contractor's Site Accommodation**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
19	3.1 Erection / Take over	1 day	Wed 28/12/16	Wed 28/12/16
20	3.2 Servicing & Maintenance	815 days	Wed 28/12/16	Fri 22/03/19
21	3.3 Removal & Reinstatement of the sites	30 days	Thu 21/02/19	Fri 22/03/19
22				
23	**B. The works and Operation at TKO Area 137 & TM Area 38**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
24	1. Carrying out environmental mitigation & monitoring measures	815 days	Wed 28/12/16	Fri 22/03/19
25	2. Disposal of sorted waste at designated landfills & public fill reception	815 days	Wed 28/12/16	Fri 22/03/19
26				
27	**C. Section 1 of works at Portions A, AA, B1,B2, B3, B4 of the site**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
28	**1. Construction Waste Sorting Facilities including SCDR System**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
29	1.1 Taking over	1 day	Wed 28/12/16	Wed 28/12/16
30	1.2 Handing over	1 day	Fri 22/03/19	Fri 22/03/19
31	**2. Associated infrastructure, equipment and plant**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
32	2.1 Taking over	1 day	Wed 28/12/16	Wed 28/12/16
33	2.2 Operation and maintenance	815 days	Wed 28/12/16	Fri 22/03/19
34	2.3 Handing over	1 day	Fri 22/03/19	Fri 22/03/19
35	**3. Temporary toilet**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
36	3.1 Taking over	1 day	Wed 28/12/16	Wed 28/12/16
37	3.2 Operation and maintenance	815 days	Wed 28/12/16	Fri 22/03/19
38	3.3 Handing over	1 day	Fri 22/03/19	Fri 22/03/19
39	**4. Wheel washing facilities**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
40	4.1 Taking over	1 day	Wed 28/12/16	Wed 28/12/16
41	4.2 Operation and maintenance	815 days	Wed 28/12/16	Fri 22/03/19
42	4.3 Handing over	1 day	Fri 22/03/19	Fri 22/03/19
43				
44	**5. Compensation Event CE.**	736 days	Fri 03/03/17	Fri 08/03/19
45	CE. No.1 (Enhancement of CWSF)	50 days	Fri 03/03/17	Fri 21/04/17
46	CE. No.2 (Modification of New Access Opening)	14 days	Mon 06/03/17	Sun 19/03/17
47	CE. No.3 (Change of Opening Hour for TKO Affected Property and	21 days	Mon 03/04/17	Sun 23/04/17
48	CE. No.4 (Replacement of Weightbridge No.4 and the associated	55 days	Sun 02/07/17	Fri 25/08/17
49	CE. No.5 (Replacement of Septic Tank and associated Earth works	21 days	Mon 21/08/17	Sun 10/09/17
50	CE. No.6 (Replacement of Wheel Washing Machine No.4 and	7 days	Wed 11/04/18	Tue 17/04/18
51	CE. No.7 (Replacement of Vibrating Grizzly Feeder and 37.5kW	14 days	Mon 16/04/18	Sun 29/04/18
52	CE. No.8 (Replacement of CCTV Display System at TM CWSF)	21 days	Mon 24/12/18	Sun 13/01/19
53	CE. No.12 (Replacement of Toilet Facilities & Enhancement of	30 days	Mon 24/12/18	Tue 22/01/19
54	CE. No.16 (Replacement of Weighbridge Nos. 2 & 3 and CREO in	75 days	Mon 24/12/18	Fri 08/03/19
55	CE. No.18 (Removal of Fallen Trees and Debris in Tai Po)	28 days	Fri 05/10/18	Thu 01/11/18
56	CE. No.19 (Replacement of SCDR System in TKO CWSF and TM	45 days	Mon 24/12/18	Wed 06/02/19
57				
58	**D. Section 2 of works at Portions C, D1 and D2 of the site**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
59	**1. Construction Waste Sorting Facilities including SCDR System**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
60	1.1 Taking over	1 day	Wed 28/12/16	Wed 28/12/16
61	1.2 Handing over	1 day	Fri 22/03/19	Fri 22/03/19
62	**2. Associated infrastructure, equipment and plant**	**815 days**	**Wed 28/12/16**	**Fri 22/03/19**
63	2.1 Taking over	1 day	Wed 28/12/16	Wed 28/12/16
64	2.2 Operation and maintenance	815 days	Wed 28/12/16	Fri 22/03/19
65	2.3 Handing over	1 day	Fri 22/03/19	Fri 22/03/19
66				
67	**E. Checking of sorting plants and facilities**	**810 days**	**Wed 28/12/16**	**Sun 17/03/19**
68	December 2016	3 days	Wed 28/12/16	Fri 30/12/16
69	March 2017	3 days	Fri 31/03/17	Sun 02/04/17
70	June 2017	3 days	Sun 02/07/17	Tue 04/07/17
71	September 2017	3 days	Tue 03/10/17	Thu 05/10/17
72	December 2017	3 days	Thu 04/01/18	Sat 06/01/18
73	March 2018	3 days	Sat 07/04/18	Mon 09/04/18
74	June 2018	3 days	Mon 09/07/18	Wed 11/07/18
75	September 2018	3 days	Wed 10/10/18	Fri 12/10/18
76	December 2018	3 days	Fri 11/01/19	Sun 13/01/19
77	March 2019	3 days	Fri 15/03/19	Sun 17/03/19



Task Split Milestone Summary Project Summary Critical

Appendix F

Weekly ET's Site Inspection Record

Inspection Date : 04 February 2019

Time : 10:00

Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy

Wind : Calm / Light / Breeze / Strong

Temperature : 22 °C

Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contactor	ET
Signature:			
Name:	F. X. DA COSTA	Kenny Chan	IVY Lo
Title	IOW/P2	E.O.	E.T.

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	√			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√			
▪ The designated site main haul road shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	√			
▪ Open burning should be prohibited.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ When sorting material is transfer by sorting plant, the conveyors shall be enclosed on top and 2 sides.	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√			
▪ Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).	√			
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√			
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	√			
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	√			
▪ Manholes should be covered and sealed.	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
▪ Oil interceptor shall be provided at work shop.	√			
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors				
▪ C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.	√			
▪ The Environmental Permit should be displaced conspicuously on site.	√			
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
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Remark

	Name	Title	Signature	Date
Checked by	Frankie Tang	ET Representative		04 February 2019

Inspection Date : 11/02/2019

Time : 10:00

Weather : Sunny / Fine / ~~Cloudy~~ / Overcast / Drizzle / Rain / Storm / Hazy

Wind : ~~Calm~~ / Light / Breeze / Strong

Temperature : 18 °C

Humidity : High / ~~Moderate~~ / Low

Inspected by	CEDD	Contractor / Sub-Contactor	ET
Signature:			
Name:	F. X. DA COSTA	Kenny Chan	
Title	IOW/PR	E.O.	E.T

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	√			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√			
▪ The designated site main haul road shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	√			
▪ Open burning should be prohibited.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ When sorting material is transfer by sorting plant, the conveyors shall be enclosed on top and 2 sides.	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√			
▪ Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).	√			
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√			
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	√			
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	√			
▪ Manholes should be covered and sealed.	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
▪ Oil interceptor shall be provided at work shop.	√			
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors				
▪ C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.	√			
▪ The Environmental Permit should be displaced conspicuously on site.	√			
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
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Remark

	Name	Title	Signature	Date
Checked by	Frankie Tang	ET Representative		11 February 2019

CEDD Contract No.: CV/2016/04

Temporary Construction Waste Sorting Facilities, 2017-2018 - ***TKO CWSF***

Inspection Date : 18/02/2019

Time : 10:00

Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy

Wind : Calm / Light / Breeze / Strong

Temperature : 17 °C

Humidity : High / Moderate / Low

Inspected by	**CEDD**	**Contractor / Sub-Contactor**	**ET**
Signature:	[signature]	[signature]	[signature]
Name:	T. X. DA Costa	Ricky Fung	Cico Yu Chao
Title	Iow/Pu	Site Agent	ET

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	√			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√			
▪ The designated site main haul road shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	√			
▪ Open burning should be prohibited.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ When sorting material is transfer by sorting plant, the conveyors shall be enclosed on top and 2 sides.	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√			
▪ Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).	√			
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√			
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	√			
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	√			
▪ Manholes should be covered and sealed.	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
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▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
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▪ A waste collection vessel shall be deployed to remove floating debris.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
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Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
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Remark

	Name	Title	Signature	Date
Checked by	Frankie Tang	ET Representative		18 February 2019

Inspection Date : 25/2/19

Time : 15:00

Weather : Sunny / Fine / (Cloudy) / Overcast / Drizzle / Rain / Storm / Hazy

Wind : Calm / (Light) / Breeze / Strong

Temperature : 20°C

Humidity : High / Moderate / (Low)

Inspected by	CEDD	Contractor / Sub-Contactor	ET
Signature:			
Name:	F. X. DA COSTA	Kenny Chan	Mak Kei Wai
Title	IOW/P2	E.O.	E.T

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
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▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
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▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√			
▪ The designated site main haul road shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			
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Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
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▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
▪ Oil interceptor shall be provided at work shop.	√			
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors				
▪ C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.	√			
▪ The Environmental Permit should be displaced conspicuously on site.	√			
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
---	---	---	---	---	---

Remark

	Name	Title	Signature	Date
Checked by	Frankie Tang	ET Representative		25 February 2019

Appendix G

Implementation Schedule of Mitigation Measures

Environmental Mitigation Implementation Schedule

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	All areas	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	Northern Site Boundary	√			
▪ Water sprays shall be provided and used to dampen materials.	All areas	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	All areas	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	All areas	√			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	Site Egress	√			
▪ The designated site main haul rout shall be paved or regular watering.	All haul roads	√			
▪ Frequent watering of work site shall be at least three times per day.	All areas	√			
▪ Wheel washing facilities including high pressure water jet shall be provided at the entrance of work site.	Site Egress	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	Site Egress	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	All areas	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	All areas	√			
▪ When sorting material is transfer by sorting plant, the conveyors shall be enclosed on top and 2 sides	C&DMSF	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	C&DMFS	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	C&DMFS	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	All areas	√			
▪ Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).	All areas	√			
Noise Impact					
▪ Approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	All areas	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the site works.	All areas	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	All areas	√			
▪ Air compressors and hand held breakers should have noise labels.	All areas	√			

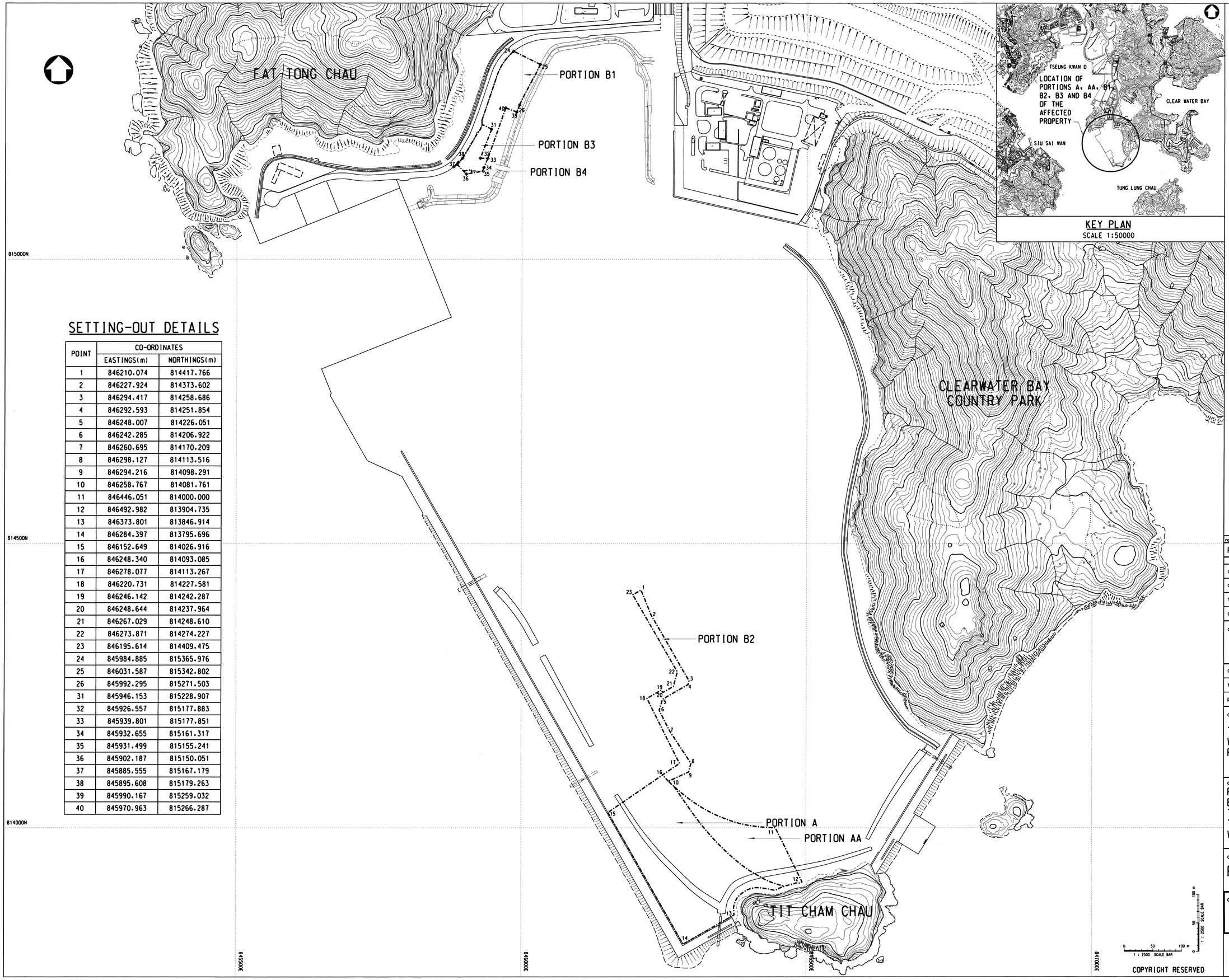
▪ Machines and plants that may be in intermittent use should be shut down between work months or should be throttled down to a minimum.	All areas	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	All areas	√			

Environmental Protection Measures	**Location**	**Implementation Status**			
		Implemented	Partially implemented	Not implemented	Not Applicable
▪ Water Quality					
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	All areas	√			
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	All areas	√			
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	All areas	√			
▪ Manholes should be covered and sealed.	All areas	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	All areas	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	All areas	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	All areas	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	All areas	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	All areas	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	All areas	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	All areas	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	Wheel Washing Bay	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Wheel Washing Bay	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	All areas	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	Car Parking Areas	√			
▪ Oil interceptor shall be provided at work shop.	Work Shop	√			
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	All areas				√
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	Barge Handling Area (BHA)				√
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	Barge Handling Area (BHA)				√
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	Barge Handling Area (BHA)				√

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	Barge Handling Area (BHA)				√
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	Barge Handling Area (BHA)				√
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	Barge Handling Area (BHA)				√
▪ A waste collection vessel shall be deployed to remove floating debris.	Barge Handling Area (BHA)				√
Landscape and Visual					
▪ Construction of lighting to avoid spillage and glare	All areas	√			
▪ Hydro-seeding	All areas	√			
▪ Hoarding erection	Completed slopes	√			
▪ Damage to surrounding area avoided	Site boundary	√			
Other Environmental Factors					
▪ C&D waste sorted from mixed C&D material shall be transfer to SENT landfill for disposal.	All areas	√			
▪ Plan and stock construction materials carefully to minimise generation of waste.	All areas	√			
▪ Any unused materials or those with remaining functional capacity should be recycled.	All areas	√			
▪ All generators, fuel and oil storage are within bundled areas.	All areas	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.	All areas	√			
▪ The Environmental Permit should be displaced conspicuously on site.	Site Egress	√			
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	All areas	√			
▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	All areas	√			
▪ Provide rubbish skips at all work areas	All areas	√			

Appendix H

Site General Layout plan



KEY PLAN
SCALE 1:50000

SETTING-OUT DETAILS

POINT	CO-ORDINATES	
	EASTINGS(m)	NORTHINGS(m)
1	846210.074	814417.766
2	846227.924	814373.602
3	846294.417	814258.686
4	846292.593	814251.854
5	846248.007	814226.051
6	846242.285	814206.922
7	846260.695	814170.209
8	846298.127	814113.516
9	846294.216	814098.291
10	846258.767	814081.761
11	846446.051	814000.000
12	846492.982	813904.735
13	846373.801	813846.914
14	846284.397	813795.696
15	846152.649	814026.916
16	846248.340	814093.085
17	846278.077	814113.267
18	846220.731	814227.581
19	846246.142	814242.287
20	846248.644	814237.964
21	846267.029	814248.610
22	846273.871	814274.227
23	846195.614	814409.475
24	845984.885	815365.976
25	846031.587	815342.802
26	845992.295	815271.503
31	845946.153	815228.907
32	845926.557	815177.883
33	845939.801	815177.851
34	845932.655	815161.317
35	845931.499	815155.241
36	845902.187	815150.051
37	845885.555	815167.179
38	845895.608	815179.263
39	845990.167	815259.032
40	845970.963	815266.287

NOTES:

1. ALL CO-ORDINATES REFER TO HONG KONG GEODETIC DATUM 1980 AND IN METRES.
2. EXACT BOUNDARY OF PORTION AA OF THE AFFECTED PROPERTY TO BE DETERMINED BY THE *SERVICE MANAGER*.

LEGEND:

-·-·-·- BOUNDARY OF AFFECTED PROPERTY

no.	date	description	checked	approved
REVISION				

	name	initial	date
designed	N. C. CHAN		17.8.2016
drawn	P. Y. YUE		17.8.2016
traced			
checked	K. S. TAM		17.8.2016

approved
IMOK FANG-CHING, PETER
Chief Engineer
Date 17.8.2016

contract no. CV/2016/04

file no.

project no.

contract
TEMPORARY CONSTRUCTION WASTE SORTING FACILITIES, 2017 - 2018

drawing title
PORTIONS A, AA, B1, B2, B3 AND B4 - TSEUNG KWAN O AREA 137 TEMPORARY CONSTRUCTION WASTE SORTING FACILITY

drawing no. FM10086-2

scale 1:2500 OR AS SHOWN

office
FILL MANAGEMENT DIVISION
CIVIL ENGINEERING OFFICE

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

B1 1000 x 707

Appendix I

Monitoring Schedule for the Coming Month

東業德勤測試顧問有限公司
ETS-TESTCONSULT LTD.

CEDD Contract No. CV/2016/04 –
Temporary Construction Waste Sorting Facilities, 2017-2018

Tseung Kwan O

March 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
24	25 **1-hr TSPX1** **Weekly SI (am)**	26	27 **24 hr TSP** **24-hr RSP**	28	1/3 **1-hr TSPX2**	2
3	4 **1-hr TSPX1** **Weekly SI (am)**	5 **24 hr TSP** **24-hr RSP**	6 **1-hr TSPX2**	7	8 **1-hr TSPX1**	9
10	11 **24 hr TSP** **24-hr RSP** **Weekly SI (am)**	12	13 **1-hr TSPX2**	14	15 **1-hr TSPX1**	16
17 **24 hr TSP** **24-hr RSP**	18 **1-hr TSPX1** **Weekly SI (am)**	19	20 **1-hr TSPX1**	21	22 **1-hr TSPX1**	23 **24 hr TSP** **24-hr RSP**
24	25 **1-hr TSPX2** **Weekly SI (am)**	26	27 **1-hr TSPX1**	28	29 **24 hr TSP** **24-hr RSP**	30
31	1/4 **1-hr TSPX2** **Weekly SI (am)**	2	3 **1-hr TSPX1**	4 **24 hr TSP** **24-hr RSP**	5 **1-hr TSPX2**	6

Appendix J

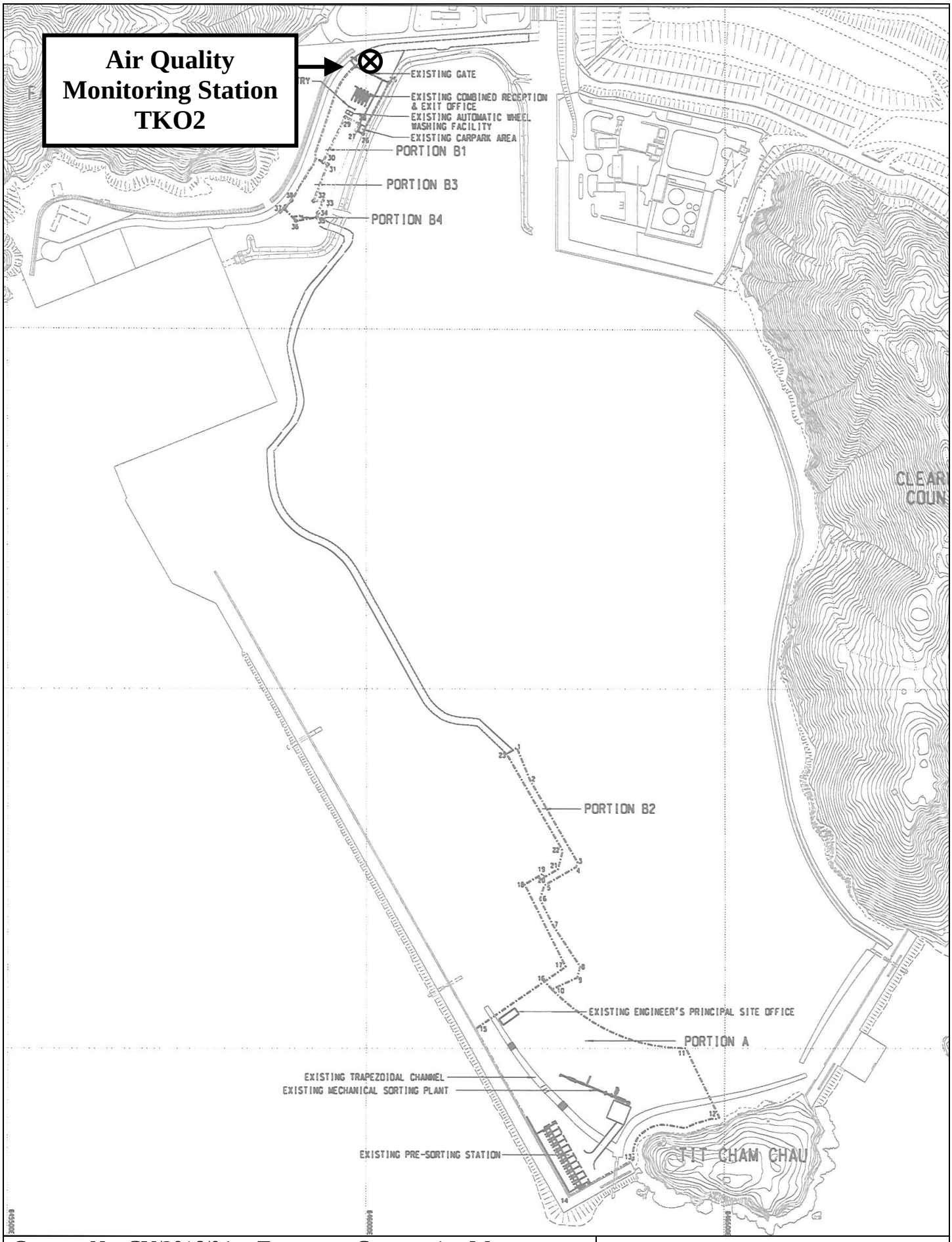
Complaint Log

東業德勤測試顧問有限公司
ETS-TESTCONSULT LTD.

Complaint Logs

Log Ref.	Location	Received Date	Details of Complaint	Investigation / Mitigation Action	Status
---	---	---	---	---	---

Figure



Contract No: CV/2016/04 – Temporary Construction Waste Sorting Facilities (CWSF), 2017-2018 at Tseung Kwan O (TKO) Area 137

Figure 1 - Location of Air Quality Monitoring Station

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED