



翠谷工程有限公司 Green Valley Landfill, Limited

# South East New Territories (SENT) Landfill Extension

Monthly Environmental Monitoring & Audit Report No.8 for August 2019

September 2019

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

Document/Plan to be Certified/Verified:	Monthly Environmental Monitoring & Audit Report No.8 for August 2019 for South East New Territories (SENT) Landfill Extension
Date of Report:	11 September 2019

#### **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.

Frank Wan, Environmental Team Leader: (ERM Hong-Kong, Limited)

Warchitt J.

Date: 11 September 2019

#### **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:

Date: (2 Sep 2019

(Meinhardt Infrastructure and Environment Limited)

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

#### Monthly Environmental Monitoring & Audit Report for August 2019

#### Environmental Resources Management

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Client:		Projec	t No:		
Green V	alley Landfill Ltd.	0465	169		
Summary		Date:			
		11 S	ep 2019		
		Appro	ved by:		
This document presents the Monthly EM&A Report No.8 for August 2019 for South East New Territories (SENT) Landfill Extension		Warchitt J.			
			Frank Wan		
		Partn	er		1
0	Monthly EM&A Report No.8 (for August 2019)	AL	TS	FW	11 Sep 19
Revision	Description	Ву	Checked	Approved	Date
This report has been prepared by Environmental Resources Management the trading name of 'ERM Hong-Kong, Limited', with all reasonable skill, care and diligence within the terms		Distrik	oution		BSI
of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.			Internal	Cer	OHSAS 18001:2007 tificate No. OHS 515956
We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.		$\boxtimes$	Public		BSI
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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 August 2019 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

1 exceedance of the Limit Level for pH and 2 exceedances of the Limit Level for Suspended Solids (SS) were recorded for surface water quality impact monitoring in the reporting period. The SS exceedance at DP6 on 8 August 2019 and pH and SS exceedances at DP4 (Future, temporary) on 22 August 2019 were considered not Project-related upon further investigation.

#### **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 September 2019 are mainly associated with dust emission from the exposed area and loading and uploading operation of dusty materials and the potential surface water impact in the rainy season.

#### 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).

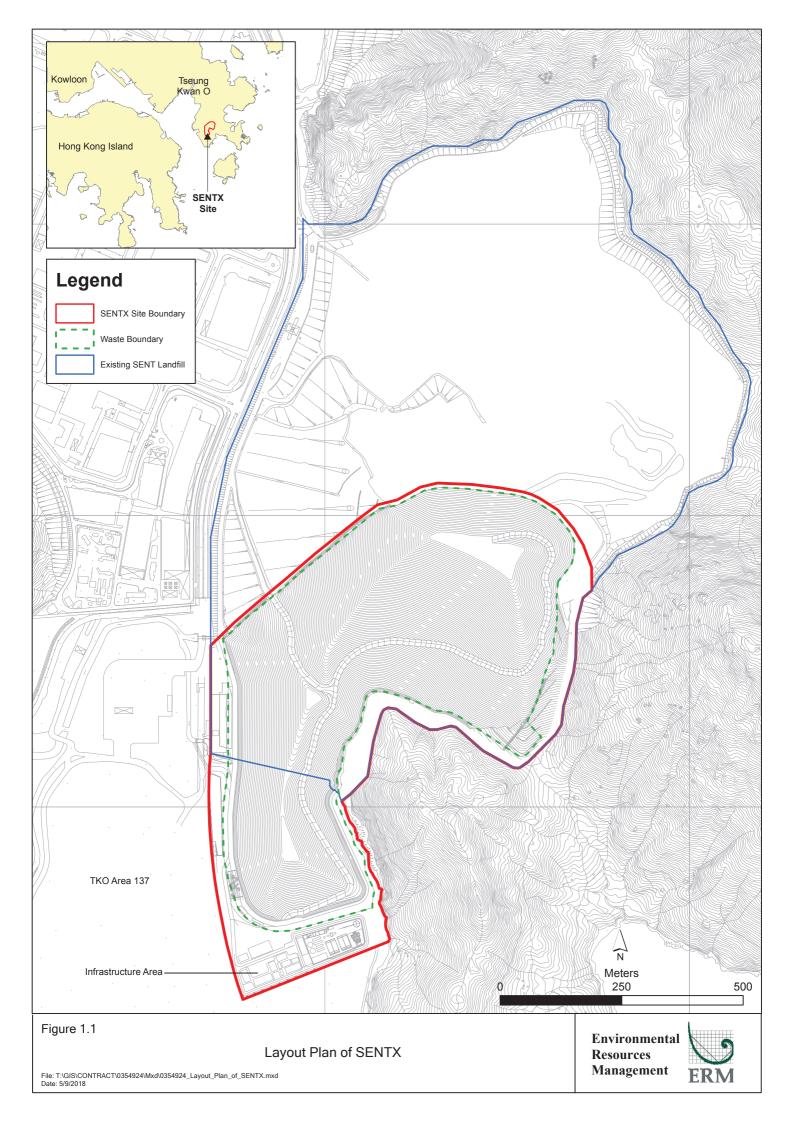
ERM-Hong Kong, Limited (ERM) and Meinhardt Infrastructure and Environment Limited (Meinhardt) are commissioned to undertake the roles of Environmental Team (ET) and the Independent Environmental Checker (IEC), respectively, to undertake the EM&A activities for the Project in accordance with the requirements specified in the EP, updated EM&A Manual <sup>(1)</sup>, approved EIA Report <sup>(2)</sup> 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 Mm<sup>3</sup> 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.

- (1) ERM (2018). South East New Territories (SENT) Landfill Extension: Environmental Monitoring & Audit Manual
- (2) ERM (2007). South East New Territories (SENT) Landfill Extension Feasibility Study: Environmental Impact Assessment Report



#### Table 1.1Estimated 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.

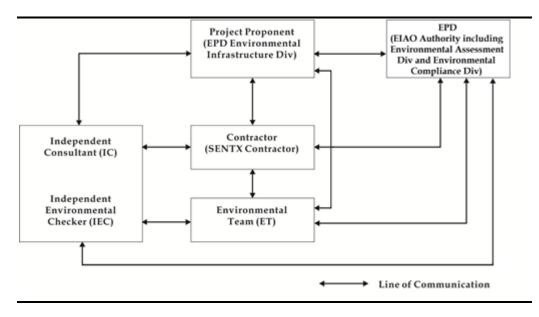
#### 1.3 SCOPE OF THE EM&A REPORT

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 August 2019 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 1.2Contact 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:

- Rebar fixing, concreting and formwork erection for the plinth and control buildings at Landfill Gas Plant area;
- Excavating, removing and replacing unsuitable fill materials;
- Rebar fixing, formwork and concreting to the sediment trap, drop inlet shaft, MHX1, manhole and outlet box culverts;
- Rebar fixing, formwork and concreting to the Leachate Treatment Plant (LTP) area and buildings;

- Rebar, formwork and concreting to the substructure of infrastructure buildings (EPD building, GVL building and Laboratory);
- Construction of perimeter bund for Cell 1X and 2X;
- Maintenance and improvement of the temporary surface water drainage;
- Preparation works of buttress wall (shotcreting and mass);
- Installing groundwater pipe works along eastern perimeter bund;
- CLP trench works at Area X2; and
- Construction of X12 channel.

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 1.3Summary of Status for the Environmental Aspects under the Updated EM&A<br/>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	
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
Site Environmental Audit	
Regular Site Inspection	On-going
Complaint Hotline and Email	On-going
Channel	
Environmental Log Book	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 21 August 2019; and
- Environmental toolbox trainings on VOC and Smog and Illegal Dumping were provided on 12 August and 26 August 2019 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 Construction Companies	Submitted and accepted by EPD.
2.4	Setting up of Community Liaison Group	Community Liaison Group was set up.
2.5	Submission of Detailed Landfill Gas Hazard Assessment Report	Submitted, and accepted by EPD on 10 January 2019.
2.6	Submission of Restoration and Ecological Enhancement Plan	Submitted to EPD on 28 June 2019.
2.7	Setting up of Trial Nursery	To be set up during construction phase.
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
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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
Construction Noise Permit (Permit	GW-RE0404-19	Validity from 28 May 2019
Holder: Chun Wo)		to 22 November 2019

#### EM&A RESULTS

2

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 2.1Action 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>	$260 \ \mu g \ m^{-3}$

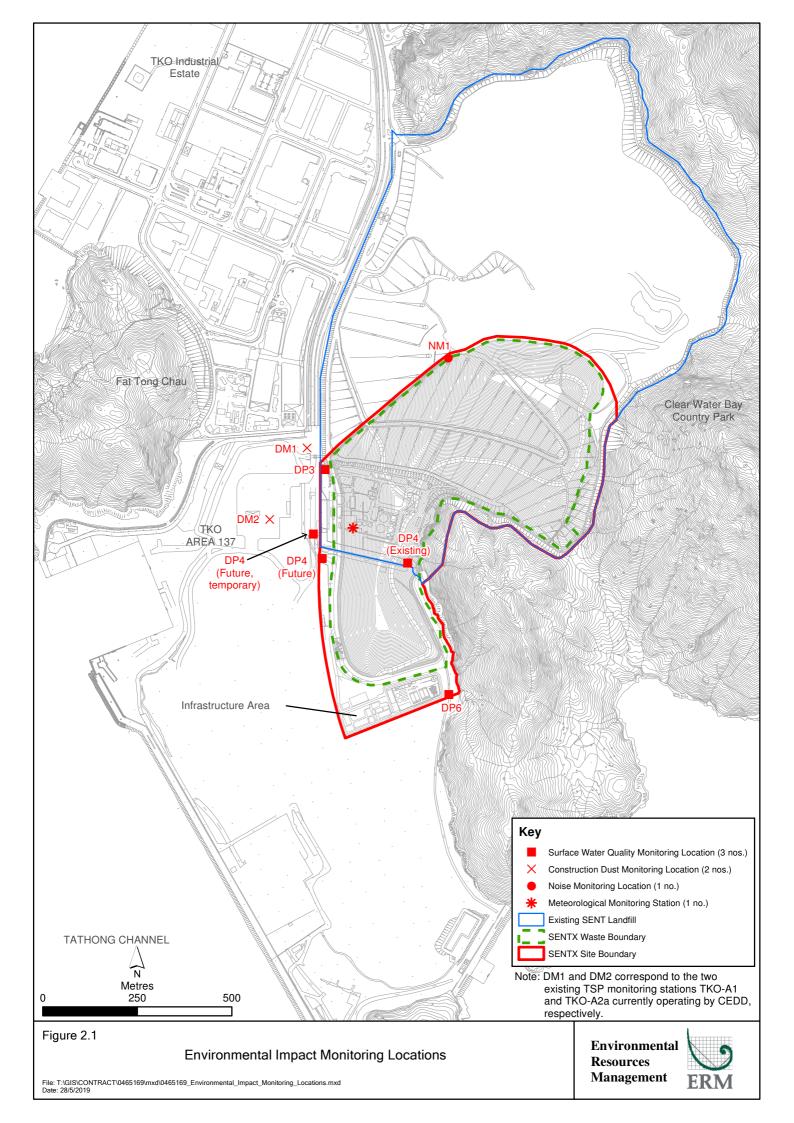
High volume air samplers (HVSs) in compliance with the specifications listed under Section 3.2.2 of the updated EM&A Manual were used to measure 24hour TSP levels at the CEDD dust monitoring stations. The HVSs were calibrated upon installation and thereafter at bi-monthly intervals to check the validity 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 2.2Dust Monitoring Details

Monitoring Station	Location	Parameter	Frequency and Duration	Monitoring Dates	Equipment
DM1	Site Egress of TKO Area 137 Fill Bank		5	2, 8, 14, 20, 26 August 2019	HVS Greasby 105 (S/N: 9795 (ET/EA/003/18))

ENVIRONMENTAL RESOURCES MANAGEMENT



Monitoring Station	Location	Parameter	Frequency and Duration	Monitoring Dates	Equipment
DM2	Combined Reception and Exit Office (CREO) of TKO Area 137 Fill Bank		construction 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 2.3Summary 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	71 (55 - 85)	204	260
DM-2A –Combined Reception and Exit Office (CREO) of TKO Area 137 Fill Bank	72 (49 - 95)	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 D*3.

#### 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.

Tim	e Period	Action Level <sup>(a)</sup>	Limit Level (b)
07:00 – 19:00 hrs on normal weekdays		When one documented complaint is received from any one of the noise sensitive receivers (NSRs)	75 dB(A) at NSRs
		or	
		75 dB(A) recorded at the monitoring station	
Note	es:		
(a)	75dB(A) along and at al Level.	pout 100m from the SENTX site boundary w	was set as the Action
(b)	Limits specified in the C	GW-TM and IND-TM for construction and	operational noise,

#### Table 2.4Action and Limit Levels for Construction Noise

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 2.5Noise Monitoring Details

respectively.

Monitoring Station <sup>(1)</sup>	Location	Parameter	Frequency and Duration	Monitoring Dates	Equipment
NM1	SENTX Site Boundary (North)	L <sub>eq (30 min)</sub> measurement between 07:00 and 19:00 hours on normal weekdays (Monday to Saturday)	Once per week for 30 mins during the construction period of the Project	1, 8, 15, 22, 29 August 2019	Sound Level Meter: B&K 2250 (S/N: 3012330) Acoustic Calibrator: Rion NC-75 (S/N: 34680623)

#### 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. However, monitoring was not conducted on 1 and 29 August 2019 due to adverse weather condition. 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 2.6Summary of Construction Noise Monitoring Results in the Reporting Period

Monitoring Station	Measured Noise Level Leq (30 min), dB(A)		
	Average	Range	Action and Limit Level
NM1	55.3	51.8 - 59.7	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 E*3.

#### 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 2.7Action and Limit Levels for Surface Water Quality

Parameters	Action Level		Limit Level	
	DP3	DP4 & DP6	DP3	DP4 & DP6
DO	< 5.13 mg/L	< 5.80 mg/L	< 4.35 mg/L	< 5.42 mg/L
SS	> 209.3 mg/L	> 11.7 mg/L	> 217.0 mg/L	> 12.7 mg/L
рН	> 8.88	> 8.39	> 9.28	> 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 2.8Impact Surface Water Quality Monitoring Details

Monitoring Station	Location	Frequency	Monitoring Dates	Parameter	Equipment
DP3	Surface water	Weekly	1, 8, 15, 22,	• pH	YSI Professional Plus
	discharge point		29 August	• DO	(S/N: JC024046)
	DP3	-	2019	• SS	
DP4	Surface water				
(Future,	discharge point				
temporary)	DP4	_			
DP6	Surface water				
	discharge point				
	DP6				
Notes:					
(a) DP4 was	s temporary reloc	ated to DP4	(Future, tempo	rary) (i.e. DP4	IT) as an interim
discharg	ge point from the	monitoring e	event on 16 Ma	y 2019.	
(b) Impact	surface water qua	lity monitori	ng at DP3 was	suspended fr	om the monitoring
orromt or	n 25 July 2019	5	0	•	0

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

#### 2.3.3 Results and Observations

2.3.2

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 was not carried out on 1 and 29 August 2019 due to adverse weather condition and on 8 and 15 August 2019 at DP4 (Future, temporary) due to insufficient flow. Impact water quality monitoring results and graphical presentations are provided in *Annex F2*.

Action and Limit Level exceedances were recorded for surface water quality impact monitoring in the reporting period and actions in accordance with the Event and Action Plan presented in *Annex F3* were undertaken. Investigations on the Action and Limit Levels exceedances were conducted and summarised in *Table 2.9* below. Investigation reports of the exceedances are presented in *Annex F4*.

#### Table 2.9Details of Exceedances Recorded for Surface Water Quality Monitoring

Date	Monitoring Location	Parameter	Type of Exceedance	Remarks
8 August 2019	DP6	SS	Limit Level	Non Project-related
22 August 2019	DP4 (Future, temporary)	рН	Limit Level	Non Project-related
22 August 2019	DP4 (Future, temporary)	SS	Limit Level	Non Project-related

Based on the investigation conducted for each of the monitoring event with potential Action and Limit Levels exceedances with the Contractor, and the IEC, the SS exceedance at DP6 on 8 August 2019 and pH and SS exceedances at DP4 (Future, temporary) on 22 August 2019 were considered not Project-related upon further investigation. The Contractor was reminded to implement all relevant mitigation measures for the construction works and maintain good site practice. The ET will keep track on the monitoring data and ensure Contractor's compliance of the environmental requirements.

#### 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 21 August 2019 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 identify the topsoil to be generated from the construction works and plan for the storage and re-use of the topsoil where practical. 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, 5 site inspections were carried out on 1, 8, 15, 21 and 29 August 2019.

Key observations during the site inspections are summarised in Table 2.10.

Table 2.10Key Observations Identified during the Site Inspection in this Reporting<br/>Month

Inspection Date	Environmental Observations and Recommendations
1 August 2019	The Contractor shall display the Environmental Permit and other
11146401 -015	relevant licenses at all the entrances or at a convenient location for
	public information at all times.
	• The Contractor shall fix the geotextile at the pipes along the DP6
	channel.
	• The Contractor shall clean up the oil spillage around the site (e.g.
	near the wheel-washing area and the sediment trap) and handle the
	clean-ups as chemical waste.
	• The Contractor shall ensure plugs for trip trays around the site are
	installed. The Contractor shall also avoid the accumulation of
	liquid in the drip tray, any oily liquid shall be cleaned up and the
	clean-ups shall be disposed as chemical wastes.
	• The Contractor shall repair the temporary drainage along the
	southern boundary and at the south-western boundary corner.
	• The Contractor shall review and enhance the drainage system of the
	whole site to avoid the accumulation of water and overflowing of
	site water outside the site boundary.
	• The Contractor shall dispose the general waste in the general refuse
	skip near wheel-washing areas and sediment trap. The Contractor
	shall also maintain the housekeeping of the whole area.
8 August 2019	The Contractor shall enhance watering to the site, especially to the
	main haul roads and working areas of loading and unloading dusty
	materials (e.g. increase the frequency of watering or install more
	sprinklers) to minimize fugitive dust emission.
	• The Contractor shall implement dust control measures when
	conducting activities related to dusty materials (i.e. handling of
	sawdust) near future EPD building
	• The Contractor shall maintain the drainage at DP6 channel and silt
	removal facilities to ensure all site water is treated prior to discharge.
	The Contractor shall remove the wash-water and silt at the wheel
	washing facilities more frequently to avoid overflow.
	The Contractor shall clear the general refuse near southern site     houndary and dispose the metallic waste at southern site houndary
	boundary and dispose the metallic waste at southern site boundary
	at their respective skip.

Inspection Date	Environmental Observations and Recommendations
15 August 2019	• The Contractor shall clean up the oil spillage around the wheel-
	washing area and handle the clean-ups as chemical waste.
	• The Contractor shall install plugs for drip trays around the site.
	The Contractor shall also avoid the accumulation of liquid in the
	drip tray next to DP6, any oily liquid shall be cleaned up as the
	clean-ups shall be discarded as chemical waste.
	• The Contractor shall enhance the drainage system around the
	sediment trap and near the southern boundary to avoid the
	accumulation of stagnated water. The Contractor shall also
	maintain the pipes near the southern boundary to avoid leakage and
	spillage of water around the site. The Contractor shall also ensure
	the pipe reached the drainage network.
	• The Contractor shall dispose the metal waste around the site in its
	respective skips and general waste around the site (including
	sediment trap, southern boundary, at the south-western boundary
	corner and at the future EPD office) in the general refuse skips.
	• The Contractor shall dispose empty chemical waste containers
	around the site as chemical waste in accordance with the Code of
	Practice on the Packaging, Handling and Storage of Chemical Waste.
21 August 2019	• The Contractor shall clean up the oil spillage near the sediment trap
0	and handle the clean-up materials as chemical waste.
	• The Contractor shall dispose empty chemical containers around the
	site as chemical waste in accordance with the Code of Practice.
	• The Contractor shall avoid accumulation of stagnant water at the
	future LTP and spray larvicides for mosquito control.
	future LFG Plant and dispose of the waste accumulated on site
	regularly.
29 August 2019	• The Contractor shall clear the deposited silt around the pump near
	the vehicle washing facilities to ensure it is functioning properly.
	• The Contractor shall maintain the concrete bund and remove the
	deposited silt and grit regularly at the temporary drainage along
	Western perimeter bund to prevent overflow of site water outside
	site boundary.
	• The Contractor shall clean up the oil spillage near the vehicle
	waste.
	• The Contractor shall avoid accumulation of stagnant water in the
	contained inside the drip trays.
	· ·
	near DP4T channel in the chemical waste cabinet and avoid
29 August 2019	<ul> <li>The Contractor shall store the general refuse in refuse skip near future LFG Plant and dispose of the waste accumulated on site regularly.</li> <li>The Contractor shall clear the deposited silt around the pump near the vehicle washing facilities to ensure it is functioning properly.</li> <li>The Contractor shall maintain the concrete bund and remove the deposited silt and grit regularly at the temporary drainage along Western perimeter bund to prevent overflow of site water outside site boundary.</li> <li>The Contractor shall clean up the oil spillage near the vehicle washing facilities and handle the clean up materials as chemical waste.</li> <li>The Contractor shall avoid accumulation of stagnant water in the drip trays near future LFG plant and ensure all chemicals are contained inside the drip trays.</li> <li>The Contractor shall dispose the chemical waste in the refuse skip</li> </ul>

The Contractor has rectified all 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 2.11*.

### Table 2.11Summary of Environmental Deficiencies Identified and Corresponding<br/>Rectification Actions

Deficiencies	<b>Rectifications Implemented</b>	Proposed Additional Control Measures
Surface Water		

Deficiencies	Rectifications Implemented	Proposed Additional Control Measures
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	• Installed silt fencing near surface water channel along DP6 channel.	<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 non-inert construction waste. 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 2.12*.

#### Table 2.12Quantities of Different Waste Generated and Imported Fill Materials

Month/ Year	Inert C&D Materials (a) (in '000m <sup>3</sup> )	aterials (in '000kg)			Non-inert Construction Waste <sup>(b)</sup> (in '000m <sup>3</sup> )	Recyclable Materials <sup>(c)</sup> (in '000kg)	Chemical Wastes (in '000kg)	
		Rock	Soil	(in '000m³)				
1 - 31	0.014	0	17110.67	0	0.051	0	0	
August								
19								
Notes:								
. ,				hard rock and assumption: 1.6	0		naterials	
· /	on-inert const sumption: 0.9			lude general re l refuse.	efuse disposed	at landfill. De	ensity	
(.) D	1 . 1 . 1		.11	1	1 1 1			

(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. 1 exceedance of the Limit Level for pH and 2 exceedances of the Limit Level for Suspended Solids (SS) were recorded for surface water quality impact monitoring in the reporting period. The SS exceedance at DP6 on 8 August 2019 and pH and SS exceedances at DP4 (Future, temporary) on 22 August 2019 were considered not Project-related upon further investigation.

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 September 2019 will be:

- Site clearance, preparation and formation of Area X1 and X2;
- Excavation and removal of unsuitable fill materials;
- Remaining site formation works at Area X1;
- Filling of perimeter bund for Cell 1X and 2X;
- Construction of drop inlet shaft;
- Construction of buttress wall;
- Construction of perimeter wall and plinths at LTP area and substructure at bioplant;
- Installation of ammonia stripping plant and equalization and sequencing batch reactor tanks at LTP area;
- Construction of CLP trench;
- Excavation and construction of discharge box culvert;
- Construction of substructure and superstructure of new infrastructure building;
- Construction of plinths and superstructure of Landfill Gas Plant area;
- Construction of X12 channel;
- Construction of groundwater pipe from east to south in Cell 1X and 2X perimeter bund;
- Construction of substructure and superstructure at maintenance building; and
- Erection of remaining chain link fence adjacent sediment trap.

#### 3.2 KEY ISSUES FOR THE COMING MONTH

Potential environmental impacts arising from the above upcoming construction activities in the next reporting period of September 2019 are mainly associated with dust emission from the exposed area and loading and uploading operation of dusty materials and the potential surface water impact in the rainy season. 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 September 2019 are provided in *Annex H*.

#### CONCLUSION AND RECOMMENDATION

4

This EM&A Report presents the findings of the EM&A activities undertaken during the period from 1 to 31 August 2019 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. 1 exceedance of the Limit Level for pH and 2 exceedances of the Limit Level for Suspended Solids (SS) were recorded for surface water quality impact monitoring in the reporting period. The SS exceedance at DP6 on 8 August 2019 and pH and SS exceedances at DP4 (Future, temporary) on 22 August 2019 were considered not Project-related upon further investigation.

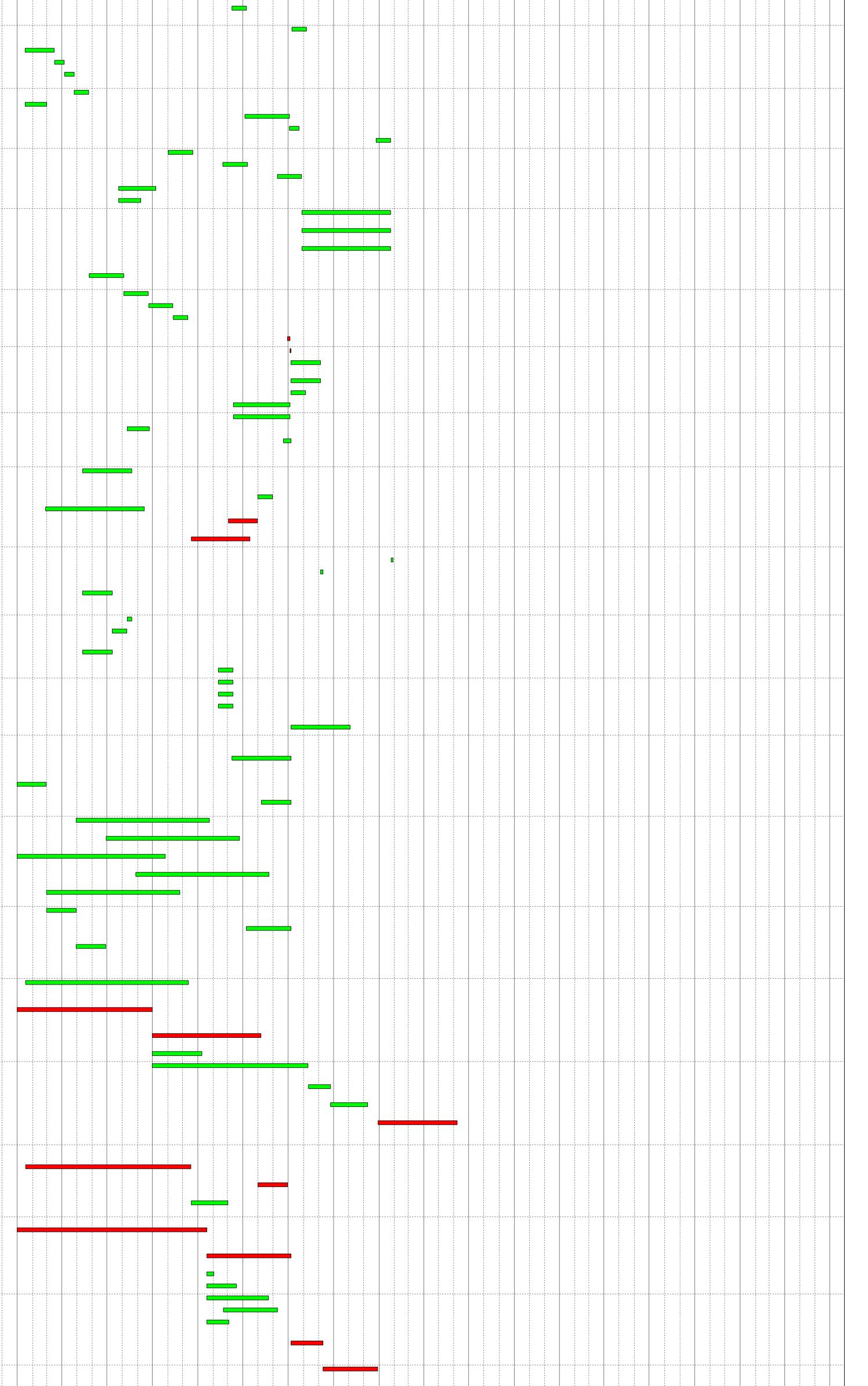
Environmental site inspections were carried out during the reporting period. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site inspections.

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

BS Path Activity Activity Name	Dur Start Finish Total Predecessor Details Successor Details	2018     2019     2020     2021     2022     2023       Q2     Q3     Q4     Q1     Q2
SA2.5 Construction (Initial Works) SA2.5.02 Advance Works & Site Establishment	1153       12-Apr-18       07-Jun-21       705         1148       12-Apr-18       02-Jun-21       35	
SA2.5.02.01         Site Establishment & Mobilization           5.02.01         52-1000         Site Mobilization for Parts X1 & X2           5.02.01         52-1100         Site Mobilization for Parts X3, X4 & X5	333         12-Apr-18         10-Mar-19         820         End           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           30         12-Apr-18         11-May-18         1083         11-1300: FS, 11-1500: FS         52-1300: FS, M 3. 1: FF	
5.02.01     52-1200     Temporary Office for Employer / ER / IC       5.02.01     52-1300     Hoarding and Fencing Works	60         10-Oct-18         08-Dec-18         0         23-1300: FS         11-1700: SS, M 3. 1: FS           40         30-Jan-19         10-Mar-19         820         52-1000: FS, 52-1100: FS         32-1500: FS, M10. 1: FS -26, M10. 2: FS -13, M10. 3: FS	
SA2.5.02.02       Site Survey & Investigation Works for Parts X1 & X2         5.02.02       52-1400       Condition Survey         5.02.02       52.4500       Transmittin 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           20         24 Date 48         10-log 49         24.5         11.1100: FS, 11-1200: FS         52-1600: FS	
5.02.02       52-1500       Topographic Survey         5.02.02       52-1600       Site inspection, Review of Condition Survey Report         SA2.5.02.03       Site Survey & Investigation Works for Parts X3, X4 & X5	20       31-Dec-18       19-Jan-19       845       11-1100: FS, 11-1200: FS       52-1600: FS         25       25-Jan-19       18-Feb-19       840       52-1500: FS, 52-1400: FS       32-1500: FS         50       12-Apr-18       31-May-18       1103       Image: Constraint of the second se	
5.02.0352-1700Condition Survey5.02.0352-1800Topographic Survey5.02.0352-1900Site inspection, Review of Condition Survey Report	25       12-Apr-18       06-May-18       1103       11-1300: FS, 11-1400: FS, 11-1500: FS       52-1900: FS         20       12-Apr-18       01-May-18       1108       11-1300: FS, 11-1400: FS, 11-1500: FS       52-1900: FS         25       07-May-18       31-May-18       1103       52-1700: FS, 52-1800: FS       32-1500: FS	
S.02.03       S2-1900       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       32-1500: FS         975       02-Oct-18       02-Jun-21       35	
5.02.0452-2100Installation of Monitoring Stations & Wells (GP & GW) on Buttress Wall5.02.0452-2200Conduct Baseline Monitoring for Construction (one month)5.02.0452-2300Conduct Baseline Monitoring for Operation (one year)	120         02-Oct-18         29-Jan-19         0         23-1600: FS         52-2200: SS 60           30         01-Dec-18         30-Dec-18         0         52-2000: SS 60, 52-2100: SS 60         11-1100: FS           365         03-Jun-20         02-Jun-21         35         32-1500: FS -400, 53-4500: FS         12-1400: FS	
SA2.5.03 Civil Engineering Works SA2.5.03.0 Buttress Wall	748     13-Jan-19     29-Jan-21     834       475     02-Mar-19     18-Jun-20     83	
5.03.0         53-1000         Section adj. SENT           5.03.0         53-1100         Diversion of SENT Landfill Gas Pipe	45         07-Feb-20         22-Mar-20         96         23-2500: FS, 53-1000: FS         53-1300: FS, 54-4000: FS, M 3. 3: FS	
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, 11-1400: FS         53-1300: FS, 53-3100: FS, M 3. 7: FS, M 3. 6: FS -200           75         05-Apr-20         18-Jun-20         83         41-1500: FS, 53-1100: FS, 53-1200: FS, 53-1000: FS         54-4000: FS	
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, 53-2800: FS         53-2000: FS, 53-2300: FS, 53-3400: FS, 63-1000: FS, 63-100: FS, 63-1000: FS, 63-100: FS, 63-100: FS, 63-100: FS, 63-100: FS, 63-100: FS	
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, 53-3400: FS, 53-3400: FS, 53-3700: FS, 53-3800: FS	
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       53-1900: FS, 53-2000: FS, 53-2200: FS, 53-3800: FS         75       13-Jan-19       28-Mar-19       432       11-1100: FS, 23-2500: FS       53-2000: FS	
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         53-1900: FS, 63-1100: FS, 63-1200: FS, 63-1300: FS, M 4. 1: FS - 45           45         13-Apr-19         27-May-19         507         53-1800: FS, 53-1600: FS         53-2100: FS, 53-2200: FS	
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, 53-1600: FS, 53-1600: FS, 53-2100: FS       53-2100: FS         75       16-Mar-20       29-May-20       214       53-2000: FS, 41-1500: FS, 53-1900: FS       32-1500: FS, 54-2800: FS, M4. 3: FS	
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, 53-1900: FS       54-2800: FS         55       02-Nov-19       26-Dec-19       258       41-1500: FS, 53-1500: FS       54-4000: FS	
5.03.1       53-2400       Leachate Pipe Connection (Cell 1 to LTP)         SA2.5.03.4       Landfill Cell 4         5.03.4       53-2500       Provide Temporary Leachate Pipe on Cell 4 Area	30         09-Mar-20         07-Apr-20         266         23-2500: FS, 54-1000: SS         54-2800: FS           30         09-Jul-20         07-Aug-20         144         23-2500: FS, 63-2600: SS -90         54-2800: FS, M 3. 3: FS	
SA2.5.03.5       Drainage - Surface Run-Off         5.03.5       53-2600       Construct Cut-Off Channel 12A	740         16-Jan-19         24-Jan-21         839         600         16-Jan-19         16-Mar-19         9         11-1100: FS, 23-2800: FS         53-2700: FS	
5.03.553-2700Connect Cut-Off Channel 12A to DP65.03.553-2800Diversion from Existing Trapezoidal Channel into Channel 12A	20         17-Mar-19         05-Apr-19         9         53-2600: FS, 31-1400: FS, 23-1900: FS         53-2800: FS           20         06-Apr-19         25-Apr-19         9         53-2700: FS         53-2700: FS         53-1400: FS, 53-1500: FS, 53-2900: FS, 63-1000: FS, 63-1000: FS, 63-1000: FS, 63-1900: FS, M 3. 3: FS	
5.03.553-2900Removal of Existing Trapezoidal Channel along Eastern Bund5.03.553-3000Cut-Off Channel C4 Diversion to Cut-Off Channel 17-25.03.553-3100Cut-Off Channel X5 on Buttress Wall, Cell 4, Cell 3	30       26-Apr-19       25-May-19       9       53-2800: FS       53-4200: FS         45       16-Jan-19       01-Mar-19       83       11-1300: FS, 23-2800: FS       53-1000: FS, 53-1200: FS         90       05-Apr-20       03-Jul-20       289       53-1000: FS, 53-1200: FS       53-3200: FS	
5.03.553-3200Temporary Diversion Cut-Off Channel X5 to 12A5.03.553-3300Culvert X5 (5m long) & Perm Connection of Cut-Off Channel X5	90         05-Apr-20         03-Jul-20         289         53-1000: FS, 53-1200: FS         53-3200: FS           20         04-Jul-20         23-Jul-20         289         53-3100: FS, 23-1900: FS         53-3300: FS, M 3. 4: FS           30         26-Dec-20         24-Jan-21         134         53-4100: FF, 63-1900: FS, 53-3200: FS         32-1500: FS	
5.03.553-3400Construct Perimeter Channel X6 on Eastern Bund & Southern Bund of Cell 15.03.553-3500Construct Perimeter Channel X6 on Eastern Bund of Cell 2	50       02-Nov-19       21-Dec-19       249       53-1400: FS, 53-1500: FS       53-3500: FS         50       20-Feb-20       09-Apr-20       189       63-1000: FS, 53-3400: FS       53-3600: FS	
5.03.553-3600Construct Perimeter Channel X6 Eastern Bund of Cell 35.03.553-3700Culvert X6 (25m long) at Cell 1 Southern Bund5.03.553-3800Perimeter Channel (X9B) at Cell 1 Southern & Western Bund	50         09-Jun-20         28-Jul-20         129         63-1900: FS, 53-3500: FS         53-3900: FS           75         25-Jul-19         07-Oct-19         1314         53-1500: FS         53-3900: FS           45         25-Jul-19         07-Sep-19         1344         53-1500: FS, 53-1600: FS         53-1500: FS	
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       53-4000: FF, 53-4100: FF, 53-6000: FS, M 9. 1: FS -90, M 9.         180       29-Jul-20       24-Jan-21       129       11-1100: FS, 23-1900: FS, 11-1200: FS, 53-3900: FF       53-6000: FS, M 9. 3: FS -90, M 9. 4: FS	
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, 53-3900: FF         53-3300: FF, 53-6000: FS, M 9. 1: FS -90, M 9. 2: FS	
SA2.5.03.6       Drainage - Ground Water         5.03.6       53-4200         Construct Groundwater Collection Pipe along Cells X1 & X2 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	
5.03.653-4300Construct Groundwater Collection Pipe along Cell X3 Eastern Bund5.03.653-4400Construct Groundwater Collection Pipe along Intercell Bund X2/X35.03.653-4500Construct Manhole MH-X1	50       04-Aug-19       22-Sep-19       159       53-4200: FS       53-4400: FS, 63-1900: FS         50       23-Sep-19       11-Nov-19       209       53-4300: FS       53-4500: FS, 63-1200: FS         30       12-Nov-19       11-Dec-19       209       53-4400: FS       52-2300: FS, M 9. 5: FS	
SA2.5.03.7       Utilities - Distribution within New Infrastructure Area         5.03.7       53-4600       Power Supply HV Works (Transformer & HV switchgear)	391         11-Aug-19         04-Sep-20         276           5         30-Jun-20         04-Jul-20         0         54-3000: FS         12-1200: FS	
5.03.753-4700Power Distribution, LV Power Supply Works5.03.753-4800Sewerage (Collection to LTP)	2         05-Jul-20         06-Jul-20         0         54-3100: FS, 12-1200: FS         12-1000: FS           60         07-Jul-20         04-Sep-20         271         54-1000: FS, 54-3100: FS, 54-3300: FS, 54-4100: FS         12-1100: FS, 53-6100: FS	
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         12-1100: FS, 53-6100: FS           30         07-Jul-20         05-Aug-20         6         54-1000: FS, 54-4100: FS, 54-4600: FS         12-1100: FS, 32-2100: FS           115         12-Mar-20         04-Jul-20         2         53-6800: FS         12-1000: FS	
5.03.7         53-5200         Water Supply (Fresh & Salt)           5.03.7         53-5300         Telecom & Network	110         12-Mar-20         04-Jul-20         338         53-6600: FS, 53-6700: FS         12-1100: FS           45         11-Aug-19         24-Sep-19         622         53-6400: FS         12-1100: FS	
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	15       22-Jun-20       06-Jul-20       176       54-1000: FF       54-2800: FS         703       27-Feb-19       29-Jan-21       129       End       End         459       27-Feb-19       30-May-20       43       End       End	
5.03.8.U1 53-5500 Excavate Trench for CLP Cable	100         13-May-19         20-Aug-19         194         23-2900: FS         53-5800: FS, 54-1000: SS, 54-4100: SS, 54-4600: SS, M10.           1: FS -60, M10. 2: FS -30, M10. 3: FS         53-5800: FS, 54-1000: SS, 54-4600: SS, M10.         1: FS -60, M10. 2: FS -30, M10. 3: FS	
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)	30         01-May-20         30-May-20         43         53-5800: FS         54-1000: FF, 54-4100: FF, 54-4600: FF           200         27-Feb-19         14-Sep-19         229         32-2400: FS         54-3000: FS           60         02-Mar-20         30-Apr-20         0         53-5500: FS, 54-2900: FS, 32-2400: FS, 53-5900: FF 15         53-5600: FS, 54-3000: FS	
5.03.8.U1 53-5900 CLP HV associated equipment installation SA2.5.03.8.U2 DSD	Image: Non-State         Image: Non-State<	
5.03.8.U2         53-6000         Connection to Storm Drain System           5.03.8.U2         53-6100         Connection to Foul Drain System	5         25-Jan-21         29-Jan-21         129         53-4100: FS, 53-4000: FS, 53-3900: FS         32-1500: FS           5         05-Sep-20         09-Sep-20         271         53-4800: FS, 53-4900: FS         32-1500: FS	
SA2.5.03.8.U3       Telecom         5.03.8.U3       53-6200       Excavate Trench for PCCW	100         13-May-19         20-Aug-19         327           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	
5.03.8.U353-6300Backfill Trench after PCCW Cable Laying5.03.8.U353-6400Laying Cables & Connection	10         11-Aug-19         20-Aug-19         327         53-6400: FS         54-1000: FF, 54-4100: FF, 54-4600: FF           30         12-Jul-19         10-Aug-19         327         53-6200: FS         53-6200: FS         53-6300: FS, 53-6300: FS	
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 & Mater Installation	304         13-May-19         11-Mar-20         338           60         13-May-19         11-Jul-19         216         23-2900: FS           30         11-Eeb-20         11-Mar-20         338         53-6500: FS	
5.03.8.U4         53-6600         Connection for Fresh Water & Meter Installation           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       53-5200: FS         30       11-Feb-20       11-Mar-20       338       53-6500: FS, 32-2300: FS       53-5200: FS         30       11-Feb-20       11-Mar-20       2       53-6500: FS, 32-2300: FS       53-5100: FS         30       11-Feb-20       11-Mar-20       2       53-6500: FS, 32-2300: FS       53-5100: FS	
5.03.8.U4       53-6900       Connection for Cooling Tower & Meter Installation         SA2.5.03.8.U5       HyD Lighting	30       11-Feb-20       11-Mar-20       117       53-6500: FS, 32-2300: FS       54-2700: FS, 54-3900: FS         120       07-Jul-20       03-Nov-20       216       54-2700: FS, 54-3900: FS	
5.03.8.U5       53-7000       Installation of Public Street Lighting / Handover         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         Construction & Access Board	120       07-Jul-20       03-Nov-20       216       54-4100: FS, 54-4600: FS, 54-1000: FS       32-1500: FS         890       31-Dec-18       07-Jul-21       0       0         554       31-Dec-18       06-Jul-20       36       22-1500: FS       52-1000: FS         120       00 Mar; 20       06       120-100: FS       52-52-000: FS       52-5000: FS       52-2000: SS       52-2000: SS	
5.04.A       54-1000       General Area & Access Road         5.04.A       54-1100       Carpark & Supporting Area	120       09-Mar-20       06-Jul-20       6       23-1300: FS, 53-5500: SS, 53-5600: FF, 53-6200: SS, 53-5200: SS, 53-5400: FS, 53-2400: SS, 53-4800: FS, 53-4900: FS, 53-6300: FF, 12-1000: FF, 11-1100: FS, 54-1100: FF, 53-5000: FS, 53-5400: FF, 53-7000: FS, 53-7000: FS, 68-1700: FS         60       31-Dec-18       28-Feb-19       64       23-1300: FS, 11-1100: FS       32-1500: FS, M 5.11: FS -30, M 5.12: FS, 54-1000: FF, 53-7000: FS, 53-5000: FS, 53-7000: FS,	
5.04.A 54-1200 Diesel Fuel Tanks	60         08-May-20         06-Jul-20         36         23-1300: FS, 23-5200: FS, 12-1000: FF, 11-1100: FS         32-2200: FS	
5.04.A         54-1300         EPD Building           5.04.A         54-1400         Fire Service Tank	270       30-Apr-19       24-Jan-20       44       23-1300: FS, 23-5200: FS, 11-1100: FS, 54-1700: SS 60       32-2100: FS, M 5. 4: FS -135, M 5. 5: FS, 12-1000: FS, 54-1600: SS 60         270       29-Jun-19       24-Mar-20       44       23-1300: FS, 23-5200: FS, 11-1100: FS, 54-1300: SS 60       32-2100: FS, M 5. 10: FS, 12-1000: FS, 12-1000: FS, 54-1600: SS 60	
5.04.A         54-1500         GVL Building           5.04.A         54-1600         Laboratory Building	Image: Mark and	
5.04.A54-1600Laboratory Building5.04.A54-1700Maintenance Building & Area	270       28-Aug-19       23-May-20       44       23-1300: FS, 23-5200: FS, 11-1100: FS, 54-1400: SS 60       32-2100: FS, M 5. 6: FS -135, M 5. 7: FS, 12-1000: FS, 32-2200: FS         270       01-Mar-19       25-Nov-19       44       23-1300: FS, 23-5200: FS, 11-1100: FS, 54-1500: SS 60       32-2100: FS, M 5. 8: FS -135, M 5. 9: FS, 12-1000: FS, 54-1300: FS, 54-1300: SS 60	
5.04.A         54-1800         Storage Facility & Area           5.04.A         54-1900         Waste Oil Tanks	60       01-Mar-19       29-Apr-19       64       23-1300: FS, 11-1100: FS, 54-1100: FS       32-1500: FS, M 5.11: FS -30, M 5.12: FS, 54-1000: FF, 54-2000: FS         90       08-Apr-20       06-Jul-20       36       23-1300: FS, 23-5200: FS, 12-1000: FF, 11-1100: FS       32-2200: FS	
5.04.A     54-2000     Water Service House	60         30-Apr-19         28-Jun-19         64         23-1300: FS, 23-5200: FS, 11-1100: FS, 54-1800: FS         32-2100: FS, M 5.10: FS, 12-1000: FS, 54-4400: FS	
SA2.5.04.B       Part X1 Area B         SA2.5.04.B.1       BioPlant Building         5.04.B.1       54-2100       LTP BioPlant Building	890         31-Dec-18         07-Jun-21         0         4           330         17-Jan-19         12-Dec-19         243         243           330         17-Jan-19         12-Dec-19         243         23-1300: FS, 23-5200: FS, 11-1100: FS, 32-2200: FS, 32-2200: FS, M 6. 2: FS -165, M 6. 3: FS           330         17-Jan-19         12-Dec-19         243         23-1300: FS, 23-5200: FS, 11-1100: FS, 32-2200: FS, M 6. 2: FS -165, M 6. 3: FS	
SA2.5.04.B.2       Leachate Treatment Plant         5.04.B.2       54-2200       Main Plant Area included Civil works	589         31-Dec-18         10-Aug-20         21           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. 1: SF 30, M 6. 4: FS -137, M 6. 5: FS	
5.04.B.2     54-2300     MEP Installation	220         01-Oct-19         07-May-20         0         41-2100: FS, 41-1800: FS, 22-2100: FS, 54-2200: FS, 12-1000: FS 60, 32-1900: FS, 54-2600: FS, M 6. 8: FS -110, 11-1100: FS	
5.04.B.2         54-2400         SBR Tanks           5.04.B.2         54-2500         Ammonia Stripper           SA2.5.04.B.3         LTP - Test & Commission	100       01-Oct-19       08-Jan-20       236       41-2400: FS, 54-2200: FS       54-2600: FS, M 6. 6: FS         315       01-Oct-19       10-Aug-20       21       41-3000: FS, 54-2200: FS       54-2600: FS, M 6. 8: FS - 150, M 6. 9: FS         301       11-Aug-20       07-Jun-21       0       0	
SA2.5.04.B.3         LTP - Test & Commission           5.04.B.3         54-2600         Dry testing           5.04.B.3         54-2700         Wet testing	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       23-6600: FS -150, 23-6900: SS, 54-2700: FS, M11. 1: FS         75       25-Sep-20       08-Dec-20       21       54-2600: FS, 12-1200: FS, 53-6900: FS, 31-2200: FS, 54-2800: FS, M11. 2: FS	
5.04.B.3         54-2700         Wet testing           5.04.B.3         54-2800         Operational testing	160         30-Dec-20         07-Jun-21         0         54-2700: FS, 53-2400: FS, 53-2500: FS, 53-2100: FS, 53-21	
SA2.5.04.C Part X1 Area C SA2.5.04.C.1 LFG - Power Supply Building	Image: Section of the sectio	
5.04.C.1     54-2900     LFG Building (with Transformer Room)       5.04.C.1     54-3000     Transformer & HV Swtichgear Installation	335         17-Jan-19         17-Dec-19         0         23-1300: FS, 23-3500: FS, 11-1100: FS, 31-1000: FS         53-5800: FS, 53-5900: FS, 54-3000: FS, 54-3100: FS, M 7. 6: FS           60         01-May-20         29-Jun-20         0         54-2900: FS, 41-1200: FS, 53-5800: FS, 53-5700: FS         53-4600: FS, M 7. 4: FS - 30, M 7. 5: FS, M 7. 5: FF	
5.04.C.1 54-3100 MEP Installation, with T&C	75         18-Dec-19         01-Mar-20         125         54-2900: FS         32-1400: FS, 32-2100: FS, 53-4700: FS, 53-4800: FS, M 7. 4: FS -30, M 7. 5: FS	
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         \$4-3300: FS, 54-3400: FS, 54-3500: FS, 54-3600: FS, 54-3600: FS, 54-3700: FS, 54-3700: FS, 54-3700: FS, 54-3800: FS, M 7. 1: SF 30, M 7. 2: FS -200, M 7. 3: FS	
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       32-2000: FS, 53-4800: FS, 54-3900: FS, M 7. 4: FS -80, M 7. 5: FS         15       19-Jan-20       02-Feb-20       155       23-5800: FS, 54-3200: FS       54-3900: FS, M 7. 4: FS -8, M 7. 5: FS	
5.04.C.2     54-3500     Pre-treatment       5.04.C.2     54-3600     Flares (incl. PLC control, interlink to Towngas PF & LTP)	60         19-Jan-20         18-Mar-20         110         41-3900: FS, 54-3200: FS         54-3900: FS, M 7. 4: FS -30, M 7. 5: FS           125         19-Jan-20         22-May-20         45         41-3300: FS, 54-3200: FS         54-3900: FS, M 7. 4: FS -60, M 7. 5: FS	
5.04.C.2       54-3700       LFG Engine (incl. on-grid protection, PLC control, turning)         5.04.C.2       54-3800       Cooling System         SA2.5.04.C.3       LFG = Test & Commission	110       21-Feb-20       09-Jun-20       27       41-3600: FS, 54-3200: FS       54-3900: FS, M 7. 4: FS -60         45       19-Jan-20       03-Mar-20       125       22-1500: FS, 54-3200: FS       54-3900: FS, M 7. 4: FS -25, M 7. 5: FS         176       07-Jul-20       29-Dec-20       0       0	
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         23-7000: SS - 150, 23-7300: SS, 54-4000: FS, M11. 1: FS - 30, 54-3800: FS, 12-1200: FS, 53-6900: FS, 31-2200: FS, 31-2200: FS, M11. 2: FS	
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, 53-2300: FS, 53-2300: FS, 63-4800: FS, 63-4800: FF, 63-4900: FS, 53-1100: FS, 54-3900: FS, 23-7200: FS         32-1500: FS, 54-2800: FS, 63-4800: FF, 63-4900: FS, 53-1100: FS, 54-3900: FS, 53-1100: FS, 54-3900: FS, 53-1100: FS, 54-3900: FS, 53-1100: FS, 54-3900: FS, 53-1200: FS	
SA2.5.04.D Part X1 Area D	374         29-Jun-19         06-Jul-20         6	



/lilestone	5		
	ical Remaining Work	Page : 3 of 4	
<b>—</b> F	Remaining Work		South-East N
500 0		00 29-JUI-21 26-5ep	-21 339 32-1300. FS, 12-1300. FS, 23-2200. FS 63-3000: FS, 63-4300: FS, M12. 4: FS -30, M12. 5: F
	6.02.9 62-1200 Existing SENT LFG		-21         339         32-1500: FS, 12-1300: FS, 23-2200: FS         63-3000: FS, 63-4500: FS, M12. 4: FS -30, M12. 5: FI
507	6.02.9 62-1100 Existing SENT LTP	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: F
<b>506</b> 6	6.02.9 62-1000 Existing SENT General Infrastructure	acility & Building 60 09-Jul-21 06-Sep	239         32-2100: FS, 12-1300: FS         23-2000: SS -90, 63-2800: FS, 63-2900: FS, 63-3000           63-4300: FS, M12. 4: FS -30, M12. 5: FS
	A2.6.02.9 Demolition of SENT Infrastructure Area	80 09-Jul-21 26-Sep	
	A2.6.02 Advance Works	80 09-Jul-21 26-Sep	-21 339
503 <b>SA</b>	2.6 Construction (Remaining Works)	1474 01-Apr-19 13-Apr	-23 30
502 E	5.08.S 58-1300 Establishment of Screen Planting	270 01-Apr-19* 26-Dec	-19 529 58-1200: SS 32-1500: FS
	5.08.S 58-1200 Advance Screen Planting		-19 529 23-7900: FS, 31-1100: FS, 11-1500: FS 58-1300: SS, M 3. 2: FS
	A2.5.08.S Area S	270 01-Apr-19 26-Dec	-19 529
<b>499</b> F	5.08.N 58-1100 Establishment of Screen Planting	270 01-Apr-19* 26-Dec	-19 529 58-1000: SS, 14-1800: FS 32-1500: FS
<b>98</b> 5	5.08.N 58-1000 Advance Screen Planting	90 01-Apr-19* 29-Jun	-19 529 23-7900: FS, 31-1100: FS, 11-1500: FS 14-1800: SS -60, 58-1100: SS, 68-1600: SS 30, M 3.
	A2.5.08.N Area N	270 01-Apr-19 26-Dec	
96 <b>S</b> A	A2.5.08 Landscape Works - Advance Screen Planti	g in CWB Country Park 270 01-Apr-19 26-Dec	-19 529
1 <b>95</b> 55	5.04.E 54-4700 Guard House & Entrance Gate	100 26-Jan-20 04-May	-20 63 23-1300: FS, 23-5200: FS, 11-1100: FS, 11-1200: FS, 32-2100: FS, M 8. 2: FS, 12-1000: FS 54-4500: SS 30
			12-1000: FF, 11-1100: FS, 11-1200: FS
	5.04.E 54-4600 General Area & Access Road		-20 6 53-5500: SS, 53-5600: FF, 53-6200: SS, 53-6300: FF, 32-2100: FS, 53-4900: FS, 53-5000: FS, 53-7000: FS
193	A2.5.04.E Part X1 Area E & Part X2	163 26-Jan-20 06-Jul	
<b>92</b> 5	5.04.D 54-4500 Wheel Wash Bath	75 27-Dec-19 10-Mar	-20 63 23-1300: FS, 23-5200: FS, 41-4500: FS, 11-1100: FS, 32-2100: FS, M 8. 3: FS, 12-1000: FS, 54-4700: SS 3 54-4200: SS 60
<b>491</b> 5	5.04.D 54-4400 Weighmaster House	120 29-Jun-19 26-Oct	-19 64 23-1300: FS, 23-5200: FS, 11-1100: FS, 54-2000: FS 32-2100: FS, M 8. 1: FS, 12-1000: FS, 54-4300: SS 6
<b>490</b> 5	5.04.D 54-4300 Weighbridge	75 29-Aug-19 11-Nov	-19         63         41-4200: FS, 23-1300: FS, 23-5200: FS, 11-1100: FS, 54-4200: FS, M 8. 6: FS -40, M 8. 7: FS, 54-4200: SS 54-4400: SS 60
<b>89</b> 5	5.04.D 54-4200 VWF Building	120 28-Oct-19 24-Feb	-20 63 23-1300: FS, 23-5200: FS, 41-4500: FS, 11-1100: FS, 54-4300: SS 60 32-2100: FS, M 8. 4: FS, M 8. 6: FS -60, M 8. 7: FS, 11-1100: FS, 54-4500: SS 60
<b>.</b>	J.04.D 544 100 General Alea & Access Road		53-6300: FF, 12-1000: FF, 11-1100: FS 53-7000: FS, M 8. 5: FS
	A2.5.04.D         Part X1 Area D           5.04.D         54-4100         General Area & Access Road	374 29-Jun-19 06-Jul	-20 6

# WBS Path Activity Activity Name	Dur Start Finish Total Predecessor Details	Successor Details		2018		21	010		2	120		2021			202	22		2023
	Float		Q2	Q3	Q4 Q1	Q2	Q3	Q4 Q1	1 Q2	Q3	Q4 Q1	Q2	Q3 Q4	Q1	Q2	Q3	Q4	Q1 Q2 G
509 SA2.6.03 Civil Engineering Works	1259 02-Nov-19 13-Apr-23 30																	
510         SA2.6.03.2         Landfill Cell 2           511         6.03.2         63-1000         Earth bund (Eastern)	449         02-Nov-19         23-Jan-21         810           110         02-Nov-19         19-Feb-20         9         11-1100: FS, 23-2500: FS, 53-4200: FS, 53-1400: FS,	53-3500; FS, 63-1500; FS, 63-1800; FS, 63-1900; FS,																
	53-2800: FS	63-2000: FS, 63-2100: FS, 63-2200: FS, M12. 1: FS -50, M12.																
		2: FS, 63-1100: FS																
<b>512</b> 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.																
	63-1000: FS	63-3600: FS, 63-1200: FS																
513 6.03.2 63-1200 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,	63-1500: FS																
	53-4400: FS, 63-1100: FS																	
<b>514</b> 6.03.2 63-1300 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 Collection 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 6.03.2 63-1700 Install Leachate Force Main	75 24-Jul-20 06-Oct-20 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 SA2.6.03.3 Landfill Cell 3	714 20-Feb-20 02-Feb-22 435																	
<b>521</b> 6.03.3 63-1900 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																
	55-2000. FS, 05-4200. FS	F3 -30, W12. 2. F3, 03-2000. F3 -43, 00-2200. F3																
522 6.03.3 63-2000 Earth bund (Western)	110 25-Apr-20 12-Aug-20 19 11-1100: FS, 63-1000: FS, 63-1900: FS -45	63-2300: FS, 63-2400: FS, 63-2600: FS, 63-3700: FS,																
		63-2100: FS -45																
<b>523</b> 6.03.3 63-2100 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																
<b>524</b> 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																
<b>525</b> 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																
<b>526</b> 6.03.3 63-2400 Lining Works	100 01-Oct-21* 08-Jan-22 435 41-1500: FS, 63-2000: FS, 63-2100: FS,	63-2500: FS, M12. 3: FS																
	63-1500: FS																	
527         6.03.3         63-2500         Protective Stone Laying & Leachate Collection Pipe	25 09-Jan-22 02-Feb-22 435 63-2400: FS, 41-1500: FS, 63-2300: FS	32-1700: FS, M12. 3: FS																
528 6.03.3 63-2600 Install Leachate Force Main	75 07-Oct-20 20-Dec-20 9 63-2000: FS, 41-1500: FS, 63-2300: FS	53-2500: SS -90, 54-2800: FS, M12. 3: FS																
529 6.03.3 63-2700 Install Landfill Gas Pipe on earth bund	35 09-Jun-20 13-Jul-20 58 41-1500: FS, 63-1900: FS	54-4000: FS, M12. 3: FS																
530 SA2.6.03.4 Landfill Cell 4	584 07-Sep-21 13-Apr-23 30																	
531 6.03.4 63-2800 Remaining Portion of Buttress Wall	120 07-Sep-21 04-Jan-22 494 62-1000: FS																	
532 6.03.4 63-2900 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																
<b>524</b> 0.02.4 0.2.2400 Dump Chatter (DO#4V)	63-4100: FS	63-3300: FS, 63-3400: FS																
<b>534</b> 6.03.4 63-3100 Pump Station (PS#4X)	45 05-May-22 18-Jun-22 239 63-3000: FS, 63-2900: FS																	
<b>535</b> 6.03.4 63-3200 Lining Works	135 01-Oct-22* 12-Feb-23 0 41-1500: FS, 63-2900: FS	63-3300: FS, M12. 6: FS																
536 6.03.4 63-3300 Protective Stone Laying & Leachate Collection Pipe	60         13-Feb-23         13-Apr-23         0         41-1500: FS, 63-3200: FS, 63-3100: FS	12-1900: FS, 32-1800: FS, M12. 6: FS																
537 6.03.4 63-3400 Install Leachate Force Main & Remove Temporary Leachate Pipe	30 19-Jun-22 18-Jul-22 269 41-1500: FS, 63-2900: FS, 63-3100: FS	12-1900: FS, 32-1800: FS, M12. 6: FS																
538         SA2.6.03.5         Drainage - Surface Run-Off           539         6.03.5         63-3500         Perimeter Channel (X9A) at Cell 2 Western Bund	750         16-Jan-20         03-Feb-22         464           15         09-Jun-20         23-Jun-20         1054         63-1100: FS	12-1900: FS																
		63-4000: FS																
540 6.03.5 63-3600 Perimeter Channel (X10A) at Cell 2 Western Bund	30 09-Jun-20 08-Jul-20 1029 63-1100: FS									<b></b>								
541 6.03.5 63-3700 Perimeter Channel (X10A) at Cell 3 Western Bund	30 13-Aug-20 11-Sep-20 964 63-2000: FS	63-4000: FS																
542         6.03.5         63-3800         Perimeter Channel (X10A) at Cell 4 Western Bund	20 05-Jan-22 24-Jan-22 464 63-2900: FS	63-4000: FS																
543 6.03.5 63-3900 Perimeter Channel (X10C) at Cell 4 Western Bund	15 05-Jan-22 19-Jan-22 469 63-2900: FS	63-4000: FS																
544   6.03.5   63-4000   Connection to Existing DP3	10 25-Jan-22 03-Feb-22 464 63-3900: FS, 63-3600: FS, 63-3700: FS, 63-3800: FS	12-1900: FS																
545 6.03.5 63-4100 Remove Cut-Off Channel C-7 at bottom of Buttress Wall	30 09-Jun-21 08-Jul-21 419 63-2900: SS -90	63-3000: FS																
546     6.03.5     63-4200     Temporary Channel (X7T) at SENT Infrastructure Area	30 16-Jan-20 14-Feb-20 14 63-1300: FS	63-1900: FS, 63-2100: FS																·
547 SA2.6.03.6 Drainage - Ground Water	85 07-Sep-21 30-Nov-21 529																	
548         6.03.6         63-4300         Construct Temporary Channel (TC-1), from MH-1 to Existing UC-825	50         07-Sep-21         26-Oct-21         529         23-1900: FS, 11-1300: FS, 62-1000: FS	63-4400: FS																
549 6.03.6 63-4400 Divert GW at MH-1 to TC-1	5 27-Oct-21 31-Oct-21 529 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 SA2.6.03.8 Utilities - Works Associated with Utilities Undertakers	255 15-Nov-20 27-Jul-21 655																	
552 SA2.6.03.8.U1 CLP	210 30-Dec-20 27-Jul-21 655																	
553 6.03.8.U1 63-4600 LFG Generator On-grid Testing	180         30-Dec-20         27-Jun-21         655         32-2500: FS, 12-1200: FS, 54-4000: FS	63-4700: FS																
554 6.03.8.U1 63-4700 LFG Generator On-grid Inspection & Verify	30 28-Jun-21 27-Jul-21 655 63-4600: FS	12-1900: FS																
555 <u>SA2.6.03.8.U6 TownGas</u>	55 15-Nov-20 08-Jan-21 855	00.0000.50											·					·
556 6.03.8.U6 63-4800 Laying Gas Mains (from LFG to Town Gas PF)	45 15-Nov-20 29-Dec-20 855 54-4000: FF	63-4900: FS																
557 6.03.8.U6 63-4900 Gas Meter Relocation & Connection at LFG	10 30-Dec-20 08-Jan-21 855 63-4800: FS, 54-4000: FS	12-1900: FS																
558 SA2.6.04 Building & E&M Works	661 01-Oct-19 22-Jul-21 660																	
559         SA2.6.04.C Part X1 Area C           560         SA2.6.04.C.02 LFG Treatment Plant	661         01-Oct-19         22-Jul-21         660           661         01-Oct-19         22-Jul-21         660																	
561         6.04.C.02         64-1000         GHS600 Blower 601 C Relocation	15 08-Jul-21 22-Jul-21 660 32-1500: FS	12-1900: FS																
562 6.04.C.02 64-1100 Absorption Chiller (Optional)	90 01-Oct-19 29-Dec-19 1231 54-2200: FS	12-1900: FS																
563 SA2.6.08 Landscape Works	613 01-Apr-19 03-Dec-20 891																	
564 SA2.6.08.1 SENT Area - Tree Removal & Transplanting	240 01-Apr-19 26-Nov-19 1264																	
565         6.08.1         68-1000         Access trees condition and select for transplanting	30 01-Apr-19* 30-Apr-19 1264 14-1300: FS	68-1100: FS, 68-1200: FS, 68-1400: FS																
566     6.08.1     68-1100     Prepare new site to receive trees	90 01-May-19 29-Jul-19 1264 68-1000: FS	68-1200: SS																
567 6.08.1 68-1200 Transplant selected trees	120 01-May-19 28-Aug-19 1264 68-1000: FS, 68-1100: SS	68-1300: FS																
568 6.08.1 68-1300 Prune trees prior to removal from Cell 4	90 29-Aug-19 26-Nov-19 1264 68-1200: FS	12-1900: FS																
569 6.08.1 68-1400 Tree Felling - Part X3	90 01-May-19 29-Jul-19 1384 23-8200: FS, 31-1600: FS, 68-1000: FS	12-1900: FS																
570 SA2.6.08.2 SENTX Area - Trial Nursery & Tree Planting	583 01-May-19 03-Dec-20 891																	
571         6.08.2         68-1600         Trial Nursery	300         01-May-19         24-Feb-20         1174         14-1800: FS, 58-1000: SS 30	12-1900: FS, M 3. 2: FS					· · · · · · · · · · · · · · · · · · ·	+										-
572 6.08.2 68-1700 Landscaping in New Infrastructure Area	150 07-Jul-20 03-Dec-20 891 54-1000: FS, 23-7600: FS	12-1900: FS																

Remaining Work		South-East New Territories Land Fill Extension (SA2-SENTX)	Date	Revision	Checked	Approved
<ul> <li>Critical Remaining Work</li> <li>Milestone</li> </ul>	Page : 4 of 4		11-May-18	SENTX-GVL-W-PB-ZZ-0001 Rev. I01		
		Baseline Programme	20-Jul-18	SENTX-GVL-W-PB-ZZ-0001 Rev. I02 (Detailed)		

Annex B

### Environmental Mitigation Implementation Schedule

#### Annex B Environmental Mitigation Implementation Schedule

EIA Ref.	Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	the m	neasu	nplement re? <sup>(1)</sup> O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
Air Quali	ty – Const	truction Phase								
4.8.1	AQ1	<ul><li>Blasting</li><li>The area within 30m of the blasting area will be wetted prior to blasting.</li></ul>	dust nuisance an bla	0	SENTX Contractor		✓		Air Pollution Control (Construction Dust) Regulations	Not applicable. Blasting is not required in the latest landfill design
		• 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.								acorge
		• loose material and stones in the Site will be removed prior to the blast operation								
		• During blasting, blast nets, screens and other protective covers will be used to prevent the projection of flying fragments and material resulting from blasting								
4.8.1	AQ2	<ul> <li><u>Rock Drilling</u></li> <li>Watering will be carried out at the rock drilling activities to avoid fugitive dust emissions.</li> </ul>	To minimise potential dust nuisance	Rock drilling area	SENTX Contractor		~		Air Pollution Control (Construction Dust) Regulations	Not applicable. Rock drilling is not required in the latest landfill design

(1) D=Design; C=Construction; O/R=Operation/Restoration; A=Aftercare

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement	the	meas	implen oure? <sup>(1)</sup>		What requirements or standards for the	Implementation Status and Remarks	
			Measure & Main Concerns to address		the measure?	D	С	O/R	А	measure to achieve?		
4.8.1	AQ3	Site Access Road	1		SENTX		✓			Air Pollution Control	Reminder was given to	
		• The main haul road will be kept clear of dusty materials or sprayed with water.	dust nuisance	road	Contractor					(Construction Dust) Regulations	Contractor	
		<ul><li>The main haul road will be paved</li></ul>								HKAQO and EIAO- TM Annex 4		
		with aggregate or gravel.										
		• Vehicle speed will be limited to 10kph.										
4.8.1	AQ4	Stockpiling of Dusty Materials	To minimise potential	All construction works area	SENTX		~			Air Pollution Control	Implemented	
		• Any stockpile of dusty materials will be covered entirely by impervious			Contractor					(Construction Dust) Regulations		
		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.								HKAQO and EIAO- TM Annex 4		
4.8.1	AQ5	Loading, unloading or transfer of dusty materials	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓			Air Pollution Control (Construction Dust)	Deficiency of mitigation measures	
		All dusty materials will be sprayed								Regulations	but rectified by the	
		with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.								HKAQO and EIAO- TM Annex 4	Contractor	
4.8.1	AQ6	Site Boundary and Entrance	To minimise potential	Site boundary			✓			Air Pollution Control	Not applicable	
		• Where a site boundary adjoins a road, street, service lane or other area	dust nuisance a	and entrance	Contractor					(Construction Dust) Regulations		
		accessible to the public, hoarding of height not less than 2.4m from								HKAQO and EIAO-		

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?	When to implement the measure? <sup>(1)</sup> D C O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		ground level will be provided along the entire length of that portion of the site boundary except for the site entrance or exit.	Concerns to address				TM Annex 4	
4.8.1	AQ7	Excavation Works	To minimise potential		SENTX	$\checkmark$	Air Pollution Control	Implemented
		• Working area of any excavation or earth moving operation will be sprayed with water immediately before, during and immediately after the operation so as to ensure that the entire surface is wet.	dust nuisance	construction works area	Contractor		(Construction Dust) Regulations HKAQO and EIAO- TM Annex 4	
4.8.1	AQ8	<ul> <li>Building Demolition</li> <li>The area where the demolition works are planned to take place will be sprayed with water immediately prior to, during and immediately after the demolition activities.</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	Not applicable
		• 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	<ul> <li><u>Construction of the Superstructure of Building</u></li> <li>Effective dust screens, sheeting or netting will be provided to enclose the scaffolding from the ground level up to the highest level of the scaffolding.</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	Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement		meas	imple ure? <sup>(1)</sup>	I	What requirements or standards for the	Implementation Status and Remarks	
			Measure & Main Concerns to address		the measure?	D	С	O/R	А	measure to achieve?		
4.8.1	AQ10	Should a stone crushing plant be needed on site, the control measures recommended in the <i>Best Practicable</i> <i>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		•			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		•	✓		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 <i>Figure 11.3a</i>	SENTX Contractor		✓	~	~	-	Implemented	

Noise – Construction Phase

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?		meas	implem sure? <sup>(1)</sup> O/R	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
5.7.1	N1	Adopt good site practice listed below:	Concerns to address To minimise potential construction noise	All construction	SENTX Contractor		✓		 Noise Control Ordinance (NCO) and	Implemented
		• Only well-maintained plant will be operated on-site and plant should be serviced regularly during the construction program;	nuisance.	works area	Contractor				EIAO-TM Annex 5	
		• 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;								
		• 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	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement	the	meas	implemen sure? <sup>(1)</sup>	or standards for the	Implementation Status and Remarks
			Measure & Main Concerns to address		the measure?	D	С	O/R A	measure to achieve?	
5.8	N2	Weekly noise monitoring	Ensure noise generated from the project meets the criteria	At monitoring locations shown in <i>Figure 6.4a</i>	SENTX Contractor		✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5	Implemented
Water Qu	ality - Co	nstruction Phase								
6.8.1	WQ1	Construction Runoff								
		• Exposed soil areas will be minimised	To minimise potential	All	SENTX		$\checkmark$		ProPECC PN 1/94	Implemented
		to reduce the contamination of runoff and erosion.	water quality impacts arising from the construction works	construction works area	Contractor				EIAO-TM Annex 6	
5.8.1	WQ2	• Perimeter channels will be	To minimise potential	All	SENTX	$\checkmark$	$\checkmark$		ProPECC PN 1/94	Implemented
		constructed in advance of site formation works and earthworks and intercepting channels will be provided	water quality impacts arising from the construction works	construction works area	Contractor				Water Pollution Control Ordinance (WPCO)	
		for example along the edge of excavation.							EIAO-TM Annex 6	
6.8.1	WQ3	• Silt removal facilities, channels and	To minimise potential	All	SENTX		$\checkmark$		ProPECC PN 1/94	Deficiency of
		manholes will be maintained and the deposited silt and grit should be	water quality impacts arising from the	construction works area	Contractor				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		$\checkmark$		ProPECC PN 1/94	Reminder was given t
		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	Contractor
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 Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	the m	ieast	<b>mplemen</b> <b>ire?</b> <sup>(1)</sup> O/R A	t What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		and grease will pass through the oil interceptors.	water quality impacts arising from the	construction works area	Contractor				WPCO	
		merceptors.	construction works	works area					EIAO-TM Annex 6	
6.8.1	WQ6	• All sewer and drains will be sealed to	To minimise potential				√		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	Tunnel boring			✓		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		$\checkmark$		ProPECC PN 1/94	Not applicable
		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	
		excuvated stockpiles	from the SENTX Site	WOIKS					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?			o impleme sure? <sup>(1)</sup> O/R	or standards for the	Implementation Status and Remarks
6.8.2	WQ11	Sewage Effluents								
		• Sufficient chemical toilets will be provided for the construction workforce.	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.	-	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	

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?		o implement asure? <sup>(1)</sup> O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		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	<u>Measures for the Reduction of</u> <u>Construction Waste Generation</u>							
		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	T			1		MDO	
		The construction contractor will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the <i>Code of Practice on</i> <i>the Packaging, Handling and Storage of</i>	To ensure proper handling of chemical waste	SENTX Site	SENTX Contractor	v		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	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	the measu	mplement rre? <sup>(1)</sup> O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		Chemical Wastes.							
7.6.1	WM5	<u>Sewage</u>							
		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	V		WDO EIAO-TM Annex 7	Implemented
7.6.1 and	WM6	General Refuse							
SENTX latest design		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
		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.							
7.6.1	WM7	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	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? <sup>(1)</sup> D C O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
7.8	WM8	<ul> <li>waste reduction, reuse and recycling.</li> <li><u>Environmental Monitoring &amp; Audit</u> <u>Requirements</u></li> <li>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.</li> </ul>	To ensure that adverse environmental impacts are prevented	SENTX Site	SENTX Contractor	✓	WDO	Implemented
<i>Landfill</i> G 8.6.2 and SENTX latest design	as Hazar	ds – Design and Construction Phase 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	~	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	Location of the Measures	Who to implement		meas	o imple sure? (1)	)	What requirements or standards for the	e Status and Remarks
			Measure & Main Concerns to address		the measure?	D	С	O/R	А	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	✓	✓	*	✓	EIAO-TM Annex 7	Not applicable
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	To protect workers from landfill gas risk	Infrastructure Area	SENTX Contractor	~	~			EPD's Landfill Gas Hazards Assessment Guidance Note EIAO-TM Annex 7	Implemented

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?	When to implement the measure? <sup>(1)</sup> D C O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		between the waste and the new infrastructure area to monitor the migration of landfill gas, if any.						
Ecology –	Construct	tion Phase						
9.10.2	EC1	<ul> <li>Measures to control construction runoff:</li> <li>Exposed soil areas will be minimised to reduce the contamination of runoff and erosion;</li> </ul>	To minimise potential water quality impacts affecting ecological resources		SENTX Contractor	~	EIAO-TM Annex 16 ProPECC PN 1/94 Water Pollution Control Ordinance (WPCO) EIAO-TM Annex 6	Implemented
		• 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 edge of excavation;					-	Implemented
		• 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;					-	Deficiency of mitigation measures but rectified by the Contractor
		• Temporary covers such as tarpaulin will also be provided to minimise the generation of high suspended solids runoff;					-	Reminder was given Contractor

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?	When to the meas D C	-		What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		• The surface runoff contained any oil and grease will pass through the oil interceptors; and,							-	Not applicable
		• 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.							-	Implemented
9.10.2 and SENTX latest design	EC2	<ul> <li>Good Construction Practice:</li> <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	V			EIAO-TM Annex 16	Implemented
		• The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.								
9.12.1	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	¥	✓	✓	EIAO-TM Annex 16	Implemented

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?			<b>implement</b> <b>sure?</b> <sup>(1)</sup> O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		construction period.								
Landscap	e and Visu	al – 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	Not applicable
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		✓		EIAO-TM Annex 18	Implemented
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 Concerns to address	Location of the Measures	Who to implement the measure?			o implement sure? <sup>(1)</sup> O/R A	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.								
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	Not applicable
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	~	V		EIAO-TM Annex 18 and ETWBC 7/2002	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 implement the measure? <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		~		EIAO-TM Annex 18	Not applicable	
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</i> <i>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	~	•		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

Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3
			Surface Water Monitoring (pm)	Dust Monitoring	
			Noise Monitoring (pm)		
5	6	7	8	9	10
			Surface Water Monitoring (pm)		
			Noise Monitoring (pm)		
			Dust Monitoring		
12	13	14	15	16	17
		Dust Monitoring	Surface Water Monitoring (pm)		
			Noise Monitoring (pm)		
19	20	21	22	23	24
	Dust Monitoring		Surface Water Monitoring (pm)		
			Noise Monitoring (pm)		
	27	29	20	20	31
	27	28		50	51
Dust monitoring					
			Noise Monitoring (pm)		
	5	5 6 12 13 19 Dust Monitoring 20 26 27	5         6         7           12         13         14           Dust Monitoring         14           19         20         21           26         27         28	Image: state s	Image: Constraint of the second sec

August 2019

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

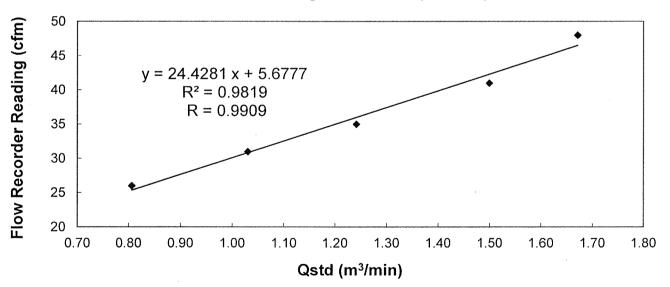
T: +852 2695 8318 F: +852 2695 3944 E: etl@ets-testconsult.com W: www.ets-testconsult.com

### **Calibration Report**

of High Volume Air Sampler

Manufacturer	:	Graseby 105	Date of Calibration		:	29 July 2019		
Serial No.	:	9795 (ET/ĖA/003/18)	Calibration Due Date			28 September 2019		
Method	:	Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual						
Results	:	Flow recorder reading (cfm)	48	41		35	31	26
		Qstd (Actual flow rate, m <sup>3</sup> /min)	1.67	1.50		1.24	1.03	0.81
		Pressure : 754.56 mm	Hg	Temp. :		303	ĸ	

### 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 :

Ner

LIAO, Yun Chao (Technician)

Checked by :

LAU, Chi Leung (Environmental Team Leader)

- END OF REPORT -



# 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

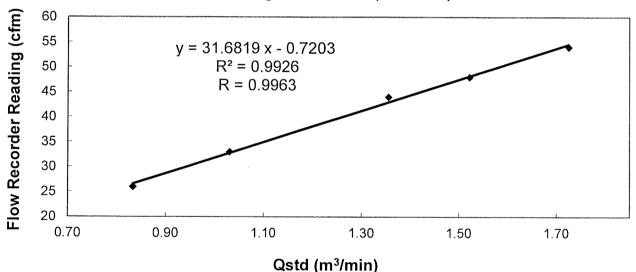
T: +852 2695 8318 F: +852 2695 3944 E: etl@ets-testconsult.com W: www.ets-testconsult.com

### Calibration Report of

High Volume Air Sampler

Manufacturer	:	Andersen G1051	Date of Calibration			29 July 2019		
Serial No.	:	1176 (ET/EA/003/05)	Calibration Due Date :			28 September 2019		
Method	:	Based on Operations Manual for the 5-point calibration using standard calibration kit manufactured by Tisch TE-5025 A						
Results	:	Flow recorder reading (cfm) Qstd (Actual flow rate, m <sup>3</sup> /min)	54 1.72	48 1.52		44 1.36	33 1.03	26 0.83
		Pressure : 754.56 mm	Hg	Temp. :		303	К	

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.

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

Calibrated by : / LIAO,

LIAO, Yun Chao (Technician)

- END OF REPORT -

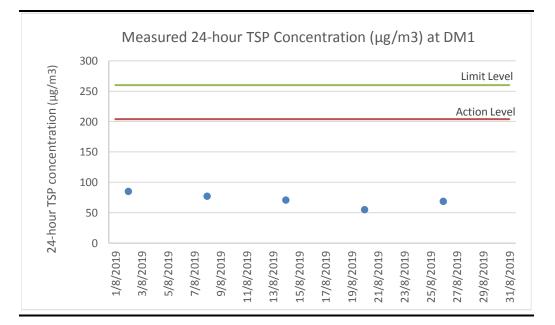
# 24-hour TSP Monitoring Results

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (µg/m3)		
2 Aug 19	9:35	3 Aug 19	9:35	Cloudy	85		
8 Aug 19	8:00	9 Aug 19	8:00	Fine	77		
14 Aug 19	8:00	15 Aug 19	8:00	Fine	71		
20 Aug 19	8:30	21 Aug 19	8:30	Fine	55		
26 Aug 19	9:15	27 Aug 19	9:15	Rainy	69		
				Average	71		
				Min	55		
<b>Max</b> 85							
Note:							
DM1 corresponds to the existing TSP monitoring station TKO-A1 currently operating by							

### Table D2.124-hour TSP Monitoring Results at DM1

CEDD.

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

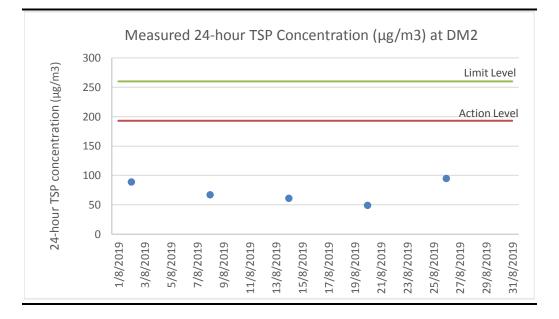


### Table D2.224-hour TSP Monitoring Results at DM2

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (µg/m3)
2 Aug 19	9:41	3 Aug 19	9:41	Cloudy	89
8 Aug 19	8:00	9 Aug 19	8:00	Fine	67
14 Aug 19	8:00	15 Aug 19	8:00	Fine	61
20 Aug 19	8:30	21 Aug 19	8:30	Fine	49
26 Aug 19	9:30	27 Aug 19	9:30	Rainy	95
				Average	72
				Min	49
				Max	95
Note:					
	11	· · · · · · · · · · · · · · · · · · ·	•. ••		

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



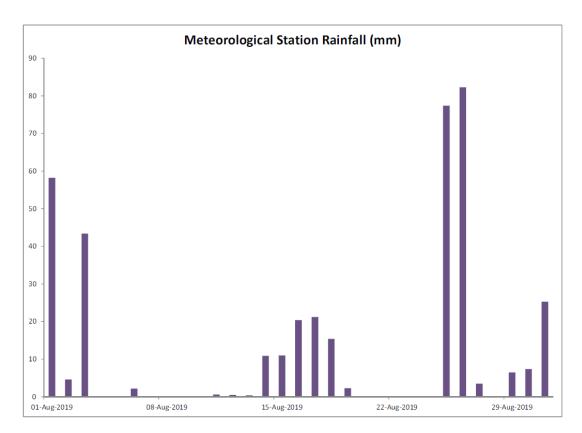
# Event and Action Plan for Dust Monitoring

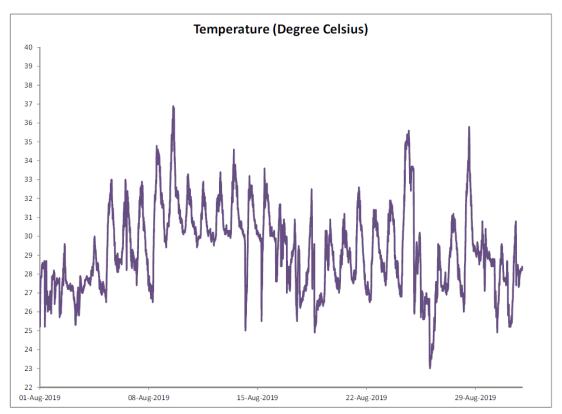
		Action	
Event	ET	IEC	Contractor
Action Level			
Exceedance for one sample	<ul> <li>Identify the source(s) and investigate the cause(s) of exceedance</li> <li>Prepare Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due 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>

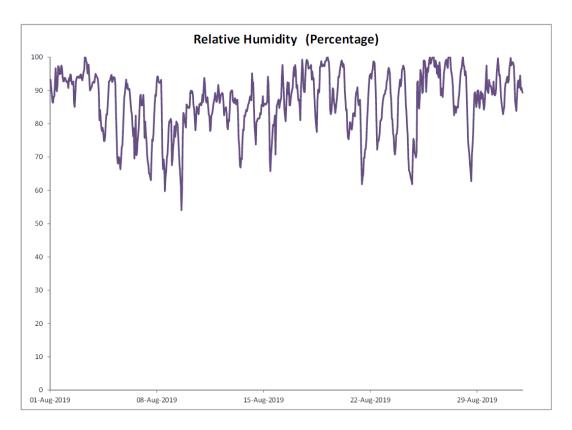
### Annex D3 Event and Action Plan for Dust Monitoring During Construction Phase

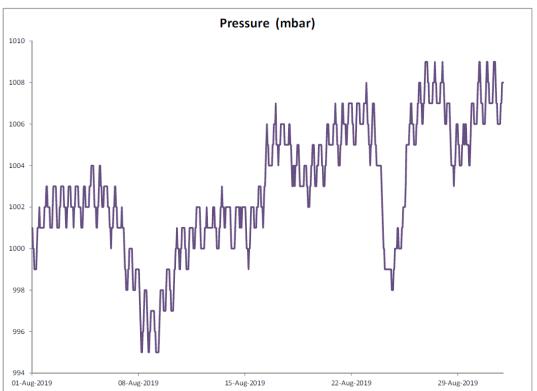
		Action	
Event	ET	IEC	Contractor
Limit Level			
Exceedance for one sample	<ul> <li>Identify the source(s) and investigate the cause(s) of exceedance</li> <li>Prepare Notification of Exceedance within 24 hours</li> <li>Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is 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>

# Meteorological Data

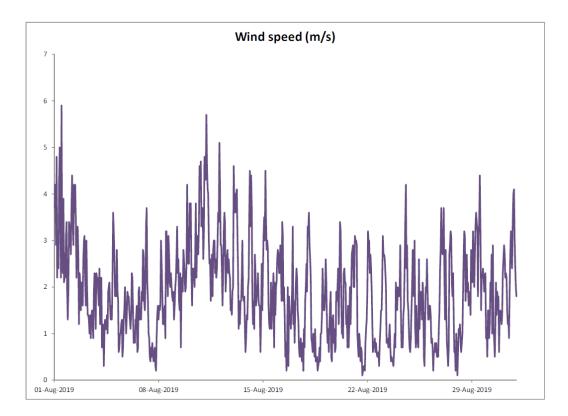


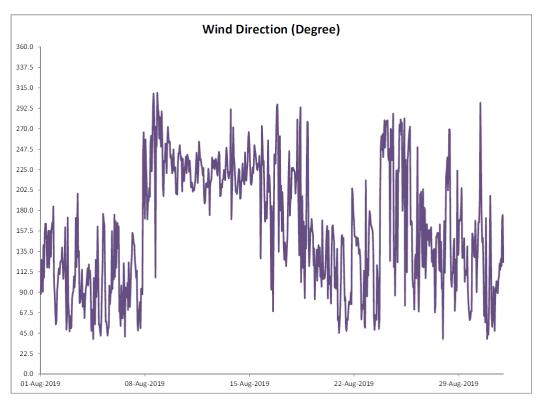




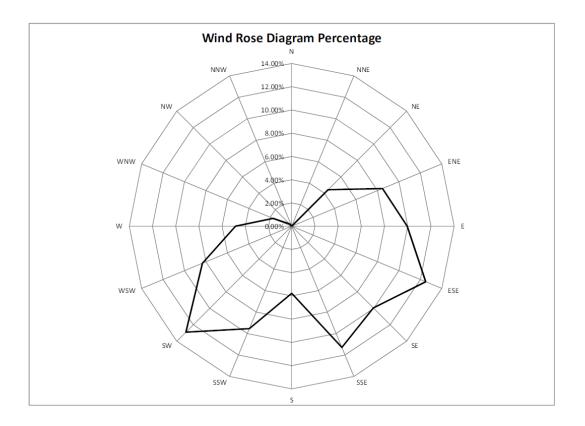


#### ENVIRONMENTAL RESOURCES MANAGEMENT





#### ENVIRONMENTAL RESOURCES MANAGEMENT



### Manual Rain Gauge Readings

August 2019

Date	Rainfall
	(mm)
1 Aug 19	48.8
2 Aug 19	49.6
3 Aug 19	6.6
4 Aug 19	0.2
5 Aug 19	0.0
6 Aug 19	24.0
7 Aug 19	1.0
8 Aug 19	0.0
9 Aug 19	0.0
10 Aug 19	1.6
11 Aug 19	20.0
12 Aug 19	3.0
13 Aug 19	12.0
14 Aug 19	13.0
15 Aug 19	19.0
16 Aug 19	9.2
17 Aug 19	25.4
18 Aug 19	18.4
19 Aug 19	3.0
20 Aug 19	0.5
21 Aug 19	0.0
22 Aug 19	0.0
23 Aug 19	0.0
24 Aug 19	12.0
25 Aug 19	80.0
26 Aug 19	29.5
27 Aug 19	1.0
28 Aug 19	0.0
29 Aug 19	10.0
30 Aug 19	44.2
31 Aug 19	10.2
TOTAL RAINFALL	442.2

Annex E

## Noise

Annex E1

Calibration Certificates for Noise Monitoring Equipment



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C192957 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: 30 May 2019
Description / 儀器名稱 :	:	Sound Level Meter (EQ017)	
Manufacturer / 製造商 :	:	Brüel & Kjær	
Model No. / 型號 :	:	2250	
Serial No. / 編號 :	:	3012330	
Supplied By / 委託者	:	Action-United Environmental Services and C	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 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50 ± 25)%

#### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 7 June 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

Date of Issue Certified By : : 簽發日期 核證 Κ C Lee Engineer

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 — 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 Website/網址: www.suncreation.com

12 June 2019



輝創工程有限公司

Sun Creation Engineering Limited Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C186448 證書編號

ITEM TESTED / 送檢項目	(Job No. / 序引編號: IC18-0867) Date of Receipt / 收件日期: 8 November 2018
Description / 儀器名稱 :	Sound Calibrator (EQ089)
Manufacturer / 製造商 :	Rion
Model No. / 型號 :	NC-75
Serial No. / 編號 :	34680623
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 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50 ± 25)%

#### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 24 November 2018

#### 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

•

- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試

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ΗТ	Wong

Technical Officer

K C Lee Engineer

Certified By 核證 Date of Issue 簽發日期 :

27 November 2018

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 — 校正及檢測實驗所 c/o 香港新界屯門興安里—號四樓 Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com Page 1 of 2



# Certificate of Calibration 校正證書

Certificate No. : C186448 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- 2. The results presented are the mean of 3 measurements at each calibration point.
- 3. Test equipment :

Equipment ID CL130 CL281 TST150A Description Universal Counter Multifunction Acoustic Calibrator Measuring Amplifier <u>Certificate No.</u> C183775 CDK1806821 C181288

- 4. Test procedure : MA100N.
- 5. Results :
- 5.1 Sound Level Accuracy

UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	94.0	± 0.25	$\pm 0.2$

#### 5.2 Frequency Accuracy

1100 0000 1100 0000 1				
UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value	
(kHz)	(kHz)	Spec.	(Hz)	
1	1.000 0	$1 \text{ kHz} \pm 0.1 \%$	$\pm 0.1$	

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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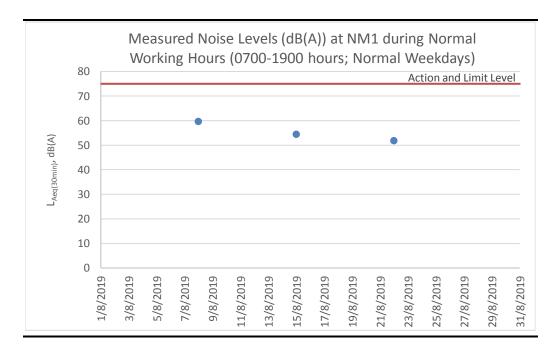
Annex E2

Noise Monitoring Results

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

Date	Start Time	Finish Time	Weather	L <sub>10 (30min)</sub>	L <sub>90 (30min)</sub>	L <sub>eq (30min)</sub>
1 Aug 19	NA	NA	Pouring	Monitoring	was cance	lled due to
				adverse wea	ather.	
8 Aug 19	15:25	15:55	Sunny	59.8	56.0	59.7
15 Aug 19	15:00	15:30	Sunny	55.5	53.1	54.4
22 Aug 19	15:21	15:51	Sunny	53.2	49.4	51.8
29 Aug 19	NA	NA	Pouring	Monitoring	was cancelle	d due to
				adverse wea	other.	
					Average	e 55.3
					Mir	n 51.8
					Ma	<b>x</b> 59.7
Note:						
Correction o	f +3 dB(A) was	made for free	field measur	ements.		

Figure E2.1 Graphical Presentation for Noise Monitoring at NM1



Annex E3

# Event and Action Plan for Noise Monitoring

Event		Action	
	ET	IEC	Contractor
Action Level	and complaint	<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	Identify the source(s) and investigate the cause(s) of exceedance and complaint Prepare Notification of Exceedance within 24 hours Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is due to the Project Analyse the operation of SENTX and investigate the causes of exceedance Provide interim report to Contractor, IEC, Project Proponent and EPD the causes of the exceedances Discuss with Contractor and IEC for remedial measures required Ensure remedial measures are properly implemented Report the remedial measures implemented and the additional monitoring results to Contactor, IEC, Project Proponent and EPD Have additional monitoring if exceedance is due to the Project. If exceedance stops, cease additional monitoring	<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>

#### Annex E3 Event and Action Plan for Construction Noise

# Surface Water Quality

Calibration Certificates for Surface Water Quality Monitoring Equipment



ALS Technichem (HK) Pty Ltd 11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong T: +852 2610 1044 | F: +852 2610 2021

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR IVAN LEUNG	WORK ORDER:	HK1923829
CLIENT:	ALS TECHNICHEM (HK) PTY LTD		
ADDRESS:	11/F., CHUNG SHUN KNITTING CENTRE, 1-3 WING YIP STREET, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH: LABORATORY: DATE RECEIVED: DATE OF ISSUE:	0 HONG KONG 05-Jun-2019 05-Jun-2019

#### COMMENTS

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.

Scope of Test:	Conductivity, Dissolved Oxygen, pH Value, Salinity and Temperature
Equipment Type:	Multifunctional Meter
Brand Name:	YSI
Model No.:	Professional Plus
Serial No.:	JC024046
Equipment No.:	HK1274
Date of Calibration:	05-Jun-2019

#### <u>NOTES</u>

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.

Ma Ai

Mr Chan Siu Ming, Vico Manager - Inorganic

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### REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER:	HK1923829			
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 05-Jun-2019 ALS TECHNICHEM (HK) PTY LTI	D		
Equipment Type: Brand Name: Model No.: Serial No.: Equipment No.:	Multifunctional Meter YSI Professional Plus JC024046 HK1274			
Date of Calibration:	05-Jun-2019	Date of Next Calibration:	05-Sep-2019	

# PARAMETERS:

Conductivity

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

Expected Reading (µS/cm)	Displayed Reading (µS/cm)	Tolerance (%)		
146.9	141.6	-3.6		
6667	6150	-7.8		
12890	12730	-1.2		
58670	57983	-1.2		
	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)
2.28	2.28	+0.00
5.26	5.22	-0.04
7.53	7.60	+0.07
	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	4.09	+0.09
7.0	7.05	+0.05
10.0	9.90	-0.10
	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.

Ma Alin

Mr Chan Siu Ming, Vico Manager - Inorganic

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER:	HK1923829		ALS
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 05-Jun-2019 ALS TECHNICHEM (HK) PTY LTI	D	
Equipment Type: Brand Name: Model No.: Serial No.: Equipment No.: Date of Calibration:	Multifunctional Meter YSI Professional Plus JC024046 HK1274 05-Jun-2019	Date of Next Calibration:	05-Sep-2019
PARAMETERS: Salinity	Method Ref: APHA (21st edition	), 2520B	
		Discuster of Descriptions (must)	$T_{a}$ la mana $a = \langle 0 \rangle$

_					
	Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)		
	Ο	0.00			
	10	9.84	-1.6		
	20	19.79	-1.1		
	30	30.58	+ 1.9		
		Tolerance Limit (%)	±10.0		

#### 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)
9.5	9.7	+0.2
23.0	22.7	-0.3
40.5	39.7	-0.8
	Tolerance Limit (°C)	±2.0

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

Ma Sig

Mr Chan Siu Ming, Vico 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	Dissolved Oxygen (DO)	рН	Suspended Solids (SS)	Remarks
					(°C)	(mg/L)		(mg/L)	
1 Aug 19	14:16	Pouring	Monitoring wa	as cancelled d	ue to adverse we	ather.			-
8 Aug 19	14:58	Sunny	Unable to coll	ect water samj	ple due to insuffi	cient flow			-
15 Aug 19	14:53	Sunny	Unable to colle	ect water sam	ple due to insuffi	cient flow			-
22 Aug 19	14:54	Sunny	Light yellow	Semi-clear	34.2	10.05	8.91	31.2	-
22 Aug 19	14:54	Sunny	Light yellow	Semi-clear	34.2	9.58	8.91	-	DP4 (Future, temporary) (Remeasurement)
29 Aug 19	NA	Pouring	Monitoring wa	as cancelled d	ue to adverse we	ather.			-
					Average	9.82	8.91	31.2	-
					Min	9.58	8.91	31.2	-
					Max	: 10.05	8.91	31.2	-
Notes: DP4	was tempo	rary relocated t	to DP4 (Future, t	emporary) (i.e					rent on 16 May 2019.

### Table F2.2Surface Water Quality Monitoring Results at DP6

Date	Time	Weather Condition	Water Appearance	Water Condition	Water Temperature (ºC)	Dissolved Oxygen (DO) (mg/L)	рН	Suspended Solids (SS) (mg/L)	Remarks
1 Aug 19	14:11	Pouring	Monitoring wa	as cancelled di	ue to adverse wea	ther.			-
8 Aug 19	14:37	Sunny	Light yellow	Semi-clear	32.7	6.91	7.80	25.1	-
8 Aug 19	14:46	Sunny	Light yellow	Semi-clear	32.7	6.95	7.87	24.8	DP6 (Duplicate)
15 Aug 19	14:25	Sunny	Light yellow	Semi-clear	33.4	6.71	7.43	3.2	-
15 Aug 19	14:39	Sunny	Light yellow	Semi-clear	33.4	6.85	7.42	4.2	DP6 (Duplicate)
22 Aug 19	14:27	Sunny	Light yellow	Semi-clear	32.4	6.69	7.31	10.0	-
22 Aug 19	14:35	Sunny	Light yellow	Semi-clear	32.3	6.94	7.36	9.9	DP6 (Duplicate)
29 Aug 19	NA	Pouring	Monitoring w	as cancelled d	ue to adverse wea	ther.			-
					Averag	<b>e</b> 6.84	7.53	12.9	-
					Mi	<b>n</b> 6.69	7.31	3.2	-
					Ma	<b>x</b> 6.95	7.87	25.1	-

#### Figure F2.1 Graphical Presentation for Surface Water Quality Monitoring (DO)

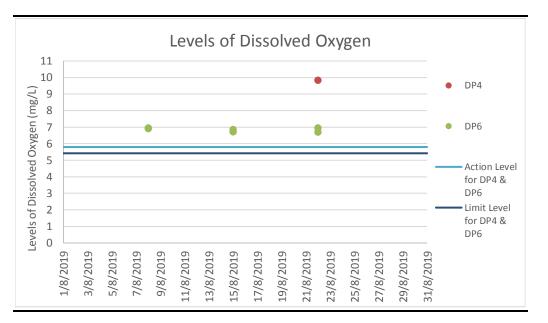
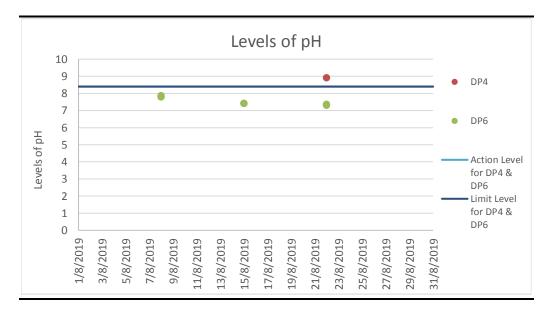
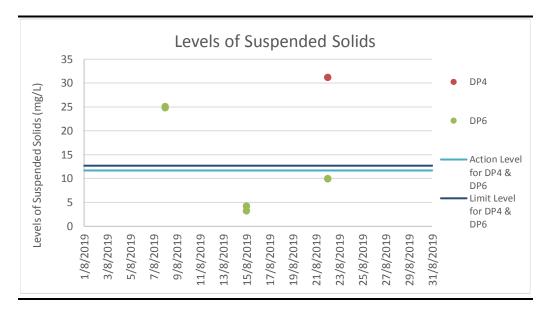


Figure F2.2 Graphical Presentation for Surface Water Quality Monitoring (pH)



### Figure F2.3 Graphical Presentation for Surface Water Quality Monitoring (SS)



Event and Action Plan for Surface Water Quality Monitoring

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>	<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>					
Action Level being exceeded by two onsecutive ampling 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 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>					

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

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, slo down or stop all or part of the construction activities</li> </ul>				

Investigation Reports of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension					
Date	8 August 2019					
Time	DP6: 14:37 & 14:46 (Duplicate)					
Monitoring Location	DP6					
Parameter	Surface Water (Suspended Solids (SS))					
Action / Limit Levels	DP6: Action level: >11.7 mg/L					
	Limit level: >12.7 mg/L					
Measured Level	DP6: 25.1 mg/L					
	DP6 (Duplicate): 24.8 mg/L					
Possible reason	No works which may lead to potential SS increase was conducted in the vicinity of surface water channel leading to DP6 on the sampling day based on on-site observations and construction activities described by the Contractor. During the sampling event, no potential surface water discharge or overflow to the DP6 channel was observed.					
	Site water discharged to the DP6 channel was treated by the Wetsep prior to discharge. Wetsep near DP6 was functioning properly during the sampling event. The Contractor has complied with the recommendations and conditions outlined in the updated EM&A Manual.					
	Environmental deficiency was observed during the weekly site inspection in the morning. Site water was observed overflowing the concrete partition at DP6 channel, without passing through the geotextile at the pipes along the DP6 channel, which might be a potential source of SS increase to the surface water at DP6. However, the deficiency was rectified before the sampling event and no overflow of site water was observed during the sampling event.					
	As no potential source from the Project-related activities which may lead to SS increase was identified, and the Contractor has implemented relevant mitigation measures recommended in the updated EM&A Manual, there is no adequate evidence showing that the SS exceedance at DP6 was deemed to Project-related activities.					
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Level.					
Remarks	-					
	1					

# Investigation Report of Environmental Quality Limit Exceedance

Prepared by:	Abbey Lau
Designation:	Environmental Team
Date:	19 August 2019

Project	South East New Territories (SENT) Landfill Extension
Date	22 August 2019
Time	DP4T: 14:54
Monitoring Location	DP4T
Parameter	Surface Water (pH)
Action / Limit Levels	DP4T: Action level: >8.39
	Limit level: >8.40
Measured Level	DP4T: 8.91 & 8.91
Possible reason Action Taken / Action to be Taken	No works which may lead to potential pH increase (e.g. concreting works) was conducted in the vicinity of surface water channel leading to DP4T on and before the sampling day based on on-site observations and construction activities described by the Contractor. During the sampling event, no potential surface water discharge or overflow to the DP4T channel was observed. Water from wheel-washing area discharged to the DP4T channel was treated by the Wetsep prior to discharge. Wetsep near DP4T was functioning properly with reference to the on-site checking of the treated water at the outlet of the Wetsep during the sampling event. The Contractor has complied with the recommendations and conditions outlined in the updated EM&A Manual. As no potential source from the Project-related activities which may lead to pH increase was identified, and the Contractor has implemented the relevant mitigation measures recommended in the updated EM&A Manual, there is no adequate evidence showing that the pH exceedance at DP4T was deemed to Project- related activities.
be Taken	continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Level.
Remarks	-

#### Investigation Report of Environmental Quality Limit Exceedance

Prepared by:Abbey LauDesignation:Environmental TeamDate:27 August 2019

Project	South East New Territories (SENT) Landfill Extension					
Date	22 August 2019					
Time	DP4T: 14:54					
Monitoring Location	DP4T					
Parameter	Surface Water (Suspended Solids (SS))					
Action / Limit Levels	DP4T: Action level: >11.7 mg/L					
	Limit level: >12.7 mg/L					
Measured Level	DP4T: 31.2 mg/L					
Possible reason	No works which may lead to potential SS increase was conducted in the vicinity of surface water channel leading to DP4T on the sampling day based on on-site observations and construction activities described by the Contractor. During the sampling event, no potential surface water discharge or overflow to the DP4T channel was observed. Water from wheel-washing area discharged to the DP4T channel					
	was treated by the Wetsep prior to discharge. Wetsep near DP4T was functioning properly with reference to the on-site checking of the treated water at the outlet of the Wetsep during the sampling event. The Contractor has complied with the recommendations and conditions outlined in the updated EM&A Manual.					
	As no potential source from the Project-related activities which may lead to SS increase was identified, and the Contractor has implemented relevant mitigation measures recommended in the updated EM&A Manual, there is no adequate evidence showing that the SS exceedance at DP4T was deemed to Project-related activities.					
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Level.					
Remarks	-					
Prepared by: Abbey Lau						
Designation: Environmenta	l Team					
Date: 30 August 201	9					

# Investigation Report of Environmental Quality Limit Exceedance

Annex G

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

#### Table G1Cumulative 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	3	33

# Table G2Cumulative Statistics on Complaints, Notifications of Summons and<br/>Successful Prosecutions

<b>Reporting Period</b>	Cumulative Statistics					
	Complaints	Notifications of Summons	Prosecutions			
This Reporting Period (1 – 31 August 2019)	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

September 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 Dust Monitoring	2	3	4	5 Surface Water Monitoring (pm) Noise Monitoring (pm)	6	7 Dust Monitoring
8	9	10	11	12 Surface Water Monitoring (pm) Noise Monitoring (pm)		14
15	16	17	18	19 Surface Water Monitoring (pm) Noise Monitoring (pm) Dust Monitoring	20	21
22	23	24	25 Dust Monitoring	26 Surface Water Monitoring (pm) Noise Monitoring (pm)	27	28
29	30					

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.