



# **South East New Territories (SENT) Landfill Extension**

Monthly Environmental Monitoring & Audit Report No.13 for January 2020

February 2020

#### ERM

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#### South East New Territories (SENT) Landfill Extension

## Environmental Certification Sheet EP-308/2008/B and FEP-01/308/2008/B

#### Reference Document/Plan

Monthly Environmental Monitoring & Audit Report No.13

Document/Plan to be Certified/Verified: for January 2020 for South East New Territories (SENT)

Landfill Extension

Date of Report: 7 February 2020

#### Reference EP Condition

EP Condition: Condition No. 3.4

Four hard copies and one electronic copy of monthly EM&A Report shall be submitted to the Director within 10 working days after the end of the reporting month. The EM&A Reports shall include a summary of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels). The submissions shall be verified by the IEC. Additional copies of the submission shall be provided to the Director upon request by the Director.

#### **ET Certification**

I hereby certify that the above referenced document/plan complies with the above referenced condition of EP-308/2008/B and FEP-01/308/2008/B.

Warchitt.

Frank Wan,

Environmental Team Leader:

(ERM Hong-Kong, Limited)

Date: 7 February 2020

Date: 10 (602020

#### **IEC Verification**

I hereby verify that the above referenced document/plan complies with the above referenced condition of EP-308/2008/B and FEP-01/308/2008/B.

Fredrick Leong,

Independent Environmental Checker:

(Meinhardt Infrastructure and

**Environment Limited)** 

# **South East New Territories (SENT) Landfill Extension**

## Monthly Environmental Monitoring & Audit Report for January 2020

### **Environmental Resources Management**

2507, 25/F, One Harbourfront 18 Tak Fung Street Hunghom, Kowloon Hong Kong

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Client:		Projec	Project No:			
Green Valley Landfill Ltd.		0465169				
Summary:		Date:				
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Revision	Description	Ву	Checked	Approved	Date	
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#### **EXECUTIVE SUMMARY**

The SENT Landfill Extension (SENTX) forms an integral part in the Strategic Plan in maintaining the continuity of landfill capacity in the Hong Kong for the cost-effective and environmentally satisfactory disposal of waste. ERM-Hong Kong, Limited (ERM) is commissioned to undertake the role of Environmental Team (ET) for the construction, operation/restoration and aftercare of SENTX Project ("the Project") in accordance with the requirements specified in the Environmental Permit (EP), updated Environmental Monitoring and Audit (EM&A) Manual, the approved Environmental Impact Assessment (EIA) Report of the Project taking account of the latest design and other relevant statutory requirements. The construction (not including works related to site clearance and preparation) of the Project commenced on 2 January 2019.

This Monthly EM&A report presents the EM&A works carried out during the period from 1 to 31 January 2020 for the Project in accordance with the updated EM&A Manual.

#### **Exceedance of Action and Limit Levels for Air Quality**

No exceedance of Action and Limit Levels for construction air quality monitoring was recorded in the reporting period.

#### **Exceedance of Action and Limit Levels for Noise**

No exceedance of Action and Limit Levels for construction noise monitoring was recorded in the reporting period.

#### **Exceedance of Action and Limit Levels for Surface Water Quality**

Sampling could not be carried out for all the scheduled impact surface water quality monitoring events during the reporting period due to insufficient flow.

#### **Environmental Complaints, Summons and Prosecutions**

There were no complaints, notification of summons or prosecution recorded in the reporting period.

#### **Reporting Change**

There was no reporting change in the reporting period.

#### **Future Key Issues**

Potential environmental impacts arising from the upcoming construction activities in the next reporting period of February 2020 are mainly associated with dust emission from the exposed area and loading and uploading operation of dusty materials.

#### 1 INTRODUCTION

#### 1.1 BACKGROUND

The SENT Landfill Extension (SENTX) forms an integral part in the Strategic Plan in maintaining the continuity of landfill capacity in the Hong Kong for the cost-effective and environmentally satisfactory disposal of waste. The *Environmental Impact Assessment (EIA) Report* and the associated *Environmental Monitoring and Audit (EM&A) Manual* for the construction, operation, restoration and aftercare of the SENTX (hereafter referred to as "the Project") have been approved under the *Environmental Impact Assessment Ordinance (EIAO)* in May 2008 (Register No.: AEIAR-117/2008) (hereafter referred to as the approved EIA Report) and an Environmental Permit (EP-308/2008) (EP) was granted by the Director of Environmental Protection (DEP) on 5 August 2008.

Since then, applications for Variation of an Environmental Permit (No. VEP-531/2017) were submitted to EPD and the Variation of Environmental Permits (EP-308/2008/A and EP-308/2008/B) were granted on 6 January 2012 and 20 January 2017, respectively, as the Hong Kong SAR Government has decided to reduce the scale of the design scheme of SENTX assessed in the approved EIA Report and SENTX will only receive construction waste. In May 2018, a Further Environmental Permit (FEP) (FEP-01/308/2008/B) was granted to the SENTX's contractor, Green Valley Landfill, Limited (GVL).

ERM-Hong Kong, Limited (ERM) and Meinhardt Infrastructure and Environment Limited (Meinhardt) are commissioned to undertake the roles of Environmental Team (ET) and the Independent Environmental Checker (IEC), respectively, to undertake the EM&A activities for the Project in accordance with the requirements specified in the EP, updated EM&A Manual (1), approved EIA Report (2) taking account of the latest design and other relevant statutory requirements.

#### 1.2 PROJECT DESCRIPTION

The SENTX is a piggyback landfill, occupying the southern part of the existing SENT Landfill (including its infrastructure area) and 13 ha of Tseung Kwan O (TKO) Area 137. A layout plan of the SENTX is shown in *Figure 1.1*. Under the latest design, the SENTX has a net void capacity of about 6.5 Mm³ and provides an additional lifespan of about 6 years, commencing operation upon exhaustion of the SENT Landfill. The SENTX will receive construction waste only.

The key implementation milestones of the Project are indicatively summarised in *Table 1.1*. The construction works of the Project commenced on 2 January 2019.

<sup>(1)</sup> ERM (2018). South East New Territories (SENT) Landfill Extension: Environmental Monitoring & Audit Manual

<sup>(2)</sup> ERM (2007). South East New Territories (SENT) Landfill Extension - Feasibility Study: Environmental Impact Assessment Report

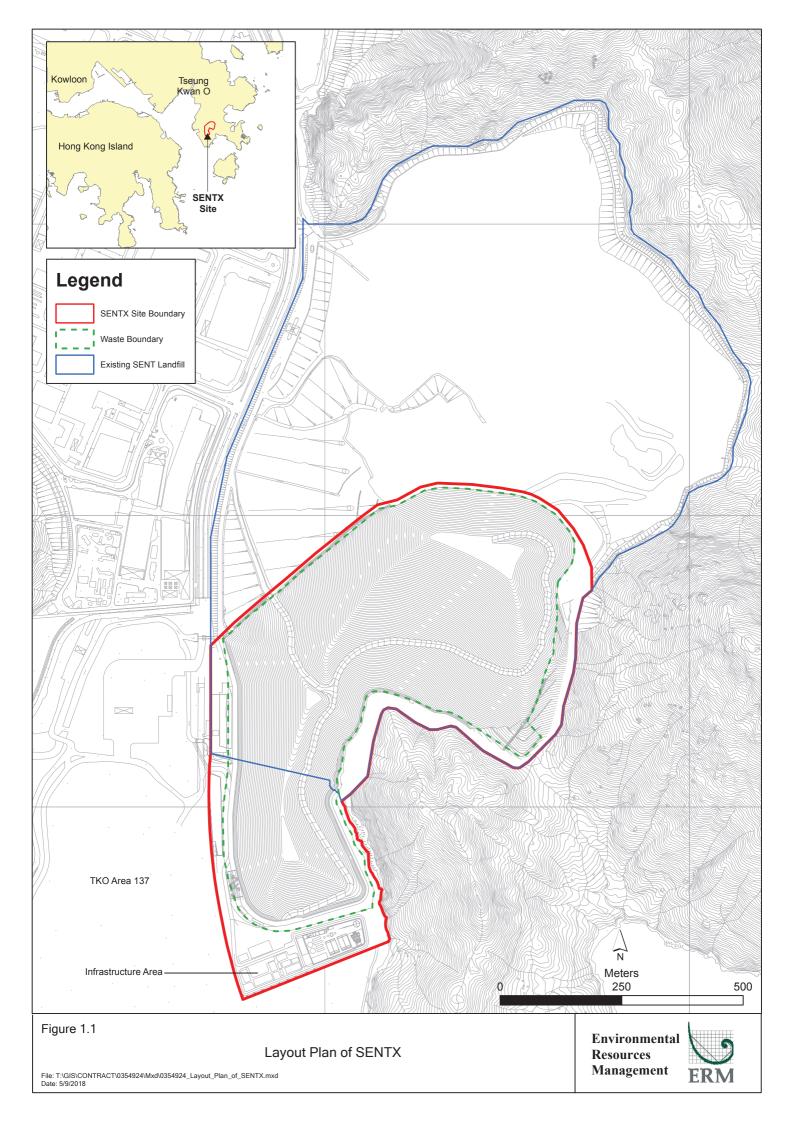


 Table 1.1
 Estimated Key Dates of Implementation Programme

Key Stage of the Project	Indicative Date
Start construction	2 January 2019
Commissioning of new infrastructure facilities	2020
Demolition of existing infrastructure facilities	2021
Start waste intake at SENTX	2021 or upon exhaustion of SENT Landfill
Estimated exhaustion date of SENTX	2027
End of aftercare for SENTX	2057

The major construction works of the SENTX includes:

- Site formation at the TKO Area 137 and the existing infrastructure area at SENT Landfill;
- Construction of surface and groundwater drainage systems;
- Construction of the leachate containment and collection systems;
- Construction of new leachate and landfill gas treatment facilities, site offices, maintenance yards at the new infrastructure area;
- Construction of new pipelines to transfer the leachate and landfill gas
  collected from the existing SENT Landfill to the treatment facilities at the
  new infrastructure area;
- Construction of the site access and new waste reception facilities; and
- Demolition of the facilities at the existing SENT Landfill infrastructure area.

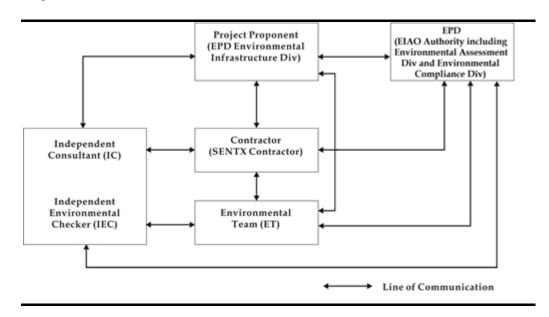
#### 1.3 SCOPE OF THE EM&A REPORT

This is the Monthly EM&A Report for the Project which summarises the key findings of the EM&A programme during the reporting period from 1 to 31 January 2020 for the construction works.

#### 1.4 PROJECT ORGANISATION

The organisation structure of the Project is presented in *Figure 1.2*.

Figure 1.2 Organisation Chart



Contact details of the key personnel are summarised in *Table 1.2* below.

Table 1.2 Contact Information of Key Personnel

Party	Position	Name	Telephone
Contractor	Project Manager	Gary Barnicott	2706 8827
(Green Valley Landfill			
Limited)			
Environmental Team (ET)	ET Leader	Frank Wan	2271 3152
(ERM-Hong Kong, Limited)			
Independent Environmental	IEC	Fredrick Leong	2859 1739
Checker (IEC)			
(Meinhardt Infrastructure			
and Environment Limited)			

#### 1.5 SUMMARY OF CONSTRUCTION WORKS

The programme of the construction is shown in *Annex A*. As informed by the Contractor, the major works carried out in this reporting period include:

- Building services works for control building of Landfill Gas Plant;
- Paving works at Landfill Gas Plant area;
- Flares and cooling towers installation of Landfill Gas Plant;
- Excavating, removing and replacing unsuitable fill materials;
- Construction of last bay of outlet box culvert;
- Rebar fixing, formwork and concreting to the superstructure of laboratory building;

- Installation of ammonia stripping plant, equalization tank, sequencing batch reactor tank and treated effluent tank at Leachate Treatment Plant (LTP) area;
- Construction of perimeter bund for Cell 2X;
- Maintenance and improvement of the temporary surface water drainage;
- Shotcreting and mass concrete for Buttress Wall;
- Installing groundwater pipe works from South to North at eastern side from Cell 3X to 4X;
- Liner installation at Cell 1X and 2X;
- Pipe rack installation;
- Construction of plinths of maintenance building;
- Construction of footing of fire service tank room and water tank room;
- Construction of perimeter bund channel; and
- Construction of pits and ducting for underground utilities.

The implementation schedule of the mitigation measured recommended in the Updated EM&A Manual is presented in *Annex B*.

#### 1.6 SUMMARY OF EM&A PROGRAMME REQUIREMENTS

The status for all environmental aspects are presented in *Table 1.3*. The EM&A requirements remained unchanged during the reporting period.

Table 1.3 Summary of Status for the Environmental Aspects under the Updated EM&A Manual

Parameters	Status
Air Quality	
Baseline Monitoring	The results of baseline air quality monitoring were reported in
	Baseline Monitoring Report and submitted to EPD under EP
	Condition 3.3
Impact Monitoring	On-going
Noise	
Baseline Monitoring	The results of baseline noise monitoring were reported in
	Baseline Monitoring Report and submitted to EPD under EP
	Condition 3.3
Impact Monitoring	On-going
Surface Water Quality	
Baseline Monitoring	The results of baseline surface water quality monitoring were
	reported in Baseline Monitoring Report and submitted to EPD
	under EP Condition 3.3
Impact Monitoring	On-going
Waste Management	
Waste Monitoring	On-going
Landscape and Visual	

Parameters	Status
Baseline Monitoring	The results of baseline landscape and visual monitoring were
	reported in Baseline Monitoring Report and submitted to EPD
	under EP Condition 3.3
Construction Phase Audit	On-going On-going
Site Environmental Audit	
Regular Site Inspection	On-going On-going
Complaint Hotline and Email	On-going On-going
Channel	
Environmental Log Book	On-going On-going

Taking into account the construction works, impact monitoring of air quality, noise, surface water quality and waste management were carried out in the reporting period. The monitoring schedule of air quality, noise and surface water quality monitoring are provided in *Annex C*.

The EM&A programme also involved environmental site inspections and related auditing conducted by the ET for checking the implementation of the required environmental mitigation measures recommended in the approved EIA Report and relevant EP submissions. To promote the environmental awareness and enhance the environmental performance of the contractors, environmental trainings and regular environmental management meetings were conducted during the reporting period, which are summarised as below:

- One environmental management meeting was held with the Contractor, ER, ET, IEC and EPD on 8 January 2020; and
- Environmental toolbox trainings on An Introduction to the Air Pollution Control (Smoke) Regulations and Clean Recycling were provided on 6 January and 17 January 2020 respectively by the Contractor to the workers.

## 1.7 STATUS OF STATUTORY ENVIRONMENTAL COMPLIANCE WITH THE ENVIRONMENTAL PERMIT

The status of statutory environmental compliance with the EP conditions under the EIAO, submission status under the EP and implementation status of mitigation measures are presented in *Table 1.4*.

Table 1.4 Status of Submissions required under the EP and Implementation Status of Mitigation Measures

EP	Submission/Implementation Status	Status
Condition		
2.3	Management Organisation of Main	Submitted and accepted by EPD.
	Construction Companies	
2.4	Setting up of Community Liaison Group	Community Liaison Group was set up.
2.5	Submission of Detailed Landfill Gas	Submitted and accepted by EPD on 10
	Hazard Assessment Report	January 2019.
2.6	Submission of Restoration and Ecological	Submitted to EPD on 28 June 2019.
	Enhancement Plan	
2.7	Setting up of Trial Nursery	Trial Nursery works was commenced
	·	on 28 August 2019.

EP	Submission/Implementation Status	Status
Condition		
2.8	Advance Screen Planting	Advance Screen Planting works were completed on 28 June 2019.
2.9	Provision of Multi-layer Composite Liner System	Under implementation.

#### 1.8 STATUS OF OTHER STATUTORY ENVIRONMENTAL REQUIREMENTS

The environmental licenses and permits (including EP, *Water Pollution Control Ordinance* (WPCO) discharge license, registration as a chemical waste producer, and construction noise permit) that are valid in the reporting period are presented in *Table 1.5*. No non-compliance with environmental statutory requirements was identified.

Table 1.5 Status of Statutory Environmental Requirements

Description	Ref No.	Status
Environmental Permit	EP-308/2008	Granted on 5 August 2008
Variation of Environmental Permit	EP-308/2008/A	Granted on 6 January 2012
	EP-308/2008/B	Granted on 20 January 2017
Further Environmental Permit	FEP-01/308/2008/B	Granted on 16 May 2018
Water Discharge License under	Licence No.: WT00033525-	Validity from 27 March
WPCO (Permit Holder: Chun Wo)	2019	2019 to 31 March 2024
Billing Account for Disposal of	Chit Account Number:	Approved on 28 December
Construction Waste	5001692	2005
Registration as a Chemical Waste Producer (Permit Holder: Chun Wo)	5213-839-C3507-10	Issued on 23 August 2018
Registration as a Chemical Waste	5518-839-R2289-06	Issued on 24 October 2019
Producer (Permit Holder: REC)		
Construction Noise Permit (Permit	GW-RE1001-19	Validity from 16 December
Holder: Chun Wo)		2019 to 10 June 2020
Construction Noise Permit (Permit	GW-RE0029-20	Validity from 20 January
Holder: REC)		2020 to 31 May 2020

#### 2 EM&A RESULTS

The EM&A programme for the Project required environmental monitoring for air quality, noise and surface water quality as well as environmental site inspections for air quality, noise, surface water quality, waste management, and landscape and visual impacts. The EM&A requirements and related findings for each component are summarised in the following sections.

#### 2.1 AIR QUALITY MONITORING

#### 2.1.1 Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, impact air quality monitoring (dust, in term of Total Suspended Particulates (TSP)) was carried out at the two designated monitoring locations (i.e. DM1 and DM2) at a 6-day interval. As there are two existing TSP monitoring stations (i.e. TKO-A1 and TKO-A2a) currently operating by the Civil Engineering and Development Department (CEDD) to monitor the 24-hour TSP levels at the proposed dust monitoring stations for the SENTX, it is considered that the CEDD monitoring data can represent the dust condition of the SENTX during the construction phase.

The Action and Limit Levels of the air quality monitoring is provided in *Table 2.1* below.

Table 2.1 Action and Limit Levels for 24-hour TSP

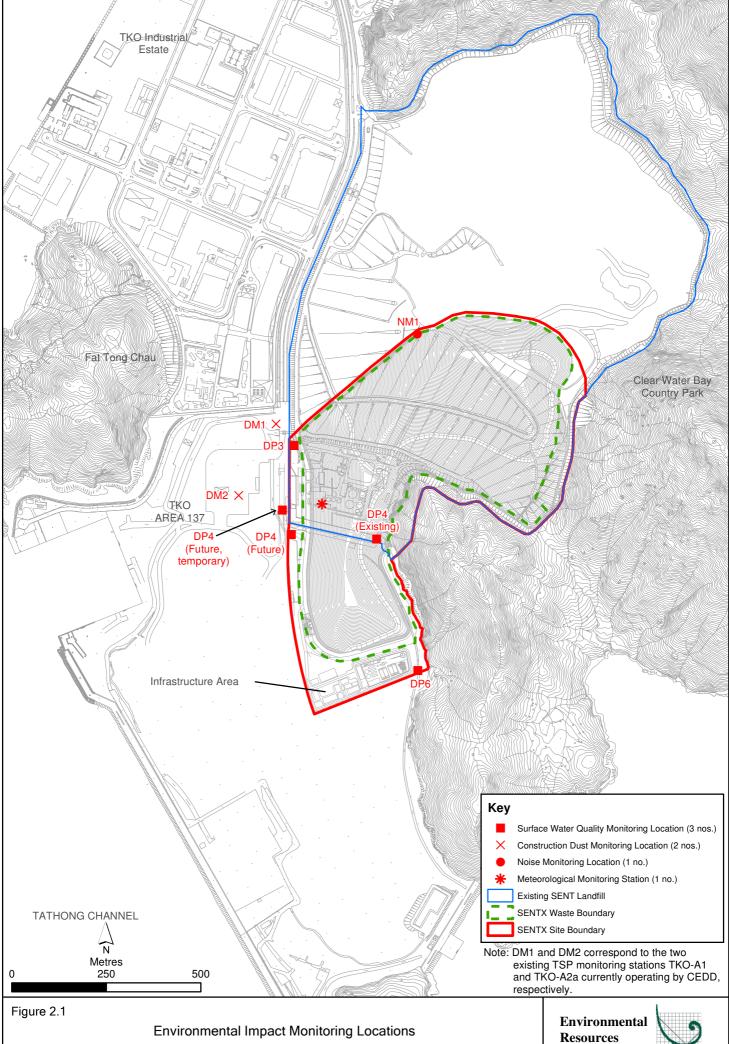
Monitoring Station	Action Level	Limit Level
DM-1 - Site Egress of TKO Area 137 Fill Bank	204 μg m- <sup>3</sup>	260 μg m- <sup>3</sup>
DM-2A -Combined Reception and Exit Office (CREO) of TKO Area 137 Fill Bank	193 μg m- <sup>3</sup>	260 μg m- <sup>3</sup>

High volume air samplers (HVSs) in compliance with the specifications listed under Section 3.2.2 of the updated EM&A Manual were used to measure 24-hour TSP levels at the CEDD dust monitoring stations. The HVSs were calibrated upon installation and thereafter at bi-monthly intervals to check the validity and accuracy of the results.

The equipment used in the impact air quality monitoring programme and monitoring locations are summarised in *Table 2.2* and illustrated in *Figure 2.1* respectively. Copies of the calibration certificates for the equipment are presented in *Annex D1*.

Table 2.2 Dust Monitoring Details

Monitoring Station	Location	Parameter	Frequency and Duration	Monitoring Dates	Equipment
DM1	Site Egress of	24-hour	Once every 6	5, 11, 17, 23, 29	HVS Greasby 105
	TKO Area 137	TSP	days during the	January 2020	(S/N: 9795
	Fill Bank		construction		(ET/EA/003/18))



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Management



Monitoring Station	Location	Parameter	Frequency and Duration	Monitoring Dates	Equipment
DM2	Combined Reception and Exit Office (CREO) of TKO Area 137 Fill Bank		phase of the Project		HVS Andersen G1051 (S/N: 1176 (ET/EA/003/05))

#### 2.1.2 Monitoring Schedule for the Reporting Month

The schedule for air quality monitoring during the reporting period is provided in *Annex C*.

#### 2.1.3 Results and Observations

The monitoring results for 24-hour TSP are summarised in *Table 2.3*. The detailed monitoring results and the graphical presentation of the 24-hour TSP results at each monitoring location are provided in *Annex D2*.

Table 2.3 Summary of 24-hour TSP Monitoring Results in the Reporting Period

Monitoring Station	Average 24-hr TSP Concentration (µg m <sup>-3</sup> ) (Range in bracket)	Action Level (μg/m³)	Limit Level (μg/m³)
DM-1 - Site Egress of TKO Area 137 Fill Bank	110 (95 - 124)	204	260
DM-2A -Combined Reception and Exit Office (CREO) of TKO Area 137 Fill Bank	96 (82 – 108)	193	260

The major dust sources in the reporting period included fugitive dust emission from exposed area in SENTX, as well as nearby operations of the existing SENT landfill and the TKO Area 137 Fill Bank.

All the 24-hour TSP results were below the Action and Limit Levels at the monitoring locations in the reporting period. No action is thus required to be undertaken in accordance with the Event and Action Plan presented in *Annex D3*.

#### 2.1.4 Meteorological Data

Meteorological data obtained from the on-site meteorological monitoring station at the existing SENT landfill (see *Figure 2.1*) were used for the dust monitoring and are shown in *Annex D4*. The meteorological station will be relocated to a new position for SENTX as per the updated EM&A Manual after the new infrastructure area at the SENTX is constructed. It is considered that meteorological data obtained at the existing the on-site meteorological monitoring station are representative of the Project area and could be used for the construction phase dust monitoring programme for the Project.

#### 2.2 Noise Monitoring

#### 2.2.1 Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, impact noise monitoring was conducted weekly at the monitoring location (i.e. NM1) to obtain one set of 30 minutes measurement between 07:00 and 19:00 hours on normal weekdays.

The Action and Limit Levels for construction noise of the Project are provided in *Table 2.4* below.

Table 2.4 Action and Limit Levels for Construction Noise

Time Period	Action Level (a)	Limit Level (b)
07:00 - 19:00 hrs on normal weekdays	When one documented complaint is 75 dB(A) at NSR received from any one of the noise sensitive receivers (NSRs)	
	or	
	75 dB(A) recorded at the monitoring station	

#### Notes:

- (a) 75dB(A) along and at about 100m from the SENTX site boundary was set as the Action Level
- (b) Limits specified in the GW-TM and IND-TM for construction and operational noise, respectively.

Noise monitoring was performed by ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066) using sound level meter at the designated monitoring station NM1 (see *Figure 2.1*) in accordance with the requirements stipulated in the updated EM&A Manual. Acoustic calibrator was deployed to check the sound level meter at a known sound pressure level. Details of the deployed equipment are provided in *Table 2.5*. Copies of the calibration certificates for the equipment are presented in *Annex E1*.

Table 2.5 Noise Monitoring Details

Monitoring Station (1)	Location	Parameter	Frequency and Duration	Monitoring Dates	Equipment
NM1	SENTX Site Boundary (North)	$L_{eq~(30~min)} \\ measurement \\ between 07:00 \\ and 19:00~hours$	Once per week for 30 mins during the	3, 9, 16, 23, 30 January 2020	Sound Level Meter: B&K 2238 (S/N: 2285762)
		on normal weekdays (Monday to Saturday)	construction period of the Project		Acoustic Calibrator: Rion NC-74 (S/N: 34657231)

#### 2.2.2 Monitoring Schedule for the Reporting Month

The schedule for noise monitoring during the reporting period is provided in *Annex C*.

#### 2.2.3 Results and Observations

A total of 5 impact noise monitoring events were scheduled during the reporting period. Results for noise monitoring are summarised in *Table 2.6*. The monitoring results and the graphical presentation of the data are provided in *Annex E2*.

Table 2.6 Summary of Construction Noise Monitoring Results in the Reporting Period

Monitoring Station	Measured Noise Level L <sub>eq (30 min)</sub> , dB(A)					
	Average	Range	Action and Limit Level			
NM1	50.5	47.8 - 53.0	75			

Major noise sources identified during the noise monitoring included noise from operations of the existing SENT landfill and the TKO Area 137 Fill Bank, aircrafts and insects.

No Action and Limit Levels exceedance was recorded for construction noise monitoring in the reporting period. No action is thus required to be undertaken in accordance with the Event and Action Plan presented in *Annex E3*.

#### 2.3 SURFACE WATER QUALITY MONITORING

#### 2.3.1 Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, impact surface water quality monitoring were carried out at the three designated surface water discharge points (i.e. DP3, DP4 and DP6) weekly to ensure that the SENTX will not cause adverse water quality impact. Temporary relocation of surface water discharge point DP4 to DP4 (Future, temporary) as an interim arrangement due to site constraints and construction sequence was approved by EPD on 14 May 2019. Surface water quality monitoring was carried out at DP4 (Future, temporary) (i.e. DP4T) from the monitoring event on 16 May 2019. In addition, suspension of impact surface water quality monitoring at DP3 was approved under the Baseline Monitoring Report by EPD on 24 July 2019 until the actual commencement of construction works affecting DP3 in 2021.

Dissolved Oxygen (DO) and pH value were measured in-situ whereas the level of suspended solids (SS) were determined by ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066).

The Action and Limit Levels of the surface water quality impact monitoring are provided in *Table 2.7*.

Table 2.7 Action and Limit Levels for Surface Water Quality

Parameters	Action Level	Limit Level	
	DP4 & DP6		
DO	< 5.80 mg/L	< 5.42 mg/L	

Parameters	Action Level	Limit Level	
	DP4 & DP6		
SS	> 11.7 mg/L	> 12.7 mg/L	
pН	> 8.39	> 8.40	

The locations of the monitoring stations for the Project are shown in *Figure 2.1*. All *in situ* monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the surface water quality monitoring programme. Calibration for a DO meter was carried out before measurement according to the instruction manual of the equipment model. Details of the equipment used in the impact surface water quality monitoring works are provided in *Table 2.8*. Copies of the calibration certificates for the equipment are presented in *Annex F1*.

Table 2.8 Impact Surface Water Quality Monitoring Details

Monitoring Station	Location	Frequency	Monitoring Dates	Parameter	Equipment
DP4 (Future, temporary)	Surface water discharge point DP4	Weekly	3, 9, 16, 23, 30 January 2020	•pH •DO	YSI Professional Plus (S/N: 10G101946)
DP6	Surface water discharge point DP6			•SS	

#### Notes:

- (a) DP4 was temporary relocated to DP4 (Future, temporary) (i.e. DP4T) as an interim discharge point from the monitoring event on 16 May 2019.
- (b) Impact surface water quality monitoring at DP3 was suspended from the monitoring event on 25 July 2019 until the actual commencement of construction works affecting DP3 in 2021.

#### 2.3.2 Monitoring Schedule for the Reporting Month

The schedule for surface water quality monitoring during the reporting period is provided in *Annex C*.

#### 2.3.3 Results and Observations

A total of 5 monitoring events for impact surface water quality monitoring were scheduled at all designated monitoring stations during the reporting period. However, sampling could not be carried out for all the scheduled events during the reporting period due to insufficient flow. Details of impact water quality monitoring events are provided in *Annex F2*.

No action is thus required to be undertaken in accordance with the Event and Action Plan presented in *Annex F3*.

#### 2.4 LANDSCAPE AND VISUAL MONITORING

#### 2.4.1 Monitoring Requirements

According to the updated EM&A Manual of the Project, the monthly landscape and visual audit was conducted on 31 January 2020 to monitor the implementation of the landscape and visual mitigation measures during construction phase.

All relevant environmental mitigation measures listed in the approved EIA Report and the updated EM&A Manual and their implementation status are summarised in *Annex B*.

#### 2.4.2 Results and Observations

The Contractor has implemented environmental mitigation measures as stated in the approved EIA Report and the EM&A Manual.

Regarding the landscape and visual audit, the Contractor was reminded to maintain the advance screen planting works as soon as possible to ensure effective screening of views of project works from the High Junk Peak Trail. The Contractor shall consider the mitigation measures during the design phase, including the preparation of the Construction Drawings and Detailed Landscape Design Drawings.

#### 2.5 EM&A SITE INSPECTION

Site inspections were carried out on a weekly basis with the Contractor, IEC and ER to monitor the implementation of proper environmental pollution control and mitigation measures for air quality, noise, surface water quality and waste management under the Project. In the reporting period, 4 site inspections were carried out on 8, 16, 22 and 30 January 2020.

Key observations during the site inspections are summarised in *Table 2.9*.

Table 2.9 Key Observations Identified during the Site Inspection in this Reporting Month

Inspection Date	Environmental Observations and Recommendations
8 January 2020	The Contractor shall cover the stockpile of dusty materials and
	conduct shotcrete mixing works in an area sheltered on the top
	and three sides near buttress wall to minimize dust impacts.
	The Contractor shall store the construction waste properly in
	refuse skips and dispose of the waste regularly near buttress wall
	and future LFG plant.
	The Contractor shall clear the general refuse disposed near
	buttress wall, future bioplant and at the temporary drain at
	Southern site boundary and dispose of the waste accumulated
	regularly to reduce odour and pest issues.

Inspection Date	Environmental Observations and Recommendations
16 January 2020	The Contractor shall conduct activities related to dusty materials
	i.e. shotcrete mixing works in an area sheltered on the top and
	three sides near buttress wall to minimize dust impacts.
	The Contractor shall maintain the haul road near buttress wall to
	minimize SS runoff to DP3 channel.
	The Contractor shall provide drip tray for chemicals stored at
	future bioplant.
	The Contractor shall avoid accumulation of stagnant water near
	LTP and spray larvicides for pest control.
	The Contractor shall segregate and store construction waste and
	general refuse in different skips and dispose of the waste
	accumulated near wheel washing facilities, future EPD building
	and future bioplant regularly.
22 January 2020	The Contractor shall display NRMM label on the new sheet
	piling back hoe near Cell 1X and replace the faded NRMM label
	on the excavator near future maintenance building.
	The Contractor shall remove the stagnant water accumulated in
	the drip tray near future GVL building to ensure effective
	containment of leakage.
	The Contractor shall avoid accumulation of stagnant water near
	future GVL building and spray larvicides for pest control.
	The Contractor shall segregate general refuse from construction
	waste near future maintenance building and bioplant and store
	the general refuse in enclosed bins near the site entrance to
	reduce odour and pest issues.
30 January 2020	The Contractor shall clear the general refuse accumulated in the
	temporary drain near site entrance and near future bioplant.
	The Contractor shall avoid accumulation of stagnant water near
	future GVL building and bioplant to minimise pest issues.
	The Contractor shall remove the spray paint at DP6 and dispose
	of the waste as chemical waste.

The Contractor has rectified most of the observations identified during environmental site inspections in the reporting period. Key environmental deficiencies identified and the corresponding rectification actions are presented in *Table 2.10*.

Table 2.10 Summary of Environmental Deficiencies Identified and Corresponding Rectification Actions

Deficiencies	Rectifications Implemented	Proposed Additional Control Measures
Surface Water		
Intercepting channels & drainage system	Reviewed drainage plan.	<ul> <li>Addition of channels.</li> <li>Expedite the construction of permanent sediment trap and discharge culverts.</li> </ul>
DP channels (design & regular silt removal)	<ul> <li>Carried out regular maintenance and cleaning of channels.</li> <li>DP4 channel: Area near the channel was paved with concrete and a bund was built.</li> <li>DP6 channel: Gravel piles on the channel were covered with concrete which serve as blocks for running water and to divide the channel into several sections. A pump was placed in the water zone in the upstream section to pump water to the Wetsep for treatment prior to the discharge to the last section before the weir plate.</li> <li>DP6: Pipes through the gravel piles between different channel sections were covered with geotextiles to block debris and silt.</li> </ul>	N.A.
Stockpiles & exposed soil	<ul> <li>Installed silt fencing near surface water channel along DP6 channel.</li> </ul>	<ul><li>Improve soil covering.</li><li>Compaction and cover for stockpiles and soil slopes.</li></ul>
Wetsep (treatment capacity & number)	<ul> <li>Reviewed Wetsep capacity.</li> <li>Chemicals dosage of the Wetsep was increased to enhance the efficiency.</li> </ul>	Install additional Wetsep.
Backflow / ponding during heavy rainfall	Raised with EPD (LDG) and CEDD.	N.A.

#### 2.6 WASTE MANAGEMENT STATUS

The Contractor has registered as chemical waste producer under the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

As informed by the Contractor, waste generated during this reporting period include mainly inert C&D materials. Reference has been made to the waste flow table prepared by the Contractor. The quantities of different types of wastes and imported fill materials are summarised in *Table 2.11*.

Table 2.11 Quantities of Different Waste Generated and Imported Fill Materials

Month/ Year	Inert C&D Materials (a) (in '000m³)	Impor (in '00 Rock	<i>3</i> ,	Inert Construction Waste Re- used (in '000m³)	Non-inert Construction Waste (b) (in '000m³)	Recyclable Materials (c) (in '000kg)	Chemical Wastes (in '000kg)
1 – 31 January 2020	0.583	0	1742.440	0	0.122	0	0

#### Notes:

- (a) Inert construction wastes include hard rock and large broken concrete, and materials disposed as public fill. Density assumption: 1.6 (kg/L) for public fill.
- (b) Non-inert construction wastes include general refuse disposed at landfill. Density assumption: 0.9 (kg/L) for general refuse.
- (c) Recyclable materials include metals, paper, cardboard, plastics and others.

#### 2.7 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

A summary of the Environmental Mitigation Implementation Schedule is presented in *Annex B*. The necessary mitigation measures were implemented properly for the Project.

## 2.8 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

The 24-hour TSP monitoring results and construction noise monitoring results complied with the Action and Limit Levels in the reporting period. Impact surface water quality monitoring could not be carried out for all the scheduled events during the reporting period due to insufficient flow.

Cumulative statistics on exceedances is provided in *Annex G*.

## 2.9 SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

There were no complaints, notification of summons or prosecution recorded in the reporting period.

Statistics on complaints, notifications of summons, successful prosecutions are summarised in *Annex G*.

#### 3 FUTURE KEY ISSUES

#### 3.1 CONSTRUCTION PROGRAMME FOR THE COMING MONTH

As informed by the Contractor, the major works for the Project in February 2020 will be:

- Site formation works at Area X1;
- Excavation and removal of unsuitable fill materials;
- Remaining site formation works at Area X1;
- Filling of perimeter bund for Cell 2X;
- Installation of settlement cells at Cell 2X;
- Construction of buttress wall;
- Construction of perimeter wall and plinths at LTP area;
- Building services and fitting-out works for bioplant;
- Installation of ammonia stripping plant and pipe work at LTP area;
- Installation of pips on pipe racks;
- Pavement works of LFG area;
- Building service & fitting-out works at new infrastructure buildings;
- Fitting-out works at Landfill Gas buildings;
- Construction of perimeter bund channel;
- Construction of groundwater pipe along eastern side from Cell 3X to 4X;
- Construction of superstructure at maintenance building;
- Installation of monitoring wells;
- Construction of pits and ducting for underground utilities;
- Construction of footing and superstructure of fire service tank room and water tank room;
- Enhancement of the external slope surface of perimeter bund of Cell 1X and 2X; and
- Installation of gas and leachate HDPE pipe.

#### 3.2 KEY ISSUES FOR THE COMING MONTH

Potential environmental impacts arising from the above upcoming construction activities in the next reporting period of February 2020 are mainly associated with dust emission from the exposed area and loading and uploading operation of dusty materials. The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

#### 3.3 MONITORING SCHEDULE FOR THE COMING MONTH

The tentative schedules for environmental monitoring in February 2020 are provided in *Annex H*.

#### 4 CONCLUSION AND RECOMMENDATION

This EM&A Report presents the findings of the EM&A activities undertaken during the period from 1 to 31 January 2020 in accordance with the updated EM&A Manual and the requirements of the Environmental Permit (*EP*-308/2008/B).

Air quality (24-hour TSP), noise and water quality (DO, pH and SS) monitoring were carried out in the reporting period. Results for air quality monitoring (24-hour TSP) complied with the Action and Limit Levels in the reporting period. No Action and Limit Levels exceedances were recorded for construction noise monitoring. Impact surface water quality monitoring could not be carried out for all the scheduled events during the reporting period due to insufficient flow.

Environmental site inspections were carried out during the reporting period. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site inspections.

There were no complaints, notification of summons or prosecution recorded in the reporting period.

The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

#### Annex A

## Work Programme

336	BS Path Activity Name	Dur Start Finish Total Predecessor Details Float	Successor Details	2018 Q2 Q3 Q4 Q1	2019 Q2 Q3 Q4 Q1 Q2	2020 Q3 Q4 Q1	2021 207 Q2 Q3 Q4 Q1 Q2	Q3 Q4 Q1 Q2 Q3
337 338 339								
338 339 340 341 342 343 344 345 346 347 348 349 350								
343 344 345								
345 346 347								
348 349 350								
351 352	SA2.5 Construction (Initial Works)	1153 12-Apr-18 07-Jun-21 705						
353 354 355	SA2.5.02 Advance Works & Site Establishment  SA2.5.02.01 Site Establishment & Mobilization  5.02.01 Site Mobilization for Parts X1 & X2	1148     12-Apr-18     02-Jun-21     35       333     12-Apr-18     10-Mar-19     820       30     31-Dec-18     29-Jan-19     820     11-1100: FS, 11-1200: FS	52-1300: FS, M 3. 1: FS, M 3. 2: FS					
356 357 358	5.02.01       52-1100       Site Mobilization for Parts X3, X4 & X5         5.02.01       52-1200       Temporary Office for Employer / ER / IC         5.02.01       52-1300       Hoarding and Fencing Works	30 12-Apr-18 11-May-18 1083 11-1300: FS, 11-1400: FS, 11-1500: FS 60 10-Oct-18 08-Dec-18 0 23-1300: FS 40 30-Jan-19 10-Mar-19 820 52-1000: FS, 52-1100: FS	52-1300: FS, M 3. 1: FF 11-1700: SS, M 3. 1: FS 32-1500: FS, M10. 1: FS -26, M10. 2: FS -13, M10. 3: FS					
359 360	SA2.5.02.02 Site Survey & Investigation Works for Parts X1 & X2  5.02.02 52-1400 Condition Survey	50 31-Dec-18 18-Feb-19 840 25 31-Dec-18 24-Jan-19 840 11-1100: FS, 11-1200: FS	52-1600: FS					
361 362	5.02.02 52-1500 Topographic Survey 5.02.02 52-1600 Site inspection, Review of Condition Survey Report	20 31-Dec-18 19-Jan-19 845 11-1100: FS, 11-1200: FS 25 25-Jan-19 18-Feb-19 840 52-1500: FS, 52-1400: FS	52-1600: FS 32-1500: FS					
363 364 365	SA2.5.02.03         Site Survey & Investigation Works for Parts X3, X4 & X5           5.02.03         52-1700         Condition Survey           5.02.03         52-1800         Topographic Survey	50         12-Apr-18         31-May-18         1103           25         12-Apr-18         06-May-18         1103         11-1300: FS, 11-1400: FS, 11-1500: FS           20         12-Apr-18         01-May-18         1108         11-1300: FS, 11-1400: FS, 11-1500: FS	52-1900: FS 52-1900: FS					
366 367 368	5.02.03 52-1900 Site inspection, Review of Condition Survey Report  SA2.5.02.04 Environmental Monitoring  5.02.04 52-2000 Installation of Monitoring Stations & Wells (GP & GW)	25 07-May-18 31-May-18 1103 52-1700: FS, 52-1800: FS  975 02-Oct-18 02-Jun-21 35  120 02-Oct-18 29-Jan-19 0 23-1600: FS	32-1500: FS 52-2200: SS 60					
369	5.02.04 52-2100 Installation of Monitoring Stations & Wells (GP & GW) on Buttress Wall 5.02.04 52-2200 Conduct Baseline Monitoring for Construction (one month)	120 02-Oct-18 29-Jan-19 0 23-1600: FS 30 01-Dec-18 30-Dec-18 0 52-2000: SS 60, 52-2100: SS 60	52-2200: SS 60 11-1100: FS					
371 372 373	5.02.04 52-2300 Conduct Baseline Monitoring for Operation (one year)  SA2.5.03 Civil Engineering Works  SA2.5.03.0 Buttress Wall	365 03-Jun-20 02-Jun-21 35 32-1500: FS -400, 53-4500: FS  748 13-Jan-19 29-Jan-21 834  475 02-Mar-19 18-Jun-20 83	12-1400: FS					
374 375	5.03.0         53-1000         Section adj. SENT           5.03.0         53-1100         Diversion of SENT Landfill Gas Pipe	300 13-Apr-19 06-Feb-20 96 11-1300: FS, 23-2500: FS, 53-3000: FS, 3 11-1400: FS 45 07-Feb-20 22-Mar-20 96 23-2500: FS, 53-1000: FS	1-1200: FS, 53-1100: FS, 53-1300: FS, 53-3100: FS, M 3. 5: FS -150, M 7: FS 53-1300: FS, 54-4000: FS, M 3. 3: FS	3.				
376	5.03.0       53-1200       Section at Cell 4         5.03.0       53-1300       Install Landfill Gas Pipe on Buttress Wall	400 02-Mar-19 04-Apr-20 83 11-1300: FS, 23-2500: FS, 53-3000: FS, 1 75 05-Apr-20 18-Jun-20 83 41-1500: FS, 53-1100: FS, 53-1200: FS, 5						
378 379	SA2.5.03.1 Landfill Cell 1  5.03.1 53-1400 Earth bund (Eastern)	503         13-Jan-19         29-May-20         214           90         04-Aug-19         01-Nov-19         9         11-1100: FS, 23-2500: FS, 53-4200: FS, 5	3-2800: FS 53-2000: FS, 53-2300: FS, 53-3400: FS, 63-1000: FS, 63-1100: FS, 63-1200: FS, 63-1300: FS, M 4. 2: FS					
380	5.03.1 53-1500 Earth bund (Southern)	90 26-Apr-19 24-Jul-19 314 11-1100: FS, 23-2500: FS, 53-2800: FS	53-2000: FS, 53-2200: FS, 53-2300: FS, 53-3400: FS, 53-3700: FS, 53-3800: FS					
381	5.03.1 53-1600 Earth bund (Western)  5.03.1 53-1700 Intercell bund (Cell 1/2)	90 13-Jan-19 12-Apr-19 417 11-1100: FS, 23-2500: FS 75 13-Jan-19 28-Mar-19 432 11-1100: FS, 23-2500: FS	53-1900: FS, 53-2000: FS, 53-2200: FS, 53-3800: FS 53-2000: FS					
383	5.03.1 53-1800 Site Formation 5.03.1 53-1900 Pump Station (PS#1X)	90 13-Jan-19 12-Apr-19 217 11-1100: FS, 23-2500: FS, 31-1300: FS 45 13-Apr-19 27-May-19 507 53-1800: FS, 53-1600: FS	53-1900: FS, 63-1100: FS, 63-1200: FS, 63-1300: FS, M 4. FS -45 53-2100: FS, 53-2200: FS	1:				
385	5.03.1 53-2000 Lining Works  5.03.1 53-2100 Protective Stone Laying & Leachate Collection Pipe	135 02-Nov-19* 15-Mar-20 214 41-1500: FS, 53-1400: FS, 53-1500: FS, 5 53-1700: FS  75 16-Mar-20 29-May-20 214 53-2000: FS, 41-1500: FS, 53-1900: FS	· · · · · · · · · · · · · · · · · · ·					
387	5.03.1 53-2200 Install Leachate Force Main  5.03.1 53-2300 Install Landfill Gas Pipe on earth bund	75 25-Jul-19 07-Oct-19 449 53-1500: FS, 53-1600: FS, 41-1500: FS, 5 55 02-Nov-19 26-Dec-19 258 41-1500: FS, 53-1400: FS, 53-1500: FS						
389	5.03.1 53-2400 Leachate Pipe Connection (Cell 1 to LTP)  SA2.5.03.4 Landfill Cell 4	30 09-Mar-20 07-Apr-20 266 23-2500: FS, 54-1000: SS 30 09-Jul-20 07-Aug-20 144	54-2800: FS					
391 392 393	5.03.4       53-2500       Provide Temporary Leachate Pipe on Cell 4 Area         SA2.5.03.5       Drainage - Surface Run-Off         5.03.5       53-2600       Construct Cut-Off Channel 12A	30 09-Jul-20 07-Aug-20 144 23-2500: FS, 63-2600: SS -90  740 16-Jan-19 24-Jan-21 839  60 16-Jan-19 16-Mar-19 9 11-1100: FS, 23-2800: FS	54-2800: FS, M 3. 3: FS 53-2700: FS					
394 395	5.03.5 53-2700 Connect Cut-Off Channel 12A to DP6 5.03.5 53-2800 Diversion from Existing Trapezoidal Channel into Channel 12A	20 17-Mar-19 05-Apr-19 9 53-2600: FS, 31-1400: FS, 23-1900: FS 20 06-Apr-19 25-Apr-19 9 53-2700: FS	53-2800: FS 53-1400: FS, 53-1500: FS, 53-2900: FS, 63-1000: FS, 63-1900: FS, M 3. 3: FS					
396 397	5.03.5 53-2900 Removal of Existing Trapezoidal Channel along Eastern Bund 5.03.5 53-3000 Cut-Off Channel C4 Diversion to Cut-Off Channel 17-2	30 26-Apr-19 25-May-19 9 53-2800: FS 45 16-Jan-19 01-Mar-19 83 11-1300: FS, 23-2800: FS	53-4200: FS 53-1000: FS, 53-1200: FS					
398 399 400	5.03.5 53-3100 Cut-Off Channel X5 on Buttress Wall, Cell 4, Cell 3 5.03.5 53-3200 Temporary Diversion Cut-Off Channel X5 to 12A 5.03.5 53-3300 Culvert X5 (5m long) & Perm Connection of Cut-Off Channel X5	90 05-Apr-20 03-Jul-20 289 53-1000: FS, 53-1200: FS 20 04-Jul-20 23-Jul-20 289 53-3100: FS, 23-1900: FS 30 26-Dec-20 24-Jan-21 134 53-4100: FF, 63-1900: FS, 53-3200: FS	53-3200: FS 53-3300: FS, M 3. 4: FS 32-1500: FS					
401	5.03.5 53-3400 Construct Perimeter Channel X6 on Eastern Bund & Southern Bund of Cell 1 5.03.5 53-3500 Construct Perimeter Channel X6 on Eastern Bund of Cell 2	50 02-Nov-19 21-Dec-19 249 53-1400: FS, 53-1500: FS 50 20-Feb-20 09-Apr-20 189 63-1000: FS, 53-3400: FS	53-3500: FS 53-3600: FS					
403 404 405	5.03.5 53-3600 Construct Perimeter Channel X6 Eastern Bund of Cell 3  5.03.5 53-3700 Culvert X6 (25m long) at Cell 1 Southern Bund  5.03.5 53-3800 Perimeter Channel (X9B) at Cell 1 Southern & Western Bund	50 09-Jun-20 28-Jul-20 129 63-1900: FS, 53-3500: FS 75 25-Jul-19 07-Oct-19 1314 53-1500: FS 45 25-Jul-19 07-Sep-19 1344 53-1500: FS, 53-1600: FS	53-3900: FS					
406	5.03.5 53-3900 Drop Inlet & Culvert (X9) - 21m long  5.03.5 53-4000 Sediment Trap (ST)	180 29-Jul-20 24-Jan-21 129 11-1100: FS, 23-1900: FS, 53-3600: FS  180 29-Jul-20 24-Jan-21 129 11-1100: FS, 23-1900: FS, 11-1200: FS, 5	53-4000: FF, 53-4100: FF, 53-6000: FS, M 9. 1: FS -90, M 9 2: FS 3-3900: FF 53-6000: FS, M 9. 3: FS -90, M 9. 4: FS					
408	5.03.5 53-4100 Dual Culvert 74m long (connect to DP4)	180 29-Jul-20 24-Jan-21 129 11-1100: FS, 11-1200: FS, 23-1900: FS, 5						
409	SA2.5.03.6 Drainage - Ground Water  5.03.6 53-4200 Construct Groundwater Collection Pipe along Cells X1 & X2 Eastern Bund  5.03.6 53-4300 Construct Groundwater Collection Pipe along Cell X3 Eastern Bund	200 26-May-19 11-Dec-19 209 70 26-May-19 03-Aug-19 9 11-1100: FS, 23-1600: FS, 53-2900: FS	53-1400: FS, 53-4300: FS, 63-1000: FS, 63-1900: FS					
411 412 413	5.03.6 53-4300 Construct Groundwater Collection Pipe along Cell X3 Eastern Bund 5.03.6 53-4400 Construct Groundwater Collection Pipe along Intercell Bund X2/X3 5.03.6 53-4500 Construct Manhole MH-X1	50 04-Aug-19 22-Sep-19 159 53-4200: FS 50 23-Sep-19 11-Nov-19 209 53-4300: FS 30 12-Nov-19 11-Dec-19 209 53-4400: FS	53-4400: FS, 63-1900: FS 53-4500: FS, 63-1200: FS 52-2300: FS, M 9. 5: FS					
414 415 416	SA2.5.03.7 Utilities - Distribution within New Infrastructure Area  5.03.7 53-4600 Power Supply HV Works (Transformer & HV switchgear)  5.03.7 53-4700 Power Distribution, LV Power Supply Works	391 11-Aug-19 04-Sep-20 276 5 30-Jun-20 04-Jul-20 0 54-3000: FS 2 05-Jul-20 06-Jul-20 0 54-3100: FS, 12-1200: FS	12-1200: FS 12-1000: FS					
417	5.03.7 53-4800 Sewerage (Collection to LTP)	60 07-Jul-20 04-Sep-20 271 54-1000: FS, 54-3100: FS, 54-3300: FS, 54	1-4100: FS 12-1100: FS, 53-6100: FS					
419	5.03.7       53-4900       Sewerage (Discharge to Site Boundary)         5.03.7       53-5000       Lighting Provision         5.03.7       53-5100       Fire Services	60 07-Jul-20 04-Sep-20 271 54-1000: FS, 54-4100: FS, 54-4600: FS 30 07-Jul-20 05-Aug-20 6 54-1000: FS, 54-4100: FS, 54-4600: FS 115 12-Mar-20 04-Jul-20 2 53-6800: FS	12-1100: FS, 53-6100: FS 12-1100: FS, 32-2100: FS 12-1000: FS					
421	5.03.7 53-5200 Water Supply (Fresh & Salt) 5.03.7 53-5300 Telecom & Network	115 12-Mar-20 04-Jul-20 338 53-6600: FS, 53-6700: FS  45 11-Aug-19 24-Sep-19 622 53-6400: FS	12-1100: FS 12-1100: FS					
423 424 425 426	5.03.7   53-5400   Gas Network (LFG to LTP)  SA2.5.03.8 Utilities - Works Associated with Utilities Undertakers  SA2.5.03.8.U1   CLP   5.03.8.U1   53-5500   Excavate Trench for CLP Cable	15 22-Jun-20 06-Jul-20 176 54-1000: FF  703 27-Feb-19 29-Jan-21 129  459 27-Feb-19 30-May-20 43  100 13-May-19 20-Aug-19 194 23-2900: FS	54-2800: FS 53-5800: FS 54-1000: SS 54-4100: SS 54-4600: SS M10			T		
426	5.03.8.U1 53-5500 Excavate Trench for CLP Cable  5.03.8.U1 53-5600 Backfill Trench after CLP Cable Laying	100 13-May-19 20-Aug-19 194 23-2900: FS  30 01-May-20 30-May-20 43 53-5800: FS	53-5800: FS, 54-1000: SS, 54-4100: SS, 54-4600: SS, M10. 1: FS -60, M10. 2: FS -30, M10. 3: FS 54-1000: FF, 54-4100: FF, 54-4600: FF					
428	5.03.8.U1 53-5600 Backfill Trench after CLP Cable Laying  5.03.8.U1 53-5700 CLP Cable Laying (from CLP Substation to Site Boundary)  5.03.8.U1 53-5800 CLP Cable Laying (from Site Boundary to HV Switchroom)	200 27-Feb-19 14-Sep-19 229 32-2400: FS 60 02-Mar-20 30-Apr-20 0 53-5500: FS, 54-2900: FS, 32-2400: FS, 55	54-3000: FS					
430	5.03.8.U1 53-5900 CLP HV associated equipment installation  SA2.5.03.8.U2 DSD  5.03.8.U2 DSD  Connection to Starm Projections	120 18-Dec-19 15-Apr-20 0 54-2900: FS, 32-2400: FS  147 05-Sep-20 29-Jan-21 129	53-5800: FF 15					
432 433 434	5.03.8.U2 53-6000 Connection to Storm Drain System 5.03.8.U2 53-6100 Connection to Foul Drain System  SA2.5.03.8.U3 Telecom	5 25-Jan-21 29-Jan-21 129 53-4100: FS, 53-4000: FS, 53-3900: FS 5 05-Sep-20 09-Sep-20 271 53-4800: FS, 53-4900: FS 100 13-May-19 20-Aug-19 327	32-1500: FS 32-1500: FS					
434	5.03.8.U3 53-6200 Excavate Trench for PCCW	60 13-May-19 11-Jul-19 307 23-2900: FS	53-6400: FS, 54-1000: SS, 54-4100: SS, 54-4600: SS, M10. 1: FS -40, M10. 2: FS -20, M10. 3: FS					
436 437 438	5.03.8.U3 53-6300 Backfill Trench after PCCW Cable Laying 5.03.8.U3 53-6400 Laying Cables & Connection  SA2.5.03.8.U4 WSD	10 11-Aug-19 20-Aug-19 327 53-6400: FS 30 12-Jul-19 10-Aug-19 327 53-6200: FS 304 13-May-19 11-Mar-20 338	54-1000: FF, 54-4100: FF, 54-4600: FF 53-5300: FS, 53-6300: FS					
438 439 440	SA2.5.03.8.U4 WSD  5.03.8.U4 53-6500 Install Watermain & Piping for Water Supplies  5.03.8.U4 53-6600 Connection for Fresh Water & Meter Installation	304 13-May-19 11-Mar-20 338 60 13-May-19 11-Jul-19 216 23-2900: FS 30 11-Feb-20 11-Mar-20 338 53-6500: FS, 32-2300: FS	53-6600: FS, 53-6700: FS, 53-6800: FS, 53-6900: FS 53-5200: FS					
441	5.03.8.U4 53-6700 Connection for Salt Water 5.03.8.U4 53-6800 Connection for Fire Services	30 11-Feb-20 11-Mar-20 338 53-6500: FS, 32-2300: FS 30 11-Feb-20 11-Mar-20 2 53-6500: FS, 32-2300: FS	53-5200: FS 53-5100: FS					
443 444 445	5.03.8.U4 53-6900 Connection for Cooling Tower & Meter Installation  SA2.5.03.8.U5 HyD Lighting  5.03.8.U5 53-7000 Installation of Public Street Lighting / Handover	30 11-Feb-20 11-Mar-20 117 53-6500: FS, 32-2300: FS  120 07-Jul-20 03-Nov-20 216  120 07-Jul-20 03-Nov-20 216 54-4100: FS, 54-4600: FS, 54-1000: FS	54-2700: FS, 54-3900: FS 32-1500: FS					
446 447 448	SA2.5.04 Building Construction, incl. E&M and System Installation, and T&C SA2.5.04.A Part X1 Area A  5.04.A 54-1000 General Area & Access Road	890 31-Dec-18 07-Jun-21 0 554 31-Dec-18 06-Jul-20 36 120 09-Mar-20 06-Jul-20 6 23-1300: FS, 53-5500: SS, 53-5600: FF, 53						
449	5.04.A 54-1100 Carpark & Supporting Area	53-6300: FF, 12-1000: FF, 11-1100: FS, 54 54-1800: FF 60 31-Dec-18 28-Feb-19 64 23-1300: FS, 11-1100: FS	1-1100: FF, 53-5000: FS, 53-5400: FF, 53-7000: FS, 68-1700: FS 32-1500: FS, M 5.11: FS -30, M 5.12: FS, 54-1000: FF, 54-1800: FS					
450	5.04.A 54-1200 Diesel Fuel Tanks 5.04.A 54-1300 EPD Building	60 08-May-20 06-Jul-20 36 23-1300: FS, 23-5200: FS, 12-1000: FF, 1 270 30-Apr-19 24-Jan-20 44 23-1300: FS, 23-5200: FS, 11-1100: FS, 5-						
452	5.04.A 54-1400 Fire Service Tank	270 29-Jun-19 24-Mar-20 44 23-1300: FS, 23-5200: FS, 11-1100: FS, 5						
453	5.04.A 54-1500 GVL Building 5.04.A 54-1600 Laboratory Building	300 31-Dec-18 26-Oct-19 44 23-1300: FS, 23-5200: FS, 11-1100: FS 270 28-Aug-19 23-May-20 44 23-1300: FS, 23-5200: FS, 11-1100: FS, 54	32-2100: FS, M 5. 1: SF 30, M 5. 2: SF 150, M 5. 3: FS, 54-1700: SS 60  32-2100: FS, M 5. 6: FS -135, M 5. 7: FS, 12-1000: FS, 32-2200: FS					
455	5.04.A 54-1700 Maintenance Building & Area 5.04.A 54-1800 Storage Facility & Area	270 01-Mar-19 25-Nov-19 44 23-1300: FS, 23-5200: FS, 11-1100: FS, 54-60 01-Mar-19 29-Apr-19 64 23-1300: FS, 11-1100: FS, 54-1100: FS						
457	5.04.A 54-1900 Waste Oil Tanks	90 08-Apr-20 06-Jul-20 36 23-1300: FS, 23-5200: FS, 12-1000: FF, 1				<del></del>		
459	5.04.A 54-2000 Water Service House  SA2.5.04.B Part X1 Area B  SA2.5.04.B.1 BioPlant Building	60 30-Apr-19 28-Jun-19 64 23-1300: FS, 23-5200: FS, 11-1100: FS, 54  890 31-Dec-18 07-Jun-21 0  330 17-Jan-19 12-Dec-19 243	4-1800: FS 32-2100: FS, M 5.10: FS, 12-1000: FS, 54-4400: FS					
461	SA2.5.04.B.1 BioPlant Building  5.04.B.1 54-2100 LTP BioPlant Building  SA2.5.04.B.2 Leachate Treatment Plant	330 17-Jan-19 12-Dec-19 243 330 17-Jan-19 12-Dec-19 243 23-1300: FS, 23-5200: FS, 23-3200: FS, 1 31-1000: FS 589 31-Dec-18 10-Aug-20 21	1-1100: FS, 32-2200: FS, M 6. 2: FS -165, M 6. 3: FS					
463	5.04.B.2 54-2200 Main Plant Area included Civil works	274 31-Dec-18 30-Sep-19 0 23-1300: FS, 23-3200: FS, 11-1100: FS	54-2300: FS, 54-2400: FS, 54-2500: FS, 64-1100: FS, M 6. SF 30, M 6. 4: FS -137, M 6. 5: FS					
464	5.04.B.2 54-2300 MEP Installation 5.04.B.2 54-2400 SBR Tanks	220 01-Oct-19 07-May-20 0 41-2100: FS, 41-1800: FS, 22-2100: FS, 54-11-1100: FS 100 01-Oct-19 08-Jan-20 236 41-2400: FS, 54-2200: FS	M 6. 9: FS, 32-2200: FS 54-2600: FS, M 6. 6: FS					
466 467 468	5.04.B.2 54-2500 Ammonia Stripper  SA2.5.04.B.3 LTP - Test & Commission  5.04.B.3 54-2600 Dry testing	315 01-Oct-19 10-Aug-20 21 41-3000: FS, 54-2200: FS  301 11-Aug-20 07-Jun-21 0  45 11-Aug-20 24-Sep-20 21 54-2300: FS, 54-2400: FS, 54-2500: FS	54-2600: FS, M 6. 8: FS -150, M 6. 9: FS 23-6600: FS -150, 23-6900: SS, 54-2700: FS, M11. 1: FS					
469	5.04.B.3 54-2700 Wet testing 5.04.B.3 54-2800 Operational testing	75 25-Sep-20 08-Dec-20 21 54-2600: FS, 12-1200: FS, 53-6900: FS, 3 23-6800: FS  160 30-Dec-20 07-Jun-21 0 54-2700: FS, 53-2400: FS, 53-2500: FS, 53-						
471	SA2.5.04.C Part X1 Area C	53-2200: FS, 63-1700: FS, 63-2600: FS, 53-24000: FS, 63-2600: FS, 53-2600: FS, 53-2						
472	SA2.5.04.C.1 LFG - Power Supply Building  5.04.C.1 54-2900 LFG Building (with Transformer Room)	530 17-Jan-19 29-Jun-20 5 335 17-Jan-19 17-Dec-19 0 23-1300: FS, 23-3500: FS, 11-1100: FS, 3	FS	6:				
474	5.04.C.1 54-3000 Transformer & HV Swtichgear Installation  5.04.C.1 54-3100 MEP Installation, with T&C	60 01-May-20 29-Jun-20 0 54-2900: FS, 41-1200: FS, 53-5800: FS, 53 75 18-Dec-19 01-Mar-20 125 54-2900: FS	3-5700: FS 53-4600: FS, M 7. 4: FS -30, M 7. 5: FS, M 7. 5: FF 32-1400: FS, 32-2100: FS, 53-4700: FS, 53-4800: FS, M 7. FS -30, M 7. 5: FS	4:				
476	SA2.5.04.C.2 LFG Treatment Plant  5.04.C.2 54-3200 Main Plant Area included Civil Works	554         31-Dec-18         06-Jul-20         0           384         31-Dec-18         18-Jan-20         0         23-3500: FS, 11-1100: FS	54-3300: FS, 54-3400: FS, 54-3500: FS, 54-3600: FS, 54-3700: FS, 54-3800: FS, M 7. 1: SF 30, M 7. 2: FS -200, N	л				
478	5.04.C.2 54-3300 MEP Installation  5.04.C.2 54-3400 GHS600 Blower 601 A&B Relocation	170 19-Jan-20 06-Jul-20 0 54-3200: FS, 12-1000: FF	7. 3: FS 32-2000: FS, 53-4800: FS, 54-3900: FS, M 7. 4: FS -80, M 7 5: FS			<del>-</del>		
480	5.04.C.2 54-3400 GHS600 Blower 601 A&B Relocation 5.04.C.2 54-3500 Pre-treatment 5.04.C.2 54-3600 Flares (incl. PLC control, interlink to Towngas PF & LTP)	15 19-Jan-20 02-Feb-20 155 23-5800: FS, 54-3200: FS 60 19-Jan-20 18-Mar-20 110 41-3900: FS, 54-3200: FS 125 19-Jan-20 22-May-20 45 41-3300: FS, 54-3200: FS	54-3900: FS, M 7. 4: FS -8, M 7. 5: FS 54-3900: FS, M 7. 4: FS -30, M 7. 5: FS 54-3900: FS, M 7. 4: FS -60, M 7. 5: FS					
482	5.04.C.2 54-3700 LFG Engine (incl. on-grid protection, PLC control, turning) 5.04.C.2 54-3800 Cooling System	110 21-Feb-20 09-Jun-20 27 41-3600: FS, 54-3200: FS 45 19-Jan-20 03-Mar-20 125 22-1500: FS, 54-3200: FS	54-3900: FS, M 7. 4: FS -60 54-3900: FS, M 7. 4: FS -25, M 7. 5: FS					
484	SA2.5.04.C.3         LFG - Test & Commission           5.04.C.3         54-3900         MEP Testing	176 07-Jul-20 29-Dec-20 0 65 07-Jul-20 09-Sep-20 0 54-3400: FS, 54-3500: FS, 54-3600: FS, 55-54-3800: FS, 12-1200: FS, 53-6900: FS, 33-54-3300: FS		0,				
486	5.04.C.3 54-4000 Operational Testing	111 10-Sep-20 29-Dec-20 0 53-1300: FS, 63-2700: FS, 63-1800: FS, 55-1100: FS, 54-3900: FS, 23-7200: FS	32-2300: FS, 32-1500: FS, 54-2800: FS, 63-4800: FF, 63-4900: FS, 63-4600: FS, M11. 3: FS, M11. 4: FS					
487	SA2.5.04.D Part X1 Area D  5.04.D 54-4100 General Area & Access Road	374 29-Jun-19 06-Jul-20 6 120 09-Mar-20 06-Jul-20 6 23-1300: FS, 53-5500: SS, 53-5600: FF, 53-6300: FF, 12-1000: FF, 11-1100: FS	32-2100: FS, 53-4800: FS, 53-4900: FS, 53-5000: FS, 53-7000: FS, M 8. 5: FS			<del>- </del>		
489	5.04.D 54-4200 VWF Building 5.04.D 54-4300 Weighbridge	120 28-Oct-19 24-Feb-20 63 23-1300: FS, 23-5200: FS, 41-4500: FS, 1 54-4300: SS 60  75 29-Aug-19 11-Nov-19 63 41-4200: FS, 23-1300: FS, 23-5200: FS, 1	FS, 54-4500: SS 60	0:				
491	5.04.D 54-4400 Weighmaster House	54-4400: SS 60 120 29-Jun-19 26-Oct-19 64 23-1300: FS, 23-5200: FS, 11-1100: FS, 54	4-2000: FS 32-2100: FS, M 8. 1: FS, 12-1000: FS, 54-4300: SS 60					
492	5.04.D 54-4500 Wheel Wash Bath  SA2.5.04.E Part X1 Area E & Part X2	75 27-Dec-19 10-Mar-20 63 23-1300: FS, 23-5200: FS, 41-4500: FS, 1 54-4200: SS 60  163 26-Jan-20 06-Jul-20 6						
494	5.04.E 54-4600 General Area & Access Road 5.04.E 54-4700 Guard House & Entrance Gate	120 09-Mar-20 06-Jul-20 6 53-5500: SS, 53-5600: FF, 53-6200: SS, 5 12-1000: FF, 11-1100: FS, 11-1200: FS  100 26-Jan-20 04-May-20 63 23-1300: FS, 23-5200: FS, 11-1100: FS, 11						
496	5.04.E   54-4700   Guard House & Entrance Gate  SA2.5.08 Landscape Works - Advance Screen Planting in CWB Country Park  SA2.5.08.N Area N	100 26-Jan-20 04-May-20 63 23-1300: FS, 23-5200: FS, 11-1100: FS, 1' 54-4500: SS 30  270 01-Apr-19 26-Dec-19 529  270 01-Apr-19 26-Dec-19 529	, 02 2 100. 1 0, IVI 0. 2. F3, 12-1000: F8					
498	5.08.N 58-1000 Advance Screen Planting  5.08.N 58-1100 Establishment of Screen Planting	90 01-Apr-19* 29-Jun-19 529 23-7900: FS, 31-1100: FS, 11-1500: FS 270 01-Apr-19* 26-Dec-19 529 58-1000: SS, 14-1800: FS	14-1800: SS -60, 58-1100: SS, 68-1600: SS 30, M 3. 2: FS 32-1500: FS					
500 501	SA2.5.08.S Area S           5.08.S         58-1200 Advance Screen Planting	270 01-Apr-19 26-Dec-19 529 90 01-Apr-19* 29-Jun-19 529 23-7900: FS, 31-1100: FS, 11-1500: FS	58-1300: SS, M 3. 2: FS					
502 503 504	5.08.S 58-1300 Establishment of Screen Planting  SA2.6 Construction (Remaining Works)  SA2.6.02 Advance Works	270 01-Apr-19* 26-Dec-19 529 58-1200: SS  1474 01-Apr-19 13-Apr-23 30  80 09-Jul-21 26-Sep-21 339	32-1500: FS					
505 506	SA2.6.02.9 Demolition of SENT Infrastructure Area  6.02.9 62-1000 Existing SENT General Infrastructure Facility & Building	80 09-Jul-21 26-Sep-21 339 60 09-Jul-21 06-Sep-21 239 32-2100: FS, 12-1300: FS	23-2000: SS -90, 63-2800: FS, 63-2900: FS, 63-3000: FS, 63-4300: FS, M12. 4: FS -30, M12. 5: FS					
507	6.02.9 62-1100 Existing SENT LTP 6.02.9 62-1200 Existing SENT LFG	60 29-Jul-21 26-Sep-21 339 32-1500: FS, 12-1300: FS, 23-2200: FS 60 29-Jul-21 26-Sep-21 339 32-1500: FS, 12-1300: FS, 23-2200: FS	63-3000: FS, 63-4500: FS, M12. 4: FS -30, M12. 5: FS 63-3000: FS, 63-4500: FS, M12. 4: FS -30, M12. 5: FS					
	Remaining Work			Territories Land Fill Extension (SA2-SENT			Date Revision	Checked Approved
	Critical Remaining Work	Page: 3 of 4	Sount-East New	Baseline Programme		GREEN VALLEY LANDFILL, LIMITED	11-May-18 SENTX-GVL-W-PB-ZZ-0001 Rev. I01 20-Jul-18 SENTX-GVL-W-PB-ZZ-0001 Rev. I02 (Deta	
•	◆ Milestone							

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	BS Path	Activ ID	Activity Name		Dur	Start		Total Predecessor Details Float	Success or Details
509			Engineering Works dfill Cell 2				13-Apr-23 23-Jan-21		
511	l		1000 Earth bund (Eastern)					9 11-1100: FS, 23-2500: FS, 53-4200: FS, 53-1400: FS,	
								53-2800: FS	63-2000: FS, 63-2100: FS, 63-2200: FS, M12. 1: FS -50, M12. 2: FS, 63-1100: FS
512	6.03.2	63-	1100 Earth bund (Western)		110	20-Feb-20	08-Jun-20	84 11-1100: FS, 23-2500: FS, 53-1800: FS, 53-1400: FS,	63-1400: FS, 63-1500: FS, 63-1700: FS, 63-3500: FS,
540								63-1000: FS	63-3600: FS, 63-1200: FS
513	6.03.2	63-1	1200 Intercell bund (Cell 2/3)		90	09-Jun-20	06-Sep-20	734 11-1100: FS, 23-2500: FS, 53-1800: FS, 53-1400: FS, 53-4400: FS, 63-1100: FS	63-1500: FS
514	6.03.2	63-1	1300 Site Formation		75	02-Nov-19	15-Jan-20	14 11-1100: FS, 23-2500: FS, 53-1800: FS, 53-1400: FS	63-1400: FS, 63-4200: FS
515	6.03.2	63-	1400 Pump Station (PS#2X)		45	09-Jun-20	23-Jul-20	84 63-1300: FS, 63-1100: FS	63-1600: FS, 63-1700: FS
516	6.03.2	63-′	1500 Lining Works		90	01-Oct-20*	29-Dec-20	710 41-1500: FS, 63-1000: FS, 63-1100: FS, 63-1200: FS	63-1600: FS, M12. 3: FS, 63-2400: FS
517	6.03.2	63-	1600 Protective Stone Laying & Leachate Collecti	n Pipe	25	30-Dec-20	23-Jan-21	810 63-1500: FS, 41-1500: FS, 63-1400: FS	32-1600: FS, M12. 3: FS
518			1700 Install Leachate Force Main					84 63-1100: FS, 41-1500: FS, 63-1400: FS	54-2800: FS, M12. 3: FS
519	6.03.2	63-′	1800 Install Landfill Gas Pipe on earth bund		35	20-Feb-20	25-Mar-20	168 41-1500: FS, 63-1000: FS	54-4000: FS, M12. 3: FS
520			dfill Cell 3				02-Feb-22		50 2000 FO 50 2000 FO 60 0400 FO 60 0700 FO M40 A
521	6.03.3	63-1	1900 Earth bund (Eastern)		110	20-Feb-20	08-Jun-20	9 11-1100: FS, 53-4200: FS, 63-1000: FS, 53-4300: FS, 53-2800: FS, 63-4200: FS	53-3300: FS, 53-3600: FS, 63-2400: FS, 63-2700: FS, M12. 1: FS -50, M12. 2: FS, 63-2000: FS -45, 63-2200: FS
522	6.03.3	62	2000 Earth bund (Western)		110	25 Apr 20	12 Aug 20	19	63-2300: FS, 63-2400: FS, 63-2600: FS, 63-3700: FS.
	6.03.3	03-2	2000 Earth bund (Western)		110	25-Apr-20	12-Aug-20	19 11-1100: F5, 63-1000: F5, 63-1900: F5 -45	63-2300: FS, 63-2400: FS, 63-2600: FS, 63-3700: FS, 63-2100: FS -45
523	6.03.3	63-7	2100 Intercell bund (Cell 3/4)		105	29-Jun-20	11-Oct-20	789 11-1100: FS, 63-1000: FS, 63-4200: FS, 63-2000: FS	45 63-2400: FS
524	6.03.3	63-	2200 Site Formation		75	09-Jun-20	22-Aug-20	9 11-1100: FS, 63-1000: FS, 63-1900: FS	63-2300: FS
525	6.03.3	63-	2300 Pump Station (PS#3X)		45	23-Aug-20	06-Oct-20	9 63-2200: FS, 63-2000: FS	63-2500: FS, 63-2600: FS
526	6.03.3	63-1	2400 Lining Works		100	01-Oct-21*	08-Jan-22	435 41-1500: FS, 63-1900: FS, 63-2000: FS, 63-2100: FS,	63-2500: FS, M12. 3: FS
527	6.03.3	63.	2500 Protective Stone Laying & Leachate Collecti	n Pina	25	09-1an-22	02-Feb-22	63-1500: FS 435 63-2400: FS, 41-1500: FS, 63-2300: FS	32-1700: FS, M12. 3: FS
528			2600 Install Leachate Force Main					9 63-2000: FS, 41-1500: FS, 63-2300: FS	53-2500: SS -90, 54-2800: FS, M12. 3: FS
529			2700 Install Landfill Gas Pipe on earth bund					58 41-1500: FS, 63-1900: FS	54-4000: FS, M12. 3: FS
530	SA2.6.0	3.4 Land	dfill Cell 4		584	07-Sep-21	13-Apr-23	30	
531			2800 Remaining Portion of Buttress Wall			·		494 62-1000: FS	
532	6.03.4	63-2	2900 Earth bund (Western) incl. MSE Wall		120	07-Sep-21	04-Jan-22	239 62-1000: FS	63-3000: FS, 63-3100: FS, 63-3200: FS, 63-3400: FS, 63-3800: FS, 63-3900: FS, 63-4100: SS -90, M 9. 6: FS -60,
									M 9. 7: FS -30, M 9. 8: FS
533	6.03.4	63-	3000 Site Formation		120	05-Jan-22	04-May-22	239 62-1000: FS, 62-1100: FS, 62-1200: FS, 63-2900: FS,	63-3100: FS
F0.1								63-4100: FS	
534			3100 Pump Station (PS#4X)					239 63-3000: FS, 63-2900: FS	63-3300: FS, 63-3400: FS 63-3300: FS, M12. 6: FS
536			3200 Lining Works 3300 Protective Stone Laying & Leachate Collecti	n Dina				0 41-1500: FS, 63-2900: FS 0 41-1500: FS, 63-3200: FS, 63-3100: FS	12-1900: FS, 32-1800: FS, M12. 6: FS
537			3400 Install Leachate Force Main & Remove Tem	·				269 41-1500: FS, 63-2900: FS, 63-3100: FS	12-1900: FS, 32-1800: FS, M12. 6: FS
538	SA2.6.0	3.5 Drain	nage - Surface Run-Off				03-Feb-22		
539			3500 Perimeter Channel (X9A) at Cell 2 Western					1054 63-1100: FS	12-1900: FS
540			3600 Perimeter Channel (X10A) at Cell 2 Western					1029 63-1100: FS	63-4000: FS
541			3700 Perimeter Channel (X10A) at Cell 3 Western					964 63-2000: FS	63-4000: FS
542			3800 Perimeter Channel (X10A) at Cell 4 Western 3900 Perimeter Channel (X10C) at Cell 4 Western					464 63-2900: FS	63-4000: FS 63-4000: FS
544			4000 Connection to Existing DP3	Buna				469 63-2900: FS 464 63-3900: FS, 63-3600: FS, 63-3700: FS, 63-3800: FS	63-4000: FS 12-1900: FS
344			-						
545			4100 Remove Cut-Off Channel C-7 at bottom of E					419 63-2900: SS -90	63-3000: FS
546			Temporary Channel (X7T) at SENT Infrastru	ture Area				14 63-1300: FS	63-1900: FS, 63-2100: FS
547			nage - Ground Water 4300 Construct Temporary Channel (TC-1), from	IH-1 to Existina UC-825			30-Nov-21 26-Oct-21	529 23-1900: FS, 11-1300: FS, 62-1000: FS	63-4400: FS
549			4400 Divert GW at MH-1 to TC-1					529 63-4300: FS	63-4500: FS, M 9. 9: FS
550	6.03.6	63-/	4500 Reconnection of GWCP across Cell 4		30	01-Nov-21	30-Nov-21	529 62-1100: FS, 62-1200: FS, 63-4400: FS	12-1900: FS
551	l ,——		ties - Works Associated with Utilities Undertak	ers .			27-Jul-21		
552 553		. <mark>03.8.U1 C</mark> 3.U1 63-4	CLP 4600 LFG Generator On-grid Testing				27-Jul-21 27-Jun-21	655   32-2500: FS, 12-1200: FS, 54-4000: FS	63-4700: FS
554			4700 LFG Generator On-grid Inspection & Verify					655 63.4600: FS	12-1900: FS
555	SA2.6.	.03.8.U6 T	TownGas		55	15-Nov-20	08-Jan-21	855	
556			4800 Laying Gas Mains (from LFG to Town Gas F	=)				855 54-4000: FF	63-4900: FS
557 558			4900 Gas Meter Relocation & Connection at LFG					855 63.4800: FS, 54-4000: FS	12-1900: FS
558			ing & E&M Works X1 Area C				22-Jul-21 22-Jul-21		
560	SA2.6.	04.C.02 L	LFG Treatment Plant		661	01-Oct-19	22-Jul-21	660	
561			1000 GHS600 Blower 601 C Relocation					660 32-1500: FS	12-1900: FS
562			1100 Absorption Chiller (Optional)					1231 54-2200: FS	12-1900: FS
563			scape Works T Area - Tree Removal & Transplanting				03-Dec-20 26-Nov-19		
	J	3.1 SEN	1000 Access trees condition and select for transp	inting				1264 14-1300: FS	68-1100: FS, 68-1200: FS, 68-1400: FS
565	6.08.1		Access trees condition and selection transp			04.14 40		1264 68-1000: FS	68-1200: SS
565		68-1	1100 Prepare new site to receive trees			•			1
565 566 567	6.08.1 6.08.1	68-1 68-1 68-1	1100 Prepare new site to receive trees 1200 Transplant selected trees		120	01-May-19	28-Aug-19	1264 68-1000: FS, 68-1100: SS	68-1300: FS
565 566 567 568	6.08.1 6.08.1 6.08.1	68-1 68-1 68-1	1100 Prepare new site to receive trees 1200 Transplant selected trees 1300 Prune trees prior to removal from Cell 4		120 90	01-May-19 29-Aug-19	28-Aug-19 26-Nov-19	1264 68-1000: FS, 68-1100: SS 1264 68-1200: FS	12-1900: FS
565 566 567 568 569	6.08.1 6.08.1 6.08.1 6.08.1	68-1 68-1 68-1 68-1	1100 Prepare new site to receive trees 1200 Transplant selected trees 1300 Prune trees prior to removal from Cell 4 1400 Tree Felling - Part X3		120 90 90	01-May-19 29-Aug-19 01-May-19	28-Aug-19 26-Nov-19 29-Jul-19	1264 68-1000: FS, 68-1100: SS 1264 68-1200: FS 1384 23-8200: FS, 31-1600: FS, 68-1000: FS	
565 566 567 568 569 570	6.08.1 6.08.1 6.08.1 6.08.1 SA2.6.0	68-1 68-1 68-1 68-1 68-2 <b>SENT</b>	1100 Prepare new site to receive trees 1200 Transplant selected trees 1300 Prune trees prior to removal from Cell 4 1400 Tree Felling - Part X3  TX Area - Trial Nursery & Tree Planting		90 90 583	01-May-19 29-Aug-19 01-May-19	28-Aug-19 26-Nov-19 29-Jul-19 03-Dec-20	1264 68-1000: FS, 68-1100: SS 1264 68-1200: FS 1384 23-8200: FS, 31-1600: FS, 68-1000: FS	12-1900: FS 12-1900: FS
565 566 567 568 569 570 571	6.08.1 6.08.1 6.08.1 6.08.1 SA2.6.0 6.08.2	68-1 68-1 68-1 68-1 68-2 <b>SENT</b> 68-1	1100 Prepare new site to receive trees 1200 Transplant selected trees 1300 Prune trees prior to removal from Cell 4 1400 Tree Felling - Part X3		90 90 583 300	01-May-19 29-Aug-19 01-May-19 01-May-19 01-May-19	28-Aug-19 26-Nov-19 29-Jul-19 03-Dec-20 24-Feb-20	1264 68-1000: FS, 68-1100: SS 1264 68-1200: FS 1384 23-8200: FS, 31-1600: FS, 68-1000: FS	12-1900: FS

#### Annex B

## Environmental Mitigation Implementation Schedule

#### Annex B Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?		implem sure? <sup>(1)</sup> O/R		What requirements or standards for the measure to achieve?	Implementation Status and Remarks
Air Quali	ty - Cons	truction Phase								
4.8.1	AQ1	Blasting	To minimise potential	Blasting area	SENTX	✓			Air Pollution Control	Not applicable.
		• The area within 30m of the blasting area will be wetted prior to blasting.	b	and 30m of blasting area	Contractor				(Construction Dust) Regulations	Blasting is not required in the latest landfill design
		<ul> <li>Blasting will not be carried out when the strong wind signal or tropical cyclone warning signal No. 3 or higher is hoisted, unless this is with the express prior permission of the Commissioner of Mines.</li> </ul>								9
		<ul> <li>loose material and stones in the Site will be removed prior to the blast operation</li> </ul>								
		<ul> <li>During blasting, blast nets, screens and other protective covers will be used to prevent the projection of flying fragments and material resulting from blasting</li> </ul>								
4.8.1	AQ2	Rock Drilling	To minimise potential		SENTX	✓			Air Pollution Control	Not applicable. Rock
		<ul> <li>Watering will be carried out at the rock drilling activities to avoid fugitive dust emissions.</li> </ul>	dust nuisance	area	Contractor				(Construction Dust) Regulations	drilling is not required in the latest landfill design
(1) D=Desig	gn; C=Const	ruction; O/R=Operation/Restoration; A=Aftercare								

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4.8.1	AQ3	<ul> <li>Site Access Road</li> <li>The main haul road will be kept clear of dusty materials or sprayed with water.</li> <li>The main haul road will be paved with aggregate or gravel.</li> <li>Vehicle speed will be limited to 10kph.</li> </ul>	To minimise potential dust nuisance	Main haul road	SENTX Contractor	✓		Air Pollution Control (Construction Dust) Regulations HKAQO and EIAO- TM Annex 4	Reminder was given to Contractor
4.8.1	AQ4	Stockpiling of Dusty Materials  • Any stockpile of dusty materials will be covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides or sprayed with water so as to ensure that the entire surface is wet.	To minimise potential dust nuisance	All construction works area	SENTX Contractor	✓		Air Pollution Control (Construction Dust) Regulations HKAQO and EIAO- TM Annex 4	Deficiency of mitigation measures but rectified by the Contractor
4.8.1	AQ5	<ul> <li>Loading, unloading or transfer of dusty materials</li> <li>All dusty materials will be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.</li> </ul>	To minimise potential dust nuisance	All construction works area	SENTX Contractor	✓		Air Pollution Control (Construction Dust) Regulations HKAQO and EIAO- TM Annex 4	Implemented
4.8.1	AQ6	<ul> <li>Site Boundary and Entrance</li> <li>Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of height not less than 2.4m from</li> </ul>	To minimise potential dust nuisance	Site boundary and entrance	SENTX Contractor	✓		Air Pollution Control (Construction Dust) Regulations HKAQO and EIAO-	Not applicable

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		ground level will be provided along the entire length of that portion of the site boundary except for the site entrance or exit.								TM Annex 4	
4.8.1	AQ7	<ul><li><u>Excavation Works</u></li><li>Working area of any excavation or</li></ul>	To minimise potential dust nuisance	All construction	SENTX Contractor	•	✓			Air Pollution Control (Construction Dust)	Not applicable
		earth moving operation will be sprayed with water immediately		works area						Regulations	
		before, during and immediately after the operation so as to ensure that the entire surface is wet.								HKAQO and EIAO- TM Annex 4	
4.8.1	AQ8	Building Demolition	To minimise potential dust nuisance	l All construction works area	SENTX Contractor	,	✓			Air Pollution Control	Not applicable
		• The area where the demolition works are planned to take place will be								(Construction Dust) Regulations	
		sprayed with water immediately prior to, during and immediately after the demolition activities.								HKAQO and EIAO- TM Annex 4	
		• Any dusty materials remaining after a stockpile is removed will be wetted with water and cleared from the surface of roads or street.									
4.8.1	AQ9	Construction of the Superstructure of Building	To minimise potential dust nuisance	All construction	SENTX Contractor	,	✓			Air Pollution Control (Construction Dust)	Implemented
		Effective dust screens, sheeting or		works area						Regulations	
		netting will be provided to enclose the scaffolding from the ground level up to the highest level of the scaffolding.								HKAQO and EIAO- TM Annex 4	

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						D	С	O/R	A		
4.8.1	AQ10	Should a stone crushing plant be needed on site, the control measures recommended in the <i>Best Practicable Means Requirement for Mineral Works</i> ( <i>Stone Crushing Plants</i> ) <i>BPM 11/1</i> should be implemented.	To minimise potential dust nuisance	Stone crushing plant/ construction phase	SENTX Contractor		✓			Best Practicable Means Requirement for Mineral Works (Stone Crushing Plants) BPM 11/1	Not applicable. Stone crushing plant is not required in the latest landfill design
4.8.1	AQ11	Good site practices such as regular maintenance and checking of the diesel powered mechanical equipment will be adopted to avoid any black smoke emissions and to minimize gaseous emissions.	To minimise potential dust nuisance	All construction works area	SENTX Contractor		<b>✓</b>			HKAQO and EIAO- TM Annex 4	Implemented
4.10.1	AQ12	Dust monitoring once every 6 days	Ensure the dust generated from the project meets the air quality requirement	At monitoring locations shown in <i>Figure 3.2a</i>	SENTX Contractor		✓			HKAQO and EIAO- TM Annex 4	Implemented
4.10.2	AQ41	Monitoring of ambient TSP once every 6 days	Ensure the dust emission from the project meets the dust requirement	At monitoring locations shown in <i>Figure 11.3a</i>	SENTX Contractor		✓	<b>✓</b>		HKAQO and EIAO- TM Annex 4	Implemented
4.10.2	AQ46	Monitoring of meteorological station, continuously	Collect site specific meteorological data	At meteorologica l station shown in Figure 11.3a	SENTX Contractor		✓	✓	✓	-	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	,	Location of the Measures	Who to implement the measure?	the	meas	imple ure? <sup>(1)</sup>	)	What requirements or standards for the	Implementation Status and Remarks
						D	С	O/R	A	measure to achieve?	
5.7.1	N1	Adopt good site practice listed below:  • Only well-maintained plant will be	To minimise potential construction noise nuisance.	All construction works area	SENTX Contractor		✓			Noise Control Ordinance (NCO) and EIAO-TM Annex 5	Implemented
		operated on-site and plant should be serviced regularly during the construction program;	e n								
		• Silencers or mufflers on construction equipment should be utilized and will be properly maintained during the construction program;									
		• Mobile plant, if any, will be sited as far from NSRs as possible;									
		Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or should be throttled down to a minimum;	n ,								
		Plant known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and									
		Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from on-site construction activities.									

EIA Ref.	EM&A Ref	A Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement			implement sure? (1)	What requirements or standards for the	Implementation Status and Remarks
					the measure?	D	С	O/R A	measure to achieve?	Status and Remarks
5.8	N2	Weekly noise monitoring	Ensure noise generated from the project meets the criteria	At monitoring locations shown in Figure 6.4a	SENTX Contractor		✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5	Implemented
Water Qua	ality <b>-</b> Co	nstruction Phase								
6.8.1	WQ1	Construction Runoff								
		• Exposed soil areas will be minimised	To minimise potential		SENTX		✓		ProPECC PN 1/94	Deficiency of
		to reduce the contamination of runoff and erosion.	1 , 1	construction works area	Contractor				EIAO-TM Annex 6	mitigation measures but rectified by the Contractor
6.8.1	WQ2	Perimeter channels will be	arising from the		SENTX	✓	✓		ProPECC PN 1/94	Reminder was given to
		constructed in advance of site formation works and earthworks and intercepting channels will be provided			Contractor				Water Pollution Control Ordinance (WPCO)	Contractor
		for example along the edge of excavation.							EIAO-TM Annex 6	
6.8.1	WQ3	Silt removal facilities, channels and	To minimise potential water quality impacts arising from the		SENTX Contractor		✓		ProPECC PN 1/94	Deficiency of
		manholes will be maintained and the deposited silt and grit should be							WPCO	mitigation measures but rectified by the
		removed regularly to ensure they are functioning properly at all times.	construction works	works area					EIAO-TM Annex 6	Contractor
6.8.1	WQ4	Temporary covers such as tarpaulin	To minimise potential		SENTX		✓		ProPECC PN 1/94	Implemented
		will also be provided to minimise the generation of high SS runoff.	water quality impacts arising from the construction works	construction works area	Contractor				WPCO	
6.8.1	WQ5	The surface runoff contained any oil	To minimise potential	All	SENTX		✓		ProPECC PN 1/94	Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement	When to in	re? (1)	What requirements or standards for the	Implementation Status and Remarks
			Measure & Main Concerns to address		the measure?	D C	O/R A	measure to achieve?	
		and grease will pass through the oil interceptors.	water quality impacts arising from the	construction works area	Contractor			WPCO	
		interceptors.	construction works	works area				EIAO-TM Annex 6	
6.8.1	WQ6	All sewer and drains will be sealed to	To minimise potential	Infrastructure		✓		ProPECC PN 1/94	Not applicable
		prevent building debris, soil etc from entering public sewers/drains before	water quality impacts arising from the	area at existing SENT	Contractor			WPCO	
		commencing any demolition works	demolition works	Landfill				EIAO-TM Annex 6	
6.8.1	WQ7	During the excavation works for the	To minimise potential	U	SENTX	✓		ProPECC PN 1/94	Not applicable.
		twin drainage tunnels, the recycle water for cooling the cutter head of	water quality impacts arising from the	sites	Contractor			WPCO	Excavation of drainage tunnels is not required
		the TBM will be conveyed to the sedimentation tanks for treatment and most of the treated water will be reused, where applicable and as much as possible, in the boring operations.	tunnel works					EIAO-TM Annex 6	in the latest landfill design.
6.8.1	WQ8	• The fuel and waste lubricant oil from	To minimise potential	SENTX Site	SENTX	✓		ProPECC PN 1/94	Implemented
		the on-site maintenance of machinery and equipment will be collected by a	water quality impacts arising from improper		Contractor			WPCO	
		licensed chemical waste collector.	handling of fuel and oil					Waste Disposal Ordinance (WDO)	
6.8.1	WQ9	Implementation of excavation	To minimise	All	SENTX	✓		ProPECC PN 1/94	Implemented
		schedules, lining and covering of excavated stockpiles	contaminated stormwater run-off	construction works	Contractor			WPCO	
		excavated stockpiles	from the SENTX Site	WOIRS				EIAO-TM Annex 6	
6.13	WQ10	Monitoring of surface water quality	To minimise potential	SENTX Site	SENTX	✓		WPCO	Implemented
		will be conducted on a regular basis as stated in the EM&A Manual.	water quality impacts on surface water arising from the construction works		Contractor			Water-TM	

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?			implement ure? <sup>(1)</sup> O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
6.8.2	WQ11	Sewage Effluents								
		<ul> <li>Sufficient chemical toilets will be provided for the construction workforce.</li> </ul>	To minimise potential water quality impacts arising from the sewage effluents	SENTX Site	SENTX Contractor		✓		WPCO	Implemented
6.8.2	WQ12	Untreated sewage will not be allowed	To minimise potential	SENTX Site	SENTX		✓		WPCO	Implemented
		to discharge into the surrounding water body.	water quality impacts arising from the sewage effluents		Contractor				WDO	
6.8.2	WQ13	A licensed waste collector will be	To minimise potential	SENTX Site	SENTX		✓		WPCO	Implemented
		employed to clean the chemical toilets on a regular basis.	water quality impacts arising from the sewage effluents		Contractor				WDO	
Waste Ma	nagement	- Construction Phase								
7.6.1	WM1	All the necessary waste disposal permits are obtained prior to the commencement of construction work.	To ensure compliance with relevant statutory requirements	Before construction works commence	SENTX Contractor	✓	✓		WDO	Implemented
7.6.1	WM2	Management of Waste Disposal								
		The construction contractor will open a	To ensure that	SENTX Site	SENTX		✓		WDO	Implemented
		billing account with the EPD. Every construction waste or public fill load to be transferred to the Government waste disposal facilities such as public fill reception facilities, sorting facilities,	adverse environmental impacts are prevented		Contractor				Waste Disposal (Charges for Disposal of Construction Waste) Regulation;	
		landfills will required a valid "chit" which contains the information of the account holder to facilitate waste							Works Bureau Technical Circular No.31/2004; and	

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		transaction recording and billing to the waste producer. A trip-ticket system will also be established to monitor the disposal of construction waste at the SENT Landfill and to control fly-tipping. The trip-ticket system will be included as one of the contractual requirements and implemented by the contractor.						Annex 5 and Annex 6 of Appendix G of ETWBTC No. 19/2005)	
		A recording system for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established.							
7.6.1	WM3	Measures for the Reduction of Construction Waste Generation							
		Inert and non-inert construction waste will be segregated and stored in different containers or skips to facilitate reuse or recycling of the inert waste and proper disposal of the non-inert construction waste. Specific areas of the work site will be designated for such segregation and storage if immediate use is not practicable.	To reduce construction waste generation	SENTX Site	SENTX Contractor	✓		WDO EIAO-TM Annex 7	Deficiency of mitigation measures but rectified by the Contractor
7.6.1	WM4	Chemical Waste  The construction contractor will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of	To ensure proper handling of chemical waste	SENTX Site	SENTX Contractor	✓		WDO  Code of Practice on the Packaging, Handling and Storage of Chemical Wastes	Deficiency of mitigation measures but rectified by the Contractor

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures  Chemical Wastes.	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?		to implem asure? <sup>(1)</sup> O/R	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
7.6.1	WM5	Sewage  An adequate number of portable toilets will be provided at the site to ensure that sewage from site staff is properly collected. The portable toilets will be desludged and maintained regularly by a specialist contractor.	To ensure proper handling of sewage	SENTX Site	SENTX Contractor	✓		WDO EIAO-TM Annex 7	Implemented
7.6.1 and SENTX latest design	WM6	General Refuse  General refuse will be stored in enclosed bins separately from construction and chemical wastes. The general refuse will be delivered to a transfer station or other landfill, separately from construction and chemical wastes, on a daily basis to reduce odour, pest and litter impacts.	To ensure proper handling of general refuse	SENTX Site	SENTX Contractor	✓		WDO EIAO-TM Annex 7	Deficiency of mitigation measures but rectified by the Contractor
7.6.1	WM7	Recycling bins will be provided at strategic locations to facilitate recovery of aluminium can and waste paper from the SENTX Site. Materials recovered will be sold for recycling.  Staff Training							
		At the commencement of the construction works, training will be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including	To ensure that adverse environmental impacts are prevented	SENTX Site	SENTX Contractor	✓			Implemented

EIA Ref. EM&A Ref		A Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main	Location of the Measures	Who to implement the measure?		implement sure? (1) O/R A	What requirements or standards for the measure to achieve?	Status and Remarks	
		waste reduction, reuse and recycling.	Concerns to address							
7.8	WM8	Environmental Monitoring & Audit Requirements	To ensure that	SENTX Site	SENTX	✓		WDO	Implemented	
		Weekly audits of the waste management practices will be carried out during the construction phase. The audits examine all aspects of waste management including waste generation, storage, recycling, transport and disposal.	adverse environmental impacts are prevented		Contractor					
Landfill G	as Hazar	ds - Design and Construction Phase								
8.6.2 and SENTX latest design	LFG1	Precautionary measures to be adopted by the contractors at the Project site and the adjacent development site within the landfill consultation zone are outlined in Paragraphs 8.3 to 8.49 of EPD's Landfill Gas Hazard Assessment Guidance Notes (the Guidance Note). Those precautionary measures applicable to the SENTX will be confirmed in the detailed Qualitative Landfill Gas Hazard Assessment to be submitted by the contractor.		All construction works area	SENTX Contractor	<b>✓</b>		Paragraphs 8.3 to 8.49 of EPD's Landfill Gas Hazards Assessment Guidance Note EIAO-TM Annex 7	Implemented	
8.6.2	LFG2	Monitoring will be undertaken when construction works are carried out in confined space within the consultation zone with reference to the monitoring requirements and procedures specified in Paragraphs 8.23 to 8.28 of EPD's <i>Guidance Note</i> will be followed.	To protect workers from landfill gas risk	Confined space within the construction works area	SENTX Contractor	✓			Not applicable	

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	the Measures implement				imple sure? (1		What requirements or standards for the	Status and Remarks
		C .	Measure & Main Concerns to address		the measure?		С	O/R		measure to achieve?	
		In the event of the trigger levels being exceeded, it is recommended that a person, such as the Safety Officer, is nominated, with deputies, to be responsible for dealing with any emergency which may occur due to landfill gas. In an emergency situation, the nominated person, or his deputies, shall have the necessary authority and shall ensure that the confined space is evacuated and the necessary works implemented for reducing the concentrations of gas. The appropriate organisations shall be contact.									
8.6.3	LFG4	Implementation of engineering measures according to Contract Specification requirements. These measures will include the placement of liner and installation of landfill gas management system to contain, manage and control landfill gas.	To protect workers from landfill gas risk	SENTX Site	SENTX Contractor	✓	<b>√</b>	✓	✓	EIAO-TM Annex 7	Implemented
8.6.3	LFG5	Engineering measures to significant engineering measures will be required in the design of the SENTX to protect the staff working in the infrastructure area. These measures include a combination of passive and active systems (examples are recommended in EPD's <i>Guidance Notes</i> ). Landfill gas monitoring boreholes will be installed at the edge of the waste slope	· ·	Infrastructure Area	SENTX Contractor	<b>✓</b>	<b>√</b>			EPD's Landfill Gas Hazards Assessment Guidance Note EIAO-TM Annex 7	Not applicable

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		between the waste and the new infrastructure area to monitor the migration of landfill gas, if any.							
Ecology -	Construc	tion Phase							
9.10.2	EC1	<ul> <li>Exposed soil areas will be minimised to reduce the contamination of runoff and erosion;</li> <li>To prevent stormwater runoff from washing across exposed soil surfaces, perimeter channels will be constructed in advance of site formation works and earthworks and intercepting channels will be provided for example along the</li> </ul>	To minimise potential water quality impacts affecting ecological resources	All construction works area	SENTX Contractor	✓		EIAO-TM Annex 16 ProPECC PN 1/94 Water Pollution Control Ordinance (WPCO) EIAO-TM Annex 6	Deficiency of mitigation measures but rectified by the Contractor  Reminder was given to Contractor
		<ul> <li>edge of excavation;</li> <li>Silt removal facilities, channels and manholes will be maintained and the deposited silt and grit will be removed regularly to ensure they are functioning properly at all times;</li> <li>Temporary covers such as tarpaulin will also be provided to minimise the generation of high suspended solids runoff;</li> </ul>						-	Deficiency of mitigation measures but rectified by the Contractor

	Mitigation Measures Red	Objectives of the	Location of	Who to					What requirements	Implementation Status and Remarks
KCI	Miligation Measures	Measure & Main Concerns to address	the weasures	_					measure to achieve?	Status and Remarks
	<ul> <li>The surface runoff contained any oil and grease will pass through the oil interceptors; and,</li> </ul>								-	Not applicable
	<ul> <li>Control measures, including implementation of excavation schedules, lining and covering of excavated stockpiles will be implemented to minimise contaminated stormwater run-off from the SENTX site.</li> </ul>								-	Implemented
EC2	Good Construction Practice:									
	<ul> <li>Fences along the boundary of the SENTX Site will be erected before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas.</li> </ul>	To minimise potential ecological impacts arising from the Project	SENTX Site	SENTX Contractor		✓			EIAO-TM Annex 16	Implemented
	<ul> <li>The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.</li> </ul>									
EC9	Environmental Monitoring & Audit Requirements									
	The implementation of the ecological mitigation measures should be checked as part of the environmental monitoring and audit procedures during the	To ensure that adverse ecological impacts are prevented	SENTX	SENTX Contractor		✓	<b>✓</b>	<b>√</b>	EIAO-TM Annex 16	Implemented
	Ref  EC2	The surface runoff contained any oil and grease will pass through the oil interceptors; and,  Control measures, including implementation of excavation schedules, lining and covering of excavated stockpiles will be implemented to minimise contaminated stormwater run-off from the SENTX site.  EC2 Good Construction Practice:  Fences along the boundary of the SENTX Site will be erected before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas.  The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.  EC9 Environmental Monitoring & Audit Requirements  The implementation of the ecological mitigation measures should be checked as part of the environmental monitoring	Ref Mitigation Measures Recommended Measure & Main Concerns to address  - The surface runoff contained any oil and grease will pass through the oil interceptors; and, - Control measures, including implementation of excavation schedules, lining and covering of excavated stockpiles will be implemented to minimise contaminated stormwater run-off from the SENTX site.  EC2 Good Construction Practice: - Fences along the boundary of the SENTX Site will be erected before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.  EC9 Environmental Monitoring & Audit Requirements The implementation of the ecological mitigation measures should be checked as part of the environmental monitoring	Ref Mitigation Measures Recommended Measure & Main Concerns to address  * The surface runoff contained any oil and grease will pass through the oil interceptors; and,  * Control measures, including implementation of excavation schedules, lining and covering of excavated stockpiles will be implemented to minimise contaminated stormwater run-off from the SENTX site.  EC2 Good Construction Practice:  * Fences along the boundary of the SENTX Site will be erected before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas.  * The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.  EC9 Environmental Monitoring & Audit Requirements  The implementation of the ecological mitigation measures should be checked as part of the environmental monitoring	Recommended Measures Econocerns to address implement the measure? Concerns to address implementation of contained any oil and grease will pass through the oil interceptors; and,  • Control measures, including implementation of excavation schedules, lining and covering of excavated stockpiles will be implemented to minimise contaminated stormwater run-off from the SENTX site.  EC2 Good Construction Practice:  Fences along the boundary of the SENTX Site will be erected before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas.  • The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.  EC9 Environmental Monitoring & Audit Requirements The implementation of the ecological mitigation measures should be checked as part of the environmental monitoring and covering of excavation schedules, lining and covering of excavation schedules, lining and covering of excavation schedules, lining and covering of excavated stockpiles will be recological impacts are prevented and that adwares ecological mitigation measures should be checked as part of the environmental monitoring and covering of excavated stockpiles will be resulted and the cological mitigation measures should be checked as part of the environmental monitoring and covering of excavated stockpiles will be resulted and the cological mitigation measures should be checked as part of the environmental monitoring and covering of excavated stockpiles will be resulted and the cological mitigation measures should be checked as part of the environmental monitoring and adverse ecological mitigation measures should be checked as part of the environmental monitoring and the concept of the environmental monitoring and the environmental monitoring and the concept of the environmental monitoring and the environme	Recommended Measures implement the Measure Main Concerns to address  • The surface runoff contained any oil and grease will pass through the oil interceptors; and,  • Control measures, including implementation of excavation schedules, lining and covering of excavated stockpiles will be implemented to minimise contaminated stormwater run-off from the SENTX site.  EC2 Good Construction Practice:  • Fences along the boundary of the SENTX Site will be erected before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas.  • The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.  EC9 Environmental Monitoring & Audit Requirements  The implementation of the ecological mitigation measures should be checked as apart of the environmental monitoring areas as part of the environmental monitoring areas.	Recommended Measures implement the measure? Do Concerns to address  * The surface runoff contained any oil and grease will pass through the oil interceptors; and,  * Control measures, including implementation of excavation schedules, lining and covering of excavated stockpiles will be implemented to minimise contaminated stormwater run-off from the SENTX site.  **Fences along the boundary of the SENTX Site will be erected before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas.  * The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.  **Fences along the boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.  **To ensure that SENTX SENTX SENTX SENTX SENTX SENTX To ensure that adverse ecological impacts are prevented and the environmental monitoring as part of the environmental monitoring impacts are prevented as part of the environmental monitoring as part of the environmental monitoring impacts are prevented and the damage does not occur to surrounding areas.  **To ensure that SENTX SENTX SENTX Contractor impacts are prevented and the environmental monitoring impacts are prevented and the environmental monitoring impacts are prevented and province impacts are prevented and the environmental monitoring impacts are prevented and province impacts are prevented and province impacts are prevented and that admage does not occur to surrounding areas.	Recommended Measures implement the measure? In the measure? In the measure? It is a surface runoff contained any oil and grease will pass through the oil interceptors; and,  • Control measures, including implementation of excavation schedules, lining and covering of excavated stockpiles will be implemented to minimise contaminated stormwater run-off from the SENTX site.  EC2  Good Construction Practice:  • Fences along the boundary of the SENTX Site will be erected before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas.  • The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.  EC9  Environmental Monitoring & Audit Requirements  To ensure that adverse ecological minacts are prevented as part of the environmental monitoring in processore in the measure? In	Recommended Measure & Main Concerns to address  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained any oil and grease will pass through the oil interceptors; and,  In the surface runoff contained and the ecological minus planets are prevented and than adverse ecological minus planets are prevented and than adverse ecological minus planets are prevented and the new runonmental monitoring will be recommended and the oil interceptors; and the surface runoff and the runoff and the surface runoff and the surface runoff and the runoff and the runoff and ru	Recommended Measures Main Concerns to address  **Inferior surface runoff contained any oil and grease will pass through the oil interceptors; and,  **Control measures, including implementation of excavation schedules, lining and covering of exavated stockpiles will be implemented to minimise contaminated stormwater runoff from the SENTX site will be erected before the commencement of works to a pervent vehicle movements, and encroachment of personnel, onto adjacent areas.  **Project**  **To ensure that adamage does not occur to surrounding areas.**  **EPI Pervironmental Monitoring & Audit Requirements  **To ensure that adaverse ecological mitigation measures should be checked in a part of the environmental monitoring as part of the environmental monitoring

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?			implement sure? <sup>(1)</sup> O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		construction period.								
Landscape	e and Visu	aal - Construction Phase								
10.6.5	LV1	CM1 - The construction area and area allowed for the contractor's office, leachate treatment plant and laboratory areas will be minimised to a practical minimum, to avoid impacts on adjacent landscape.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor		✓		EIAO-TM Annex 18 and ETWBC 3/2006	Implemented
10.6.5	LV2	CM2 - Topsoil, where identified, will be stripped and stored for re-use in the construction of the soft landscape works, where practical. The Contract Specification will include storage and reuse of topsoil as appropriate.	To minimise the landscape and visual impacts	All construction works area	SENTX Contractor		<b>✓</b>		EIAO-TM Annex 18	Not applicable
10.6.5	LV3	CM3 - All existing trees at the edges of the landfill will be carefully protected during construction. Detailed Tree Protection Specification will be provided in the Contract Specification. Under this Specification, the Contractor will be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in Contractor's works areas.	To minimise the landscape and visual impacts	Potential impacted area	SENTX Contractor		✓		EIAO-TM Annex 18 and ETWBC 3/2006	Implemented
10.6.5	LV4	CM4 - Trees unavoidably affected by the works will be transplanted, where necessary and practical. A detailed Tree	landscape and visual	Potential impacted area	SENTX Contractor	✓	✓		EIAO-TM Annex 18 and ETWBC 3/2006	Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main	Location of the Measures	Who to implement the measure?			implemer sure? <sup>(1)</sup> O/R A	t What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		Transplanting Specification will be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods will be allowed in the project programme.	Concerns to address					<u>, , , , , , , , , , , , , , , , , , , </u>		
10.6.5 and SENTX latest design	LV5	CM5 - Within 3 months of taking possession of the SENTX Site, the Contractor will plant advance screen planting of native species at Light Standard size at 1.5m centres along the High Junk Peak Trail so as to screen views of the Works from the trail. Tree planting locations will be agreed with AFCD. Works will be completed within 9 months of taking possession of the SENTX Site.	To minimise the landscape and visual impacts	At High Junk Peak Hiking Trail	SENTX Contractor		✓		EIAO-TM Annex 18	Implemented
10.6.5	LV6	CM6 - The Contractor's office, leachate treatment plant and laboratory will be given an aesthetic treatment in earth tones to reduce their visual impact and albedo and blend them into the surrounding landscape.	To minimise the landscape and visual impacts	Infrastructure area	SENTX Contractor	✓	✓		EIAO-TM Annex 18	Implemented
10.6.5	LV7	CM7 - The Contractor's office, leachate treatment plant and laboratory will be surrounded by a minimum of 5m wide and 0.75m high earth bund on the west and south sides planted with a dense screen of tree and shrub vegetation. Additional tree planting will be provided in unused spaces with thin infrastructure	To minimise the landscape and visual impacts	Infrastructure area	SENTX Contractor	<b>√</b>	✓		EIAO-TM Annex 18 and ETWBC 7/2002	Implemented

EIA Ref.	EM&A Ref	Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement			implement sure? <sup>(1)</sup>	What requirements or standards for the	Implementation Status and Remarks
			Measure & Main Concerns to address		the measure?	D	С	O/R A	measure to achieve?	
		site, along access roads and in and around car parks. This will be supplemented with shrub planting, where appropriate.								
10.6.5	LV8	CM8 - Planting trials will be carried out in an on-site nursery prior to implementation of the first phase of restoration to establish the best planting matrix and management intensity of the recommended plant materials for the restoration.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor		<b>√</b>		EIAO-TM Annex 18	Implemented
11.4.1 and SENTX latest design	LV9	During the preparation of the detailed landscape design plan, the design submission will be audited against the recommendation proposed in the <i>ER Report</i> by the Registered Landscape Architect from the ET.	To ensure the implementation of mitigation measures proposed in this EIA Report	SENTX Site	SENTX Contractor/E T	<b>√</b>	<b>√</b>		EIAO-TM Annex 18	Implemented

#### Annex C

# Monitoring Schedule for This Reporting Period

## South East New Territories (SENT) Landfill Extension EM&A Impact Monitoring Schedule during Construction Phase

January 2020

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	Surface Water Monitoring (pm)  Noise Monitoring (pm)	4
5 Dust Monitoring	6	7	8	9 Surface Water Monitoring (pm) Noise Monitoring (pm)	10	11 Dust Monitoring
12	13	14	15	Surface Water Monitoring (pm)  Noise Monitoring (pm)	Dust Monitoring	18
19	20	21	22	Dust Monitoring Surface Water Monitoring (pm) Noise Monitoring (pm)	24	25
26	27	28	29 Dust Monitoring	Surface Water Monitoring (pm) Noise Monitoring (pm)	31	

Note

Impact dust monitoring will be conducted at two monitoring stations (DM1 and DM2) under the on-going EM&A programme TKO Area 137 Fill Bank and the results will be shared with SENTX.

# Air Quality

Calibration Certificates for Dust Monitoring Equipment



# 東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.

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

T: +852 2695 8318 F: +852 2695 3944 E: etl@ets-testconsult.com W: www.ets-testconsult.com

# Calibration Report of High Volume Air Sampler

Manufacturer

Graseby 105

Date of Calibration

20 December 2019

Serial No.

9795 (ET/EA/003/18)

Calibration Due Date

19 February 2020

Method

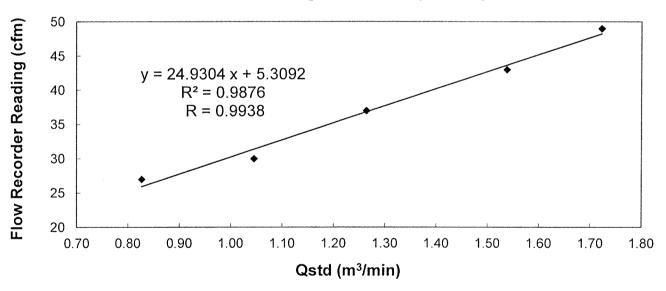
Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the

**Operations Manual** 

Results

Flow recorder rea	49	43	37	30	27	
Qstd (Actual flow	1.72	1.54	1.26	1.05	0.83	
Pressure :	765.81 mm Hg		Temp.:	292	K	

#### Sampler 9795 Calibration Curve Site: Tseung Kwan O 137 (TKO-A1)



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)



# 東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.

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

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# Calibration Report of

High Volume Air Sampler

Manufacturer

Andersen G1051

Date of Calibration

20 December 2019

Serial No.

1176 (ET/EA/003/05)

Calibration Due Date

19 February 2020

Method

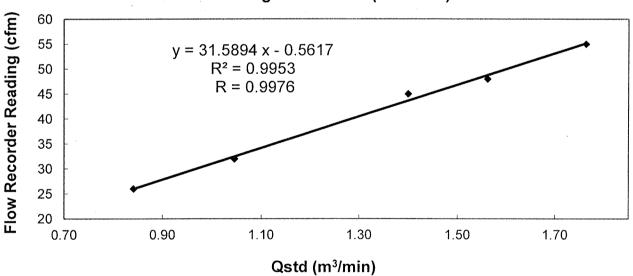
Based on Operations Manual for the 5-point calibration using standard calibration kit

manufactured by Tisch TE-5025 A

Results

Flow recorder read	55	48	45	32	26	
Qstd (Actual flow	1.76	1.56	1.40	1.05	0.84	
Pressure :	765.81 mm Hg		Temp. :	292	K	

#### Sampler 1176 Calibration Curve Site: Tseung Kwan O 137 (TKO-A2a)



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

LĂU, Chi Leung

(Environmental Team Leader)

- END OF REPORT -

# 24-hour TSP Monitoring Results

Table D2.1 24-hour TSP Monitoring Results at DM1

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (μg/m3)
5 Jan 20	8:30	6 Jan 20	8:30	Cloudy	114
11 Jan 20	8:00	12 Jan 20	8:00	Fine	95
17 Jan 20	15:20	18 Jan 20	15:20	Cloudy	124
23 Jan 20	8:00	24 Jan 20	8:00	Fine	116
29 Jan 20	9:32	30 Jan 20	9:32	Fine	103
				Average	110
				Min	95
				Max	124

Note:

DM1 corresponds to the existing TSP monitoring station TKO-A1 currently operating by CEDD.

Figure D2.1 Graphical Presentation for 24-hr TSP Monitoring at DM1

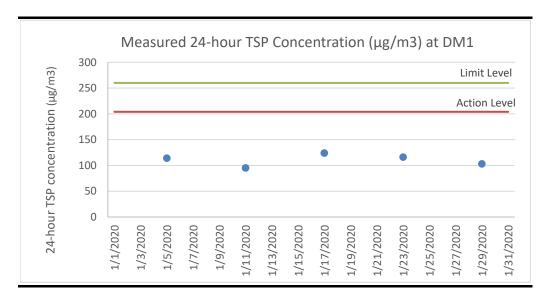


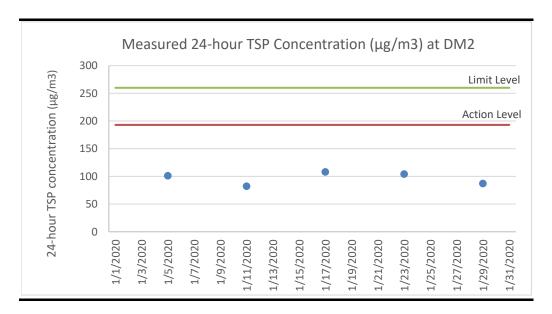
Table D2.2 24-hour TSP Monitoring Results at DM2

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (μg/m3)
5 Jan 20	8:30	6 Jan 20	8:30	Cloudy	101
11 Jan 20	8:00	12 Jan 20	8:00	Fine	82
17 Jan 20	15:30	18 Jan 20	15:30	Cloudy	108
23 Jan 20	8:00	24 Jan 20	8:00	Fine	104
29 Jan 20	9:45	30 Jan 20	9:45	Fine	87
				Average	96
				Min	82
				Max	108

Note:

DM2 corresponds to the existing TSP monitoring station TKO-A2a currently operating by CEDD.

Figure D2.2 Graphical Presentation for 24-hr TSP Monitoring at DM2



# Event and Action Plan for Dust Monitoring

## Annex D3 Event and Action Plan for Dust Monitoring During Construction Phase

		Action	
Event	ET	IEC	Contractor
Action Level			
Exceedance for one sample	<ul> <li>Identify the source(s) and investigate the cause(s) of exceedance</li> <li>Prepare Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project</li> <li>Repeat measurement to confirm finding if exceedance is due to the Project</li> <li>Increase monitoring frequency to daily if exceedance is due to the Project and continue until the monitoring results reduce to below action level</li> </ul>	<ul> <li>Verify the Notification of Exceedance</li> <li>Check monitoring data submitted by ET</li> <li>Check Contractor's working methods</li> </ul>	<ul> <li>Rectify any unacceptable practice</li> <li>Amend working methods if appropriate</li> </ul>
Exceedance for two or more consecutive samples	<ul> <li>Identify the source(s) and investigate the cause(s) of exceedance</li> <li>Prepare Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project</li> <li>Discuss with Contractor and IEC for remedial measures required</li> <li>Ensure remedial measures are properly implemented</li> <li>If exceedance continues, arrange meeting with Contractor &amp; IEC</li> <li>Continue monitoring at daily intervals if exceedance is due to the Project</li> <li>If no exceedance for 3 consecutive days, cease additional monitoring</li> </ul>	Check monitoring data submitted by ET	<ul> <li>Submit proposals for remedial measures to IEC</li> <li>Implement the agreed proposals</li> <li>Amend proposal if appropriate</li> </ul>

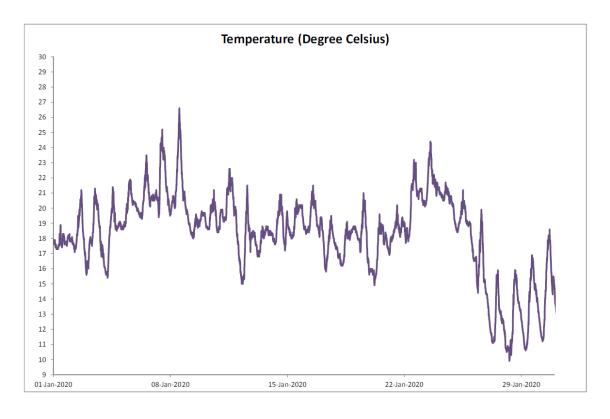
		Action	
Event	ET	IEC	Contractor
Limit Level			
Exceedance for one sample	<ul> <li>Identify the source(s) and investigate the cause(s) of exceedance</li> <li>Prepare Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is due to the Project</li> <li>Discuss with Contractor and IEC for remedial measures required</li> <li>Ensure remedial measures are properly implemented</li> <li>Repeat measurement to confirm finding if exceedance is due to the Project</li> <li>Increase monitoring frequency to daily if exceedance is due to the Project and continue until the monitoring results reduce to below limit level</li> </ul>	<ul><li>Check monitoring data submitted by ET</li><li>Check Contractor's working methods</li></ul>	<ul> <li>Take immediate action to avoid further exceedance</li> <li>Submit proposals for remedial measures to IEC</li> <li>Implement the agreed proposals</li> <li>Amend proposal if appropriate</li> </ul>
Exceedance for two or more consecutive samples	<ul> <li>Identify source(s) and investigate the cause(s) of exceedance</li> <li>Prepare Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC, Project Proponent and EPD the causes &amp; actions taken for the exceedances</li> <li>Discuss with Contractor and IEC for remedial measures required</li> <li>Ensure remedial measures are properly implemented</li> <li>Continue monitoring at daily intervals if exceedance is due to the Project</li> <li>If no exceedance for 3 consecutive days, cease additional monitoring</li> <li>If exceedance due to the Project continues, consider what portion of the work is responsible and stop that portion of work until the exceedance is abated</li> </ul>		<ul> <li>Take immediate action to avoid further exceedance</li> <li>Submit proposals for remedial measures to IEC</li> <li>Implement the agreed proposals</li> <li>Resubmit proposals if problem still not under control</li> </ul>

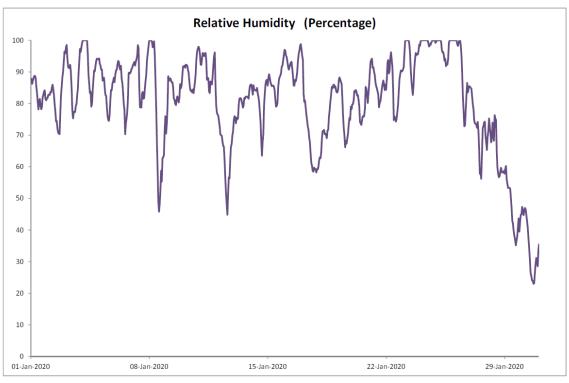
ENVIRONMENTAL RESOURCES MANAGEMENT

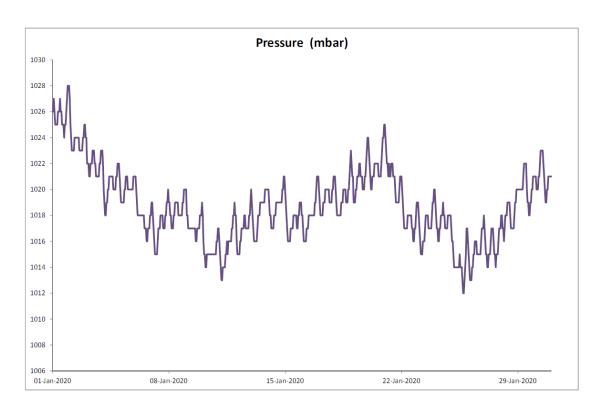
GREEN VALLEY LANDFILL LTD.

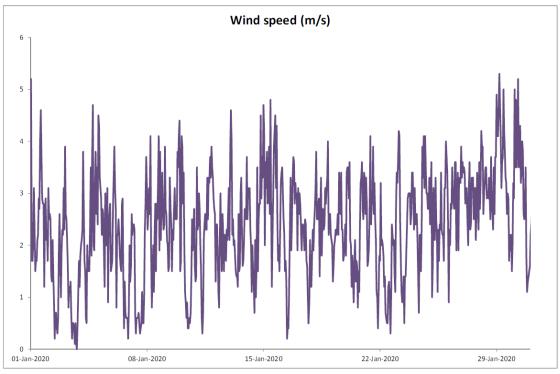
# Meteorological Data

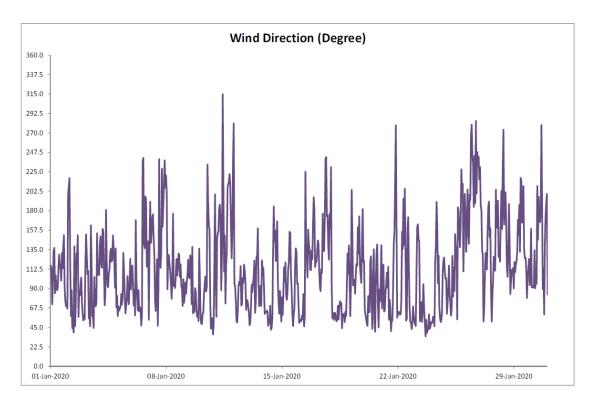
Annex D4 Meteorological Data

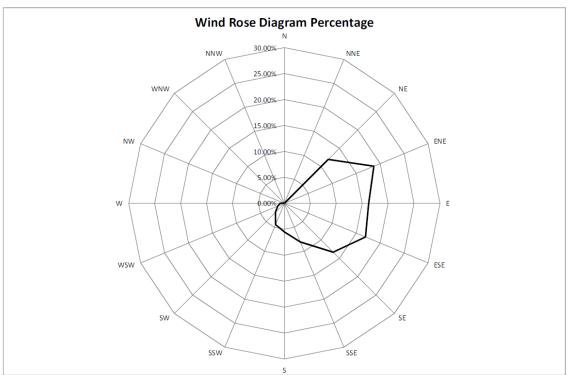


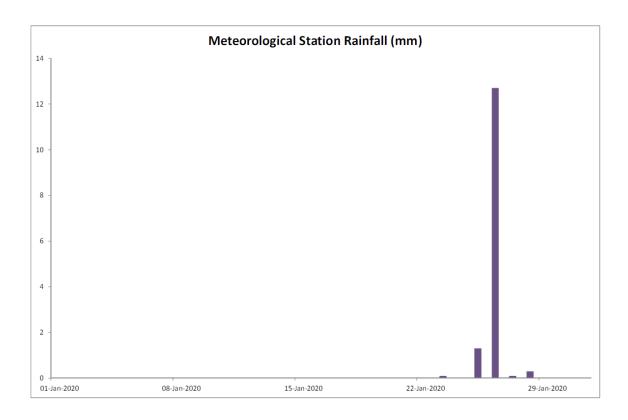












Annex E

Noise

#### Annex E1

Calibration Certificates for Noise Monitoring Equipment



#### Sun Creation Engineering Limited

Calibration & Testing Laboratory

## Certificate of Calibration 校正證書

Certificate No.: C193753

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC19-1098)

Date of Receipt / 收件日期: 5 July 2019

Description / 儀器名稱

Integrating Sound Level Meter (EQ006)

Manufacturer / 製造商

Brüel & Kjær

Model No. / 型號

2238

Serial No. / 編號

2285762

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 :

 $(23 \pm 2)^{\circ}$ C

Relative Humidity / 相對濕度 :

 $(50 \pm 25)\%$ 

Line Voltage / 電壓

TEST SPECIFICATIONS / 測試規節

Calibration check

DATE OF TEST / 測試日期

16 July 2019

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試

K P Cheuk

Assistant Engineer

Certified By 核證

K C Lee Engineer Date of Issue 簽發日期

22 July 2019

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 一 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓



#### **Sun Creation Engineering Limited**

**Calibration & Testing Laboratory** 

## Certificate of Calibration 校正證書

Certificate No.: C193753

證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- 2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment:

**Equipment ID** 

Description

Certificate No.

CL280 CL281

40 MHz Arbitrary Waveform Generator

C190176

Multifunction Acoustic Calibrator

CDK1806821

- 5. Test procedure: MA101N.
- 6. Results:
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level

#### 6.1.1.1 Before Self-calibration

	UUT S	Setting	Applied	Value	UUT	
Range	Parameter	Frequency Time		Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
50 - 130					1	94.4

#### 6.1.1.2 After Self-calibration

UUT Setting			Applied Value		UUT	IEC 60651	
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
50 - 130	$L_{AFP}$	A	F	94.00	1	94.1	± 0.7

#### 6.1.2 Linearity

UUT Setting				Applied	d Value	UUT
Range	Parameter	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
50 - 130	$L_{AFP}$	A	F	94.00	1	94.1 (Ref.)
				104.00		104.1
				114.00		114.0

IEC 60651 Type 1 Spec. :  $\pm$  0.4 dB per 10 dB step and  $\pm$  0.7 dB for overall different.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



**Sun Creation Engineering Limited** 

**Calibration & Testing Laboratory** 

## Certificate of Calibration 校正證書

Certificate No.: C193753

證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

COMMITTER	201111111111111111111111111111111111111								
UUT Setting				Applied Value		UUT	IEC 60651		
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.		
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)		
50 - 130	$L_{AFP}$	A	F	94.00	1	94.1	Ref.		
	$L_{ASP}$		S			94.1	± 0.1		
	$L_{AIP}$		I			94.2	± 0.1		

6.2.2 Tone Burst Signal (2 kHz)

	UUT Setting				Applied Value		IEC 60651
Range	Parameter	Frequency	Time	Level	Burst	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)	Duration	(dB)	(dB)
30 - 110	$L_{AFP}$	A	F	106.0	Continuous	106.0	Ref.
	L <sub>AFMax</sub>				200 ms	104.9	$-1.0 \pm 1.0$
	$L_{ASP}$		S		Continuous	106.0	Ref.
	L <sub>ASMax</sub>				500 ms	102.0	$-4.1 \pm 1.0$

#### 6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting		Applied Value		UUT	IEC 60651		
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
50 - 130	$L_{AFP}$	A	F	94.00	31.5 Hz	55.2	$-39.4 \pm 1.5$
		1			63 Hz	68.1	$-26.2 \pm 1.5$
				2	125 Hz	78.0	$-16.1 \pm 1.0$
					250 Hz	85.4	$-8.6 \pm 1.0$
		_			500 Hz	90.8	$-3.2 \pm 1.0$
					1 kHz	94.1	Ref.
					2 kHz	95.3	$+1.2 \pm 1.0$
					4 kHz	95.1	$+1.0 \pm 1.0$
					8 kHz	93.0	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.9	-4.3 (+3.0 ; -6.0)

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Sun Creation Engineering Limited – Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 — 校正及檢測實驗所 c/o 香港新界屯門興安里—號四樓



#### **Sun Creation Engineering Limited**

**Calibration & Testing Laboratory** 

## Certificate of Calibration 校正證書

Certificate No.: C193753

證書編號

6.3.2 C-Weighting

		Setting		Appl	ied Value	UUT	IEC 60651
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
50 - 130	$L_{CFP}$	C	F	94.00	31.5 Hz	91.5	$-3.0 \pm 1.5$
					63 Hz	93.4	$-0.8 \pm 1.5$
					125 Hz	93.9	$-0.2 \pm 1.0$
					250 Hz	94.1	$0.0 \pm 1.0$
					500 Hz	94.1	$0.0 \pm 1.0$
					1 kHz	94.1	Ref.
					2 kHz	93.9	$-0.2 \pm 1.0$
					4 kHz	93.3	$-0.8 \pm 1.0$
					8 kHz	91.1	-3.0 (+1.5; -3.0)
					12.5 kHz	88.0	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting			Applied Value				UUT	IEC 60804		
Range	Parameter	Frequency	Integrating	Frequency	Burst	Burst	Burst	Equivalent	Reading	Type 1
(dB)		Weighting	Time	(kHz)	Duration	Duty	Level	Level	(dB)	Spec.
					(ms)	Factor	(dB)	(dB)		(dB)
30 - 110	$L_{Aeq}$	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						$1/10^{2}$		90	90.0	± 0.5
			60 sec.			$1/10^{3}$		80	79.2	± 1.0
			5 min.			1/104		70	69.2	± 1.0

Remarks: - UUT Microphone Model No.: 4188 & S/N: 2658547

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value : 94 dB : 31.5 Hz - 125 Hz :  $\pm$  0.35 dB

12.5 kHz : ± 0.70 dB

 $\begin{array}{lll} 104~\text{dB}: 1~\text{kHz} & : \pm 0.10~\text{dB}~\text{(Ref. 94 dB)} \\ 114~\text{dB}: 1~\text{kHz} & : \pm 0.10~\text{dB}~\text{(Ref. 94 dB)} \\ \text{Burst equivalent level} & : \pm 0.2~\text{dB}~\text{(Ref. 110 dB)} \\ & \text{continuous sound level)} \end{array}$ 

- The uncertainties are for a confidence probability of not less than 95 %.

Note:

Only the original copy or the laboratory's certified true copy is valid.

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

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#### Sun Creation Engineering Limited

Calibration & Testing Laboratory

## Certificate of Calibration 校正證書

Certificate No.:

Date of Receipt / 收件日期: 27 August 2019

C194819

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC19-1098)

Description / 儀器名稱

Sound Calibrator (EQ087)

Manufacturer / 製造商

Rion

Model No. / 型號

NC-74

Serial No. / 編號

34657231

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度  $(23 \pm 2)^{\circ}$ C

Relative Humidity / 相對濕度 :  $(50 \pm 25)\%$ 

TEST SPECIFICATIONS / 測試規範

Calibration check

Line Voltage / 電壓

DATE OF TEST / 測試日期

7 September 2019

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試

H T Wong

Technical Officer

Certified By 核證

Lee

Date of Issue 簽發日期

10 September 2019

Engineer

written approval of this laboratory 本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited - Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 一 校正及檢測實驗所

c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior

Website/網址: www.suncreation.com

Page 1 of 2



## Certificate of Calibration 校正證書

Certificate No.:

C194819

證書編號

The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement 1.

The results presented are the mean of 3 measurements at each calibration point. 2.

3. Test equipment:

> Equipment ID CL130 CL281 TST150A

Description Universal Counter Multifunction Acoustic Calibrator Measuring Amplifier

Certificate No. C193756 CDK1806821 C181288

Test procedure: MA100N.

Results: 5.

5.1 Sound Level Accuracy

UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value		
Nominal Value	(dB)	(dB)	(dB)		
94 dB, 1 kHz 94.1		± 0.3	± 0.2		

Frequency Accuracy

1 requeries recuracy					
UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value		
(kHz)	(kHz)	Spec.	(Hz)		
1	1.001	1 kHz ± 1 %	± 1		

Remark: The uncertainties are for a confidence probability of not less than 95 %.

Note:

Only the original copy or the laboratory's certified true copy is valid.

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

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

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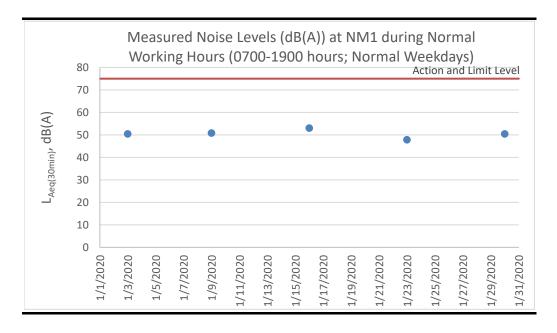
# Annex E2

# Noise Monitoring Results

Table E2.1 Measured Noise Levels (dB(A)) at NM1 during Normal Working Hours (0700-1900 hours; Normal Weekdays)

Date	Start Time	Finish Time	Weather	$L_{10~(30min)}$	L <sub>90 (30min)</sub>	Leq (30min)
3 Jan 20	14:36	15:06	Sunny	51.5	47.5	50.4
9 Jan 20	14:29	14:59	Sunny	52.0	48.5	50.8
16 Jan 20	14:38	15:06	Sunny	54.0	48.5	53.0
23 Jan 20	14:58	15:28	Sunny	49.5	45.0	47.8
30 Jan 20	13:34	14:04	Sunny	52.0	48.0	50.4
					Average	50.5
					Mir	1 47.8
					Max	<b>5</b> 3.0

Figure E2.1 Graphical Presentation for Noise Monitoring at NM1



# Annex E3

# Event and Action Plan for Noise Monitoring

# Annex E3 Event and Action Plan for Construction Noise

<b>Event</b>		Action	
	ET	IEC	Contractor
Action Level	<ul> <li>Identify the source(s) and investigate the cause(s) of exceedance and complaint</li> <li>Prepare Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project</li> <li>Discuss with Contractor and IEC for remedial measures required</li> <li>Ensure remedial measures are properly implemented</li> <li>Have additional monitoring if exceedance is due to the Project. If exceedance stops, cease additional monitoring</li> </ul>	<ul> <li>Verify the Notification of Exceedance</li> <li>Check monitoring data submitted by ET</li> <li>Discuss with ET and Contractor on proposed remedial measures</li> <li>Review proposals on remedial measures</li> <li>Audit the implementation of the remedial measures</li> <li>Audit the effectiveness of the implemented remedial measures</li> </ul>	<ul> <li>Submit proposals for remedial measures to IEC</li> <li>Implement the agreed proposals</li> </ul>
Limit Level	<ul> <li>Identify the source(s) and investigate the cause(s) of exceedance and complaint</li> <li>Prepare Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is due to the Project</li> <li>Analyse the operation of SENTX and investigate the causes of exceedance</li> <li>Provide interim report to Contractor, IEC, Project Proponent and EPD the causes of the exceedances</li> <li>Discuss with Contractor and IEC for remedial measures required</li> <li>Ensure remedial measures are properly implemented</li> <li>Report the remedial measures implemented and the additional monitoring results to Contactor, IEC, Project Proponent and EPD</li> <li>Have additional monitoring if exceedance is due to the Project. If exceedance stops, cease additional monitoring</li> </ul>	<ul> <li>Verify the Notification of Exceedance</li> <li>Check monitoring data submitted by ET</li> <li>Discuss with ET and Contractor on proposed remedial measures</li> <li>Review proposals on remedial measures</li> <li>Audit the implementation of the remedial measures</li> <li>Audit the effectiveness of the implemented remedial measures</li> </ul>	<ul> <li>Take immediate measures to avoid further exceedance</li> <li>Submit proposals for remedial measures to IEC within 3 working days of notification</li> <li>Implement the agreed proposals</li> <li>Resubmit proposals if problem still not under control</li> <li>Stop the relevant activity of works as determined by the Project Proponent until the exceedance is abated</li> </ul>

# Surface Water Quality

Calibration Certificates for Surface Water Quality Monitoring Equipment



#### ALS Technichem (HK) Pty Ltd

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T: +852 2610 1044 | F: +852 2610 2021

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: **BEN TAM** HK1947004 WORK ORDER:

CLIENT: ACTION UNITED ENVIRONMENT SERVICES AND

CONSULTING

RM A 20/F., GOLD KING IND BLDG, ADDRESS: SUB-BATCH:

> NO. 35-41 TAI LIN PAI ROAD, LABORATORY: HONG KONG KWAI CHUNG, N.T. HONG KONG 04-Nov-2019 DATE RECEIVED: DATE OF ISSUE: 11-Nov-2019

#### **COMMENTS**

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client. The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Conductivity, Dissolved Oxygen, pH Value, Salinity and Temperature Scope of Test:

**Equipment Type:** Multifunctional Meter Brand Name/ Model No.: YSI Professional Plus

Serial No./ Equipment No.: 10G101946 Date of Calibration: 08-Nov-2019

#### NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Ms. Lin Wai Yu. Iris

Assistant Manager - Inorganic

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### REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1947004

SUB-BATCH: (

DATE OF ISSUE: 11-Nov-2019

CLIENT: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING

Equipment Type: Multifunctional Meter

Brand Name/ Model No.:

YSI Professional Plus

Serial No./

10G101946

Equipment No.:

Date of Calibration: 08-Nov-2019

Date of Next Calibration: 08-Feb-2020

PARAMETERS:

Conductivity Method Ref: APHA (21st edition), 2510B

Expected Reading (µS/cm)	Displayed Reading (µS/cm)	Tolerance (%)
146.9	150.1	+2.2
6667	6271	-5.9
12890	12026	-6.7
58670	55365	-5.6
	Tolerance Limit (%)	±10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500-O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
7.73	7.60	-0.13
5.83	5.67	-0.16
3.62	3.44	-0.18
	Tolerance Limit (mg/L)	±0.20

pH Value Method Ref: APHA (21st edition), 4500H:B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.03	+0.03
7.0	6.91	-0.09
10.0	9.98	-0.02
	Tolerance Limit (pH unit)	±0.20

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris

Assistant Manager - Inorganic

### REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1947004

SUB-BATCH: 0

DATE OF ISSUE: 11-Nov-2019

CLIENT: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING

Equipment Type: Multifunctional Meter

Brand Name/ Model No.:

YSI Professional Plus

Serial No./ Equipment No.:

10G101946

Date of Calibration: 08-Nov-2019

08-Feb-2020

PARAMETERS:

Salinity Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	
10	10.34	+3.4
20	20.19	+1.0
30	30.95	+3.2
	Tolerance Limit (%)	±10.0

Date of Next Calibration:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical

Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
12.0	11.8	-0.2
23.5	22.9	-0.6
37.5	35.6	-1.9
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris

Assistant Manager - Inorganic

# Surface Water Quality Monitoring Results

Table F2.1 Surface Water Quality Monitoring Results at DP4T

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pН	Suspended Solids (SS) (mg/L)
3 Jan 20	14:18	Sunny		Unable	to collect water samp	ole due to insufficient	flow	
9 Jan 20	14:12	Sunny		Unable	to collect water samp	ole due to insufficient	flow	
16 Jan 20	14:18	Sunny		Unable	to collect water samp	ole due to insufficient	flow	
23 Jan 20	14:43	Sunny		Unable	to collect water samp	ele due to insufficient	flow	
30 Jan 20	13:49	Sunny		Unable	to collect water samp	ole due to insufficient	flow	
					Average	-	-	-
					Min	-	-	-
					Max	-	-	-

Table F2.2 Surface Water Quality Monitoring Results at DP6

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	рН	Suspended Solids (SS) (mg/L)
3 Jan 20	14:10	Sunny		Unable t	to collect water samp	ole due to insufficient f	low	
9 Jan 20	14:05	Sunny		Unable t	to collect water samp	ole due to insufficient f	low	
16 Jan 20	14:05	Sunny		Unable t	to collect water samp	ole due to insufficient f	low	
23 Jan 20	14:36	Sunny		Unable t	to collect water samp	ole due to insufficient f	low	
30 Jan 20	13:38	Sunny		Unable t	to collect water samp	ole due to insufficient f	low	
					Average	-	-	-
					Min	-	-	-
					Max	-	-	-

Event and Action Plan for Surface Water Quality Monitoring

Annex F3 Event and Action Plan for Surface Water Quality During Construction Phase

Event	Action					
	ET	IEC	Contractor			
Action Level being exceeded by one sampling day	<ul> <li>Repeat <i>in situ</i> measurement to confirm findings</li> <li>Identify the source(s) and investigate the cause(s) of exceedance</li> <li>Prepare Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project</li> <li>Repeat measurement on the next day of exceedance if exceedance is due to the Project</li> </ul>		itted by ET • Amend working methods if			
Action Level being exceeded by two consecutive sampling days	<ul> <li>Repeat <i>in situ</i> measurement to confirm findings</li> <li>Identify the source(s) and investigate the cause(s) of exceedance</li> <li>Prepare Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project</li> <li>Discuss with Contractor and IEC for remedial measures required</li> <li>Ensure remedial measures are properly implemented</li> <li>Increase the monitoring frequency to daily if exceedance is due to the Project and continue until no exceedance of Action Level</li> </ul>	<ul> <li>Verify the Notification of Exceedance</li> <li>Check monitoring data submitted by ET</li> <li>Check Contractor's working methods</li> <li>Discuss with ET Leader and Contractor on proposed remedial measures</li> <li>Review proposals on remedial measures</li> <li>Audit the implementation of the remedial measures</li> <li>Audit the effectiveness of the implemented remedial measures</li> </ul>	<ul> <li>Submit proposals for remedial measures to IEC</li> <li>Implement the agreed proposals</li> <li>Amend proposal if appropriate</li> </ul>			

Event	Action					
	ET	IEC	Contractor			
Limit Level being exceeded by two consecutive sampling days	<ul> <li>Repeat <i>in situ</i> measurement to confirm findings</li> <li>Identify source(s) of impact and cause(s) of exceedance</li> <li>Prepare the Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is due to the Project</li> <li>Discuss with Contractor and IEC for remedial measures required</li> <li>Ensure remedial measures are properly implemented</li> <li>Increase the monitoring frequency to daily if exceedance is due to the Project until no exceedance of Limit Level</li> </ul>	<ul> <li>Verify the Notification of Exceedance</li> <li>Check monitoring data submitted by ET</li> <li>Check Contractor's working methods</li> <li>Discuss with ET and Contractor on proposed remedial measures</li> <li>Review proposals on remedial measures</li> <li>Audit the implementation of the remedial measures</li> <li>Audit the effectiveness of the implemented remedial measures</li> </ul>	<ul> <li>Critically review the working methods</li> <li>Rectify unacceptable practice</li> <li>Check all plant and equipment</li> <li>Consider changes of working methods</li> <li>Discuss with the ET and IEC and propose mitigation measures to the IEC</li> <li>Implement the agreed mitigation measures</li> </ul>			
Limit Level being exceeded by more than two consecutive sampling days	<ul> <li>Repeat <i>in situ</i> measurement to confirm findings</li> <li>Identify source(s) of impact and cause(s) of exceedance</li> <li>Prepare the Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is due to the Project</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>Discuss with Contractor and IEC for remedial measures required</li> <li>Ensure mitigation measures are implemented</li> <li>Increase the monitoring frequency to daily if exceedance is due to the Project until no exceedance of Limit Level for two consecutive days</li> </ul>	<ul> <li>Verify the Notification of Exceedance</li> <li>Check monitoring data submitted by ET</li> <li>Check Contractor's working methods</li> <li>Discuss with ET and Contractor on proposed remedial measures</li> <li>Review proposals on remedial measures</li> <li>Audit the implementation of the remedial measures</li> <li>Audit the effectiveness of the implemented remedial measures</li> </ul>	<ul> <li>Critically review the working methods</li> <li>Rectify unacceptable practice</li> <li>Check all plant and equipment</li> <li>Consider changes of working methods</li> <li>Discuss with the ET and IEC and propose mitigation measures</li> <li>Implement the agreed mitigation measure</li> <li>As directed by the Project Proponent, slow down or stop all or part of the construction activities</li> </ul>			

ENVIRONMENTAL RESOURCES MANAGEMENT

GREEN VALLEY LANDFILL LTD.

#### Annex G

Cumulative Statistics on Exceedances, Environmental Complaints, Notification of Summons and Status of Prosecutions

 Table G1
 Cumulative Statistics on Exceedances

		Total No. recorded in this reporting period	Total No. recorded since project commencement
Air Quality (24-hr TSP)	Action	0	0
	Limit	0	0
Noise	Action	0	0
	Limit	0	0
Surface Water Quality	Action	0	0
	Limit	0	36

Table G2 Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics				
_	Complaints	Notifications of Summons	Prosecutions		
This Reporting Period (1 – 31 January 2020)	0	0	0		
Total no. received since project commencement	1	0	0		

# Annex H

# Monitoring Schedule for the Next Reporting Period

# South East New Territories (SENT) Landfill Extension EM&A Impact Monitoring Schedule during Construction Phase

February 2020

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	-	7	0
2	3	4 Dust Monitoring	5	6 Surface Water Monitoring (pm)	/	8
		Dust Montoring		Noise Monitoring (pm)		
				Troise Fromtoning (Pin)		
9	10	11	12	13	14	15
	Dust Monitoring		Surface Water Monitoring (pm)			
			Noise Monitoring (pm)			
			10			
16  Dust Monitoring	17	18	19	20 Surface Water Monitoring (nm)	21	22 Dust Monitoring
Dust Monitoring				Surface Water Monitoring (pm)		Dust Monitoring
				Noise Monitoring (pm)		
23	24	25	26	27	28	29
				Surface Water Monitoring (pm)	Dust Monitoring	
				Noise Monitoring (pm)		

Note

Impact dust monitoring will be conducted at two monitoring stations (DM1 and DM2) under the on-going EM&A programme TKO Area 137 Fill Bank and the results will be shared with SENTX.