

Annex A

## Implementation Schedule

## **A1 IMPLEMENTATION SCHEDULE**

### **A1.1 INTRODUCTION**

This *Annex* summarises all the mitigation measures recommended in the approved *EIA Report* taking account of the latest design and presents them in the form of an Implementation Schedule in accordance with the requirements of Section 3.4.10.3 of the *EIA Study Brief No. ESB-119/2004*.

The Implementation Schedule has the following column headings:

#### ***EIA Ref***

This denotes the section number or reference from the approved *EIA Report* Main text.

#### ***EM&A Ref***

This denotes the sequential number of each of the recommended mitigation measures specified in the Implementation Schedule.

#### ***Recommended Mitigation Measures***

This denotes the recommended mitigation measures, courses of action or subsequent deliverables that are to be adopted, undertaken or delivered to avoid, reduce or ameliorate predicted environmental impacts.

#### ***Objectives of the Recommended Measure and Main Concerns to be Addressed***

This denotes the objectives of the recommended mitigation measures and main concerns to address.

#### ***Location***

This indicates the spatial area in which the recommended mitigation measures are to be implemented together with details of the programming or timing of their implementation.

#### ***Who to Implement the Measure***

This denotes where the responsibility lies for the implementation of the recommended mitigation measures.

*When to Implement the Measure*

This denotes the stage at which the recommended mitigation measures are to be implemented either during the Design, Construction, Operation/ Restoration or Aftercare phases.

*What Requirements or Standards for the Measure to Achieve*

This defines the controlling legislation that is required to be complied with.

**Table A1.1a Implementation Schedule**

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification	
						D	C	O/R	A			
<i>Air Quality - Construction Phase</i>												
4.8.1	AQ1	<p><u>Blasting</u></p> <ul style="list-style-type: none"> <li>The area within 30m of the blasting area will be wetted prior to blasting.</li> <li>Blasting will not be carried out when the strong wind signal or tropical cyclone warning signal No. 3 or higher is hoisted, unless this is with the express prior permission of the Commissioner of Mines.</li> <li>loose material and stones in the Site will be removed prior to the blast operation</li> <li>During blasting, blast nets, screens and other protective covers will be used to prevent the projection of flying fragments and material resulting from blasting</li> </ul>	To minimise potential dust nuisance	Blasting area and 30m of blasting area	SENTX Contractor					✓	<i>Air Pollution Control (Construction Dust) Regulations</i>	Not Applicable. Blasting is not required in the latest landfill design
4.8.1	AQ2	<p><u>Rock Drilling</u></p> <ul style="list-style-type: none"> <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					✓	<i>Air Pollution Control (Construction Dust) Regulations</i>	Not Applicable. Rock drilling is not required in the latest landfill design

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

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						D	C	O/R	A		
4.8.1	AQ3	<u>Site Access Road</u> <ul style="list-style-type: none"> <li>The main haul road will be kept clear of dusty materials or sprayed with water.</li> <li>The main haul road will be paved with aggregate or gravel.</li> <li>Vehicle speed will be limited to 10kph.</li> </ul>	To minimise potential dust nuisance	Main haul road	SENTX Contractor				✓	<i>Air Pollution Control (Construction Dust) Regulations</i>  <i>HKAQO and EIAO-TM Annex 4</i>	-
4.8.1	AQ4	<u>Stockpiling of Dusty Materials</u> <ul style="list-style-type: none"> <li>Any stockpile of dusty materials will be covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides or sprayed with water so as to ensure that the entire surface is wet.</li> </ul>	To minimise potential dust nuisance	All construction works area	SENTX Contractor				✓	<i>Air Pollution Control (Construction Dust) Regulations</i>  <i>HKAQO and EIAO-TM Annex 4</i>	-
4.8.1	AQ5	<u>Loading, unloading or transfer of dusty materials</u> <ul style="list-style-type: none"> <li>All dusty materials will be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.</li> </ul>	To minimise potential dust nuisance	All construction works area	SENTX Contractor				✓	<i>Air Pollution Control (Construction Dust) Regulations</i>  <i>HKAQO and EIAO-TM Annex 4</i>	-
4.8.1	AQ6	<u>Site Boundary and Entrance</u> <ul style="list-style-type: none"> <li>Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of height not less than 2.4m from</li> </ul>	To minimise potential dust nuisance	Site boundary and entrance	SENTX Contractor				✓	<i>Air Pollution Control (Construction Dust) Regulations</i>  <i>HKAQO and EIAO-</i>	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		ground level will be provided along the entire length of that portion of the site boundary except for the site entrance or exit.									<i>TM Annex 4</i>
4.8.1	AQ7	<u>Excavation Works</u> <ul style="list-style-type: none"> <li>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.</li> </ul>	To minimise potential dust nuisance	All construction works area	SENTX Contractor			✓		<i>Air Pollution Control (Construction Dust) Regulations</i>  <i>HKAQO and EIAO-TM Annex 4</i>	-
4.8.1	AQ8	<u>Building Demolition</u> <ul style="list-style-type: none"> <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> <li>Any dusty materials remaining after a stockpile is removed will be wetted with water and cleared from the surface of roads or street.</li> </ul>	To minimise potential dust nuisance	All construction works area	SENTX Contractor			✓		<i>Air Pollution Control (Construction Dust) Regulations</i>  <i>HKAQO and EIAO-TM Annex 4</i>	-
4.8.1	AQ9	<u>Construction of the Superstructure of Building</u> <ul style="list-style-type: none"> <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			✓		<i>Air Pollution Control (Construction Dust) Regulations</i>  <i>HKAQO and EIAO-TM Annex 4</i>	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
4.8.1	AQ10	Should a stone crushing plant be needed on site, the control measures recommended in the <i>Best Practicable Means Requirement for Mineral Works (Stone Crushing Plants) BPM 11/1</i> should be implemented.	To minimise potential dust nuisance	Stone crushing plant/ construction phase	SENTX Contractor		✓			<i>Best Practicable Means Requirement for Mineral Works (Stone Crushing Plants) BPM 11/1</i>	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		✓			<i>HKAQO and EIAO-TM Annex 4</i>	-
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		✓			<i>HKAQO and EIAO-TM Annex 4</i>	-
<b><i>Air Quality - Operation, Restoration and Aftercare Phases</i></b>											
4.8.2	AQ13	<u>Odour</u> <ul style="list-style-type: none"><li>Enclosing the weighbridge area</li></ul>	To minimise odour nuisance	Weighbridge area	SENTX Contractor		✓	✓		<i>EIAO-TM Annex 4</i>	Not Applicable. As SENTX will receive construction waste only which is significantly less odorous, enclosing the weighbridge area is not necessary
4.8.2	AQ14	<ul style="list-style-type: none"><li>Providing a vehicle washing facility before the exit of SENTX and</li></ul>	To minimise odour nuisance	Vehicle washing	SENTX Contractor		✓	✓		<i>EIAO-TM Annex 4</i>	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		providing sufficient signage to remind RCV drivers to pass through the facility before leaving SENTX		facility							
4.8.2	AQ15	<ul style="list-style-type: none"> <li>Reminding the RCV drivers to empty the liquor collection sump and close the valve before leaving the tipping face</li> </ul>	To minimise odour nuisance	Tipping face	SENTX Contractor			✓		<i>EIAO-TM Annex 4</i>	Not Applicable. As SENTX will receive construction waste only, which is relatively dry, the amount of liquor generated is expected to minimal
4.8.2	AQ16	<ul style="list-style-type: none"> <li>Washing down the area where spillage of RCV liquor is discovered promptly</li> </ul>	To minimise odour nuisance	SENTX Site	SENTX Contractor			✓		<i>EIAO-TM Annex 4</i>	Not Applicable. As SENTX will receive construction waste only, which is relatively dry, the amount of liquor generated is expected to minimal.
4.8.2	AQ17	<ul style="list-style-type: none"> <li>Reminding operators to properly maintain their RCVs and ensure that liquor does not leak from the vehicles</li> </ul>	To minimise odour nuisance	SENTX Site	SENTX Contractor			✓		<i>EIAO-TM Annex 4</i>	Not Applicable. As SENTX will receive construction waste only, which is relatively dry, the amount of liquor generated is expected to minimal.
4.8.2	AQ18	<ul style="list-style-type: none"> <li>Installation of landfill gas control</li> </ul>	To minimise odour	SENTX Site	SENTX	✓	✓	✓		<i>EIAO-TM Annex 4</i>	-



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						D	C	O/R	A		
		system to enhance collection of landfill gas from the waste mass and hence minimise odour associated with fugitive landfill gas emissions	nuisance		Contractor						
4.8.2	AQ19	<ul style="list-style-type: none"> <li>Progressive restoration of the areas which reach the finished profile (a final capping system including an impermeable liner will be put in place) and installation of a permanent landfill gas extraction system</li> </ul>	To minimise odour nuisance	SENTX Site	SENTX Contractor	✓	✓	✓	EIAO-TM Annex 4	-	
4.8.2	AQ20	<ul style="list-style-type: none"> <li>Installing deodorizers along the site boundary adjacent to the ASRs</li> </ul>	To minimise odour nuisance	SENTX Site boundary	SENTX Contractor			✓	✓	EIAO-TM Annex 4	Not Applicable. As SENTX will receive construction waste only which is significantly less odorous, installation of deodorizers is not necessary.
4.8.2	AQ21	<ul style="list-style-type: none"> <li>Erecting a vertical barrier, wall or structure softened by planting rows of trees/shrubs or landscape feature along the site boundary, particularly in the areas near the ASRs</li> </ul>	To minimise odour nuisance	SENTX Site boundary	SENTX Contractor	✓	✓	✓	EIAO-TM Annex 4	-	
4.8.2 and SENTX latest design	AQ22	<ul style="list-style-type: none"> <li>Maintaining the size of the active tipping face not greater than 1,200 m<sup>2</sup></li> </ul>	To minimise odour nuisance	Active tipping face	SENTX Contractor			✓		EIAO-TM Annex 4	-

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						D	C	O/R	A		
4.8.2	AQ23	<ul style="list-style-type: none"> <li>Promptly covering the MSW with soil or selected inert materials to control odour emissions</li> </ul>	To minimise odour nuisance	Active tipping face	SENTX Contractor			✓		EIAO-TM Annex 4	Not Applicable. SENTX will not receive MSW.
4.8.2	AQ24	<ul style="list-style-type: none"> <li>Maintaining the size of the special waste trench not greater than 6m (l) × 2.5m (w)</li> </ul>	To minimise odour nuisance	Special waste trench	SENTX Contractor			✓		EIAO-TM Annex 4	Not Applicable. SENTX will not have any special waste trench.
4.8.2 and SENTX latest design	AQ25	<ul style="list-style-type: none"> <li>Covering daily covered area with a tarpaulin sheet or 300mm of soil after the landfill operating hours</li> </ul>	To minimise odour nuisance	Daily covered area	SENTX Contractor			✓		EIAO-TM Annex 4	-
4.8.2	AQ26	<ul style="list-style-type: none"> <li>Covering special waste trench with 600 mm of soil and an impervious liner after 5 pm</li> </ul>	To minimise odour nuisance	Special waste trench	SENTX Contractor			✓		EIAO-TM Annex 4	Not Applicable. SENTX will not have any special waste trench.
4.8.2	AQ27	<ul style="list-style-type: none"> <li>Covering the non-active tipping face with 600mm of soil and an impermeable liner (on top of the intermediate cover), which will not only control odour emissions from landfilled waste but also enhance landfill gas extraction by the landfill gas extraction system</li> </ul>	To minimise odour nuisance	Intermediate cover	SENTX Contractor			✓		EIAO-TM Annex 4	-
4.8.2	AQ28	<ul style="list-style-type: none"> <li>Applying deodorizers or odour suppression agents to control odour emissions from the active tipping face and special waste trench, if any,</li> </ul>	To minimise odour nuisance	Active tipping face and special waste	SENTX Contractor			✓		EIAO-TM Annex 4	Not Applicable. As SENTX will receive construction waste only which is

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						D	C	O/R	A		
		through spraying or fogging equipment		trench							significantly less odorous, installation of deodorizers is not necessary. Moreover, SENTX will not have any special waste trench.
4.8.2	AQ29	<ul style="list-style-type: none"> <li>Providing a mobile cover with retractable or suitable opening to cover up the opening of the special waste trench except during waste deposition and a suitable odour removal unit. The mobile cover should be equipped with powered extraction and suitable odour removal unit for purifying the trapped gas inside the trench before release into the atmosphere</li> </ul>	To minimise odour nuisance	Special waste trench	SENTX Contractor			✓		<i>EIAO-TM Annex 4</i>	Not Applicable. SENTX will not have any special waste trench.
4.8.2 and SENTX latest design	AQ30	<ul style="list-style-type: none"> <li>Providing a thermal oxidizer for the leachate treatment plant</li> </ul>	To minimise odour nuisance as a result of breakdown of thermal oxidizer	Leachate treatment plant	SENTX Contractor	✓	✓	✓		<i>EIAO-TM Annex 4</i>	-
4.8.2 and SENTX latest design	AQ31	<ul style="list-style-type: none"> <li>Enclosing all the leachate storage and treatment tanks (except for the Sequential Batch Reactor (SBR) or Membrane Bioreactor (MBR) tanks) and diverting the exhaust air from these tanks to a thermal oxidizer or flare to avoid potential odour</li> </ul>	To minimise odour nuisance	Leachate treatment plant	SENTX Contractor	✓	✓	✓		<i>EIAO-TM Annex 4</i>	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		emissions from the LTP									
4.8.2	AQ32	<ul style="list-style-type: none"> <li>Rescheduling of waste filling activities on-site by avoiding waste filling activities carrying out at the northern area of the site in the summer months between July to November</li> </ul>	To minimise odour nuisance	SENTX Site	SENTX Contractor			✓		<i>EIAO-TM Annex 4</i>	Not Applicable. As SENTX will receive construction waste only which is significantly less odorous, rescheduling of waste filling activities is not necessary.
4.8.2 and SENTX latest design	AQ33	<u>Dust, Gaseous Emission and LFG including Volatile Organic Compounds (VOCs)</u> <ul style="list-style-type: none"> <li>Keeping the main haul road to the waste filling area wet by regular watering ;</li> </ul>	To minimise dust nuisance	SENTX Site	SENTX Contractor			✓		<i>HKAQO and EIAO-TM Annex 4</i>	-
4.8.2	AQ34	<ul style="list-style-type: none"> <li>Compacting the exposed daily and intermediate covered areas well to avoid fugitive dust emission;</li> </ul>	To minimise dust nuisance	SENTX Site	SENTX Contractor			✓		<i>HKAQO and EIAO-TM Annex 4</i>	-
4.8.2	AQ35	<ul style="list-style-type: none"> <li>Limiting the vehicle speed within SENTX site boundary;</li> </ul>	To minimise dust nuisance	SENTX Site	SENTX Contractor			✓		<i>HKAQO and EIAO-TM Annex 4</i>	-
4.8.2	AQ36	<ul style="list-style-type: none"> <li>Providing vehicle washing bay to avoid vehicles carrying dust to public roads;</li> </ul>	To minimise dust nuisance	SENTX Site	SENTX Contractor			✓		<i>HKAQO and EIAO-TM Annex 4</i>	-
4.8.2	AQ37	<ul style="list-style-type: none"> <li>Switching off the engine when the</li> </ul>	To minimise gaseous	SENTX Site	SENTX			✓	✓	-	-

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						D	C	O/R	A		
		diesel-driven equipment is idling;	emissions		Contractor						
4.8.2	AQ38	• Maintaining the construction equipment properly to avoid any black smoke emissions;	To minimise gaseous emissions	SENTX Site	SENTX Contractor			✓	✓	-	-
4.8.2	AQ39	Providing sufficient underground landfill gas collection system to capture the landfill gas generated as much as possible; and	To minimise gaseous emissions, including LFG and VOCs	SENTX Site	SENTX Contractor			✓	✓	<i>EIAO-TM Annex 4</i>	-
4.8.2	AQ40	Periodic inspections of the final cover should be undertaken to ensure that the capping layer is in good conditions at all times.	To minimise gaseous emissions, including LFG and VOCs	SENTX Site	SENTX Contractor			✓	✓	<i>EIAO-TM Annex 4</i>	-
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			✓	✓	<i>HKAQO and EIAO-TM Annex 4</i>	-
4.10.2	AQ42	Monitoring of ambient VOCs, ammonia and H <sub>2</sub> S, quarterly	Ensure the gaseous emission from the project meets the air quality requirement	At monitoring locations shown in <i>Figure 11.3a</i>	SENTX Contractor			✓	✓	Odour thresholds or 1% of Occupational Exposure Limit (OEL) as stipulated in the " <i>UK Health and Safety Executive (HSE) EH 40/05 Occupational Exposure Limits</i> ", whichever is lower.	-
4.10.2 and SENTX	AQ43	Monitoring of parameters for thermal oxidizer, flares and generator in	Ensure the gaseous emission from the	At the flares and thermal	SENTX			✓	✓	Emission Limits	-

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						D	C	O/R	A		
latest design		accordance with requirements stated in Tables 3.4a, 3.5a and 3.6a of the EM&A Manual respectively.	project meets the air quality requirement	oxidizer stacks when they are in operation	Contractor				(1)	specified in Contract	
4.10.2	AQ44	To confirm design assumption of ammonia, it is recommended that the ammonia concentration in the flue gas of the thermal oxidiser be monitored during the commissioning stage of the thermal oxidiser. If required, an emission standard will be set for ammonia for the thermal oxidiser based on the monitoring results. If no ammonia is detected in the flue gas during the decommissioning stage, the monitoring of ammonia in the flue gas of the thermal oxidiser could be discontinued.	Ensure the gaseous emission from the project meets the air quality requirement	At the thermal oxidizer stack during commissioning. If ammonia is detected during commissioning stage, the monitoring will continue.	SENTX Contractor			✓		Emission Limits determined during commissioning stage	-
4.10.2 and SENTX latest design	AQ45	Odour patrol in accordance with requirements stated in Table 3.7a of the EM&A Manual.	Ensure the odour emission from the project meets the odour requirement	Along SENTX Site boundary	SENTX Contractor			✓		EIAO-TM Annex 4	-
4.10.2	AQ46	Monitoring of meteorological station, continuously	Collect site specific meteorological data	At meteorological station shown in	SENTX Contractor	✓	✓	✓	-		-

(1) For LFG flare and LFG generator only.

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Figure 11.3a

*Noise - Construction Phase*

5.7.1	N1	<p>Adopt good site practice listed below:</p> <ul style="list-style-type: none"> <li>• Only well-maintained plant will be operated on-site and plant should be serviced regularly during the construction program;</li> <li>• Silencers or mufflers on construction equipment should be utilized and will be properly maintained during the construction program;</li> <li>• Mobile plant, if any, will be sited as far from NSRs as possible;</li> <li>• 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;</li> <li>• 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</li> <li>• Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening</li> </ul>	To minimise potential construction noise nuisance.	All construction works area	SENTX Contractor	✓				<i>Noise Control Ordinance (NCO) and EIAO-TM Annex 5</i>	-
											-
											-
											-
											-
											-

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						D	C	O/R	A		
		noise from on-site construction activities.									
5.8	N2	Weekly noise monitoring	Ensure noise generated from the project meets the criteria	At monitoring locations shown in Figure 6.4a	SENTX Contractor			✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5	-
<b>Noise - Operation/Restoration Phase</b>											
5.7.2	N3	Adopt good site practice listed below: <ul style="list-style-type: none"> <li>Choose quieter PME;</li> <li>Include noise levels specification when ordering new plant items;</li> <li>Locate fixed plant items or noise emission points away from the NSRs as far as practicable;</li> <li>Locate noisy machines in completely enclosed plant rooms or buildings; and</li> <li>Develop and implement a regularly scheduled plant maintenance programme so that plant items are properly operated and serviced. The programme should be implemented by properly trained personnel.</li> </ul>	To minimise potential operational noise nuisance.	Within the SENTX Site	SENTX Contractor			✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5	-
										-	-
										-	-
										-	-
5.8	N4	Weekly noise monitoring	Ensure noise generated from the project meets the	At monitoring locations shown in	SENTX Contractor			✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5	-



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						D	C	O/R	A			
			criteria	<i>Figure 6.4a</i>								
<b>Water Quality – Construction Phase</b>												
6.8.1	WQ1	<u>Construction Runoff</u> <ul style="list-style-type: none"> <li>Exposed soil areas will be minimised to reduce the contamination of runoff and erosion.</li> </ul>	To minimise potential water quality impacts arising from the construction works	All construction works area	SENTX Contractor					✓	ProPECC PN 1/94 EIAO-TM Annex 6	-
6.8.1	WQ2	<ul style="list-style-type: none"> <li>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.</li> </ul>	To minimise potential water quality impacts arising from the construction works	All construction works area	SENTX Contractor	✓	✓				ProPECC PN 1/94 Water Pollution Control Ordinance (WPCO) EIAO-TM Annex 6	-
6.8.1	WQ3	<ul style="list-style-type: none"> <li>Silt removal facilities, channels and manholes will be maintained and the deposited silt and grit should be removed regularly to ensure they are functioning properly at all times.</li> </ul>	To minimise potential water quality impacts arising from the construction works	All construction works area	SENTX Contractor					✓	ProPECC PN 1/94 WPCO EIAO-TM Annex 6	-
6.8.1	WQ4	<ul style="list-style-type: none"> <li>Temporary covers such as tarpaulin will also be provided to minimise the generation of high SS runoff.</li> </ul>	To minimise potential water quality impacts arising from the construction works	All construction works area	SENTX Contractor					✓	ProPECC PN 1/94 WPCO	-
6.8.1	WQ5	<ul style="list-style-type: none"> <li>The surface runoff contained any oil and grease will pass through the oil interceptors.</li> </ul>	To minimise potential water quality impacts arising from the construction works	All construction works area	SENTX Contractor					✓	ProPECC PN 1/94 WPCO EIAO-TM Annex 6	-

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						D	C	O/R	A		
6.8.1	WQ6	<ul style="list-style-type: none"> <li>All sewer and drains will be sealed to prevent building debris, soil etc from entering public sewers/drains before commencing any demolition works</li> </ul>	To minimise potential water quality impacts arising from the demolition works	Infrastructure area at existing SENT Landfill	SENTX Contractor		✓			<i>ProPECC PN 1/94</i> <i>WPCO</i> <i>EIAO-TM Annex 6</i>	-
6.8.1	WQ7	<ul style="list-style-type: none"> <li>During the excavation works for the twin drainage tunnels, the recycle water for cooling the cutter head of 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.</li> </ul>	To minimise potential water quality impacts arising from the tunnel works	Tunnel boring sites	SENTX Contractor		✓			<i>ProPECC PN 1/94</i> <i>WPCO</i> <i>EIAO-TM Annex 6</i>	Not Applicable. Excavation of drainage tunnels is not required in the latest landfill design.
6.8.1	WQ8	<ul style="list-style-type: none"> <li>The fuel and waste lubricant oil from the on-site maintenance of machinery and equipment will be collected by a licensed chemical waste collector.</li> </ul>	To minimise potential water quality impacts arising from improper handling of fuel and oil	SENTX Site	SENTX Contractor		✓			<i>ProPECC PN 1/94</i> <i>WPCO</i> <i>Waste Disposal Ordinance (WDO)</i>	-
6.8.1	WQ9	<ul style="list-style-type: none"> <li>Implementation of excavation schedules, lining and covering of excavated stockpiles</li> </ul>	To minimise contaminated stormwater run-off from the SENTX Site	All construction works	SENTX Contractor		✓			<i>ProPECC PN 1/94</i> <i>WPCO</i> <i>EIAO-TM Annex 6</i>	-
6.13	WQ10	<ul style="list-style-type: none"> <li>Monitoring of surface water quality will be conducted on a regular basis as stated in the EM&amp;A Manual.</li> </ul>	To minimise potential water quality impacts on surface water arising from the construction works	SENTX Site	SENTX Contractor		✓			<i>WPCO</i> <i>Water-TM</i>	-
6.8.2	WQ11	<p><u>Sewage Effluents</u></p> <ul style="list-style-type: none"> <li>Sufficient chemical toilets will be provided for the construction</li> </ul>	To minimise potential water quality impacts	SENTX Site	SENTX Contractor		✓			<i>WPCO</i>	-

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						D	C	O/R	A		
		workforce.	arising from the sewage effluents								
6.8.2	WQ12	<ul style="list-style-type: none"> <li>Untreated sewage will not be allowed to discharge into the surrounding water body.</li> </ul>	To minimise potential water quality impacts arising from the sewage effluents	SENTX Site	SENTX Contractor	✓			WPCO WDO	-	
6.8.2	WQ13	<ul style="list-style-type: none"> <li>A licensed waste collector will be employed to clean the chemical toilets on a regular basis.</li> </ul>	To minimise potential water quality impacts arising from the sewage effluents	SENTX Site	SENTX Contractor	✓			WPCO WDO	-	
<b>Water Quality – Operation/Restoration and Aftercare Phases</b>											
6.9.1	WQ14	<u>Surface Water Management</u> <ul style="list-style-type: none"> <li>Inspections of the drainage system, sand traps, settlement ponds and surface water channels will be performed regularly to identify areas necessary for maintenance, cleaning or repair.</li> </ul>	To minimise potential water quality impacts on surface water arising from the landfill operations.	SENTX Site	SENTX Contractor		✓		WPCO <i>Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Inshore Waters (Water-TM)</i> EIAO-TM Annex 6	-	
6.9.1	WQ15	<ul style="list-style-type: none"> <li>Regular maintenance and replacement, if required, of the HDPE liner will be conducted to prevent degradation from affecting the performance of the capping system.</li> </ul>	To minimise potential water quality impacts on surface water arising from the landfill operations.	SENTX Site	SENTX Contractor		✓		WPCO Water-TM EIAO-TM Annex 6	-	
6.9.1	WQ16	<ul style="list-style-type: none"> <li>Monitoring of surface water quality will be conducted on a regular basis as</li> </ul>	To minimise potential water quality impacts	SENTX Site	SENTX Contractor		✓	✓	WPCO Water-TM	-	

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		stated in the EM&A Manual.	on surface water arising from the landfill operations.								
6.9.2 and SENTX latest design	WQ17	<u>Groundwater Management</u> <ul style="list-style-type: none"> <li>The groundwater management facilities including the groundwater monitoring wells will be inspected regularly during routine groundwater monitoring programme.</li> </ul>	To minimise potential water quality impacts on groundwater arising from the landfill operations.	SENTX Site	SENTX Contractor			✓	✓	WPCO Water-TM EIAO-TM Annex 6	-
6.9.2	WQ18	<ul style="list-style-type: none"> <li>Monitoring of groundwater water quality will be conducted on a regular basis as stated in the EM&amp;A Manual.</li> </ul>	To minimise potential water quality impacts on groundwater arising from the landfill operations.	SENTX Site	SENTX Contractor			✓	✓	WPCO Water-TM EIAO-TM Annex 6	-
SENTX latest design	WQ19	<u>Sewage</u> <ul style="list-style-type: none"> <li>All sewage from the operation staff will be diverted to the LTP for treatment or public sewer, if available.</li> </ul>	To ensure proper handling of sewage	SENTX Site	SENTX Contractor			✓	✓	-	-
6.9.3	WQ20	<u>Leachate Management</u> <ul style="list-style-type: none"> <li>The leachate pump houses and related ancillary equipment will be inspected regularly and repairs, if necessary.</li> </ul>	To minimise potential water quality impacts on surrounding water bodies arising from the landfill operations.	Leachate pump houses and related ancillary equipment	SENTX Contractor			✓	✓	WPCO Water-TM EIAO-TM Annex 6	-
6.9.3	WQ21	<ul style="list-style-type: none"> <li>For equipment such as pumps that require routine scheduled maintenance, the maintenance will be</li> </ul>	To minimise potential water quality impacts on surrounding water	Leachate pumps	SENTX Contractor			✓	✓	WPCO Water-TM	-

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						D	C	O/R	A		
		performed following manufacturer's recommended frequency.	bodies arising from the landfill operations.								
6.9.3	WQ22	<ul style="list-style-type: none"> <li>Preventive maintenance will be implemented so that the possibility for forced shutdown during wet season will be kept to minimal.</li> </ul>	To minimise potential water quality impacts on surrounding water bodies arising from the landfill operations.	Leachate treatment plant	SENTX Contractor			✓	✓	WPCO Water-TM EIAO-TM Annex 6	-
6.9.3	WQ23	<ul style="list-style-type: none"> <li>Emergency procedures or a contingency plan will be established when the LTP is malfunctioned.</li> </ul>	To minimise potential water quality impacts on surrounding water bodies arising from the landfill operations.	Leachate treatment plant	SENTX Contractor			✓	✓	WPCO Water-TM EIAO-TM Annex 6	-
6.9.3 and SENTX latest design	WQ24	<ul style="list-style-type: none"> <li>There will be sufficient redundancy in the system to handle the leachate flow even if one treatment train is down for maintenance. The leachate may be required to temporarily store within the landfill if the leachate storage lagoon are full and leachate cannot be transported to the LTP for treatment.</li> </ul>	To minimise potential water quality impacts on surrounding water bodies arising from the landfill operations.	Leachate treatment plant	SENTX Contractor			✓	✓	WPCO Water-TM EIAO-TM Annex 6	-
6.13	WQ25	<ul style="list-style-type: none"> <li>Monitor the quality of effluent discharged from the LTP</li> </ul>	To ensure discharge quality comply with WPCO requirement	Leachate treatment plant discharge point	SENTX Contractor			✓	✓	WPCO Water-TM	-
6.10.1	WQ26	<u>Potential Leakage of Leachate</u>									-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		<ul style="list-style-type: none"> <li>Regular groundwater quality monitoring will be carried out to monitor the performance of the leachate containment system.</li> </ul>	To minimise potential water quality impacts on surrounding water bodies arising from the landfill operations.	SENTX Site	SENTX Contractor			✓	✓	WPCO Water-TM	
6.10.1	WQ27	<ul style="list-style-type: none"> <li>Maintenance and replacement of the capping system should be carried out, if necessary, to prevent control infiltration and leachate seepage from any damaged cap.</li> </ul>	To minimise potential water quality impacts on surrounding water bodies arising from the leachate leakage.	SENTX Site	SENTX Contractor			✓	✓	WPCO Water-TM EIAO-TM Annex 6	-
6.10.1	WQ28	<ul style="list-style-type: none"> <li>Maintaining control of the leachate level through extraction</li> </ul>	To minimise potential water quality impacts on surrounding water bodies arising from surface breakout of leachate.	SENTX Site	SENTX Contractor			✓	✓	WPCO Water-TM EIAO-TM Annex 6	-
<b>Waste Management – Construction Phase</b>											
7.6.1	WM1	All the necessary waste disposal permits are obtained prior to the commencement of construction work.	To ensure compliance with relevant statutory requirements	Before construction works commence	SENTX Contractor	✓	✓			WDO	-
7.6.1	WM2	<u>Management of Waste Disposal</u>  The construction contractor will open a 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	To ensure that adverse environmental impacts are prevented	SENTX Site	SENTX Contractor			✓		WDO Waste Disposal (Charges for Disposal of Construction Waste) Regulation;	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		reception facilities, sorting facilities, landfills will required a valid "chit" which contains the information of the account holder to facilitate waste 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.  A recording system for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established.								Works Bureau Technical Circular No.31/2004; and  Annex 5 and Annex 6 of Appendix G of ETWBTC No. 19/2005)	
7.6.1	WM3	<u>Measures for the Reduction of 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	-
7.6.1	WM4	<u>Chemical Waste</u>  The construction contractor will register	To ensure proper	SENTX Site	SENTX				✓	WDO	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the <i>Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i> .	handling of chemical waste		Contractor					<i>Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i>	
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		✓			WDO EIAO-TM Annex 7	-
7.6.1 and SENTX latest design	WM6	<u>General Refuse</u>  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.  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.	To ensure proper handling of general refuse	SENTX Site	SENTX Contractor		✓			WDO EIAO-TM Annex 7	-
7.6.1	WM7	<u>Staff Training</u>  At the commencement of the	To ensure that	SENTX Site	SENTX		✓				-



EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
7.8	WM8	<p>construction works, training will be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse and recycling.</p> <p><u>Environmental Monitoring &amp; Audit Requirements</u></p> <p>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.</p>	<p>adverse environmental impacts are prevented</p> <p>To ensure that adverse environmental impacts are prevented</p>	SENTX Site	SENTX Contractor			✓		WDO	-
<b>Waste Management – Operation/Restoration Phase</b>											
7.6.2 and SENTX latest design	WM9	<p><u>Sludge</u></p> <p>In case off-site disposal is required, the Contractor will ensure that sludge generated from the LTP will be delivered in closed container to other waste disposal facility e.g. other landfills or a sludge treatment facility, for proper disposal on a daily basis.</p>	To ensure proper handling of sludge	SENTX Site	SENTX Contractor			✓		WDO EIAO-TM Annex 7	-
7.6.2	WM10	<p><u>Chemical Waste</u></p> <p>The construction contractor will register as a chemical waste producer with the EPD. Chemical waste will be handled</p>	To ensure proper handling of chemical waste	SENTX Site	SENTX Contractor			✓		WDO EIAO-TM Annex 7	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		in accordance with the <i>Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i> .								<i>Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i>	
7.6.2	WM11	<u>Sewage</u>  All sewage from the operation staff will be diverted to the LTP for treatment or public sewer, if available.	To ensure proper handling of sewage	SENTX Site	SENTX Contractor			✓		WDO EIAO-TM Annex 7	Moved to mitigation measure under water quality WQ19. It is a measure for water quality rather than waste management.
7.6.2 and SENTX latest design	WM12	<u>General Refuse</u>  General refuse will be stored in enclosed bins and disposed of at other landfills or transfer station on a daily basis to reduce odour, pest and litter impacts.  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.	To ensure proper handling of general refuse	SENTX Site	SENTX Contractor			✓		WDO EIAO-TM Annex 7	-
<b>Waste Management – Aftercare Phase</b>											
7.6.3	WM13	<u>Sludge</u>  The Contractor will ensure that all dewatered sludge (>30% dry solids) generated from the LTP be transported to a waste disposal facility eg other landfills or sludge treatment facility, if required,	To ensure proper handling of sludge	Infrastructure area	SENTX Contractor			✓		WDO EIAO-TM Annex 7	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		for proper disposal on a daily basis.									
7.6.3	WM14	<i>Sewage</i>  All sewage from the aftercare staff will be treated at the LTP or directed to the public sewer, if available.	To ensure proper handling of sewage	Infrastructure area	SENTX Contractor				✓	WDO  EIAO-TM Annex 7	Moved to mitigation measure under water quality WQ19. It is a measure for water quality rather than waste management.
7.6.3	WM15	<i>General Refuse</i>  General refuse will be stored in enclosed bins and disposed of at a waste disposal facility eg other landfills or transfer stations on a daily basis to reduce odour, pest and litter impacts.  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.	To ensure proper handling of general refuse	SENTX Site	SENTX Contractor				✓	WDO  EIAO-TM Annex 7	-
<b>Landfill Gas Hazards – Design and Construction Phase</b>											
8.6.2 and SENTX latest design	LFG1	Precautionary measures to be adopted by the contractors at the Project site and the adjacent development site within the landfill consultation zone are outlined in Paragraphs 8.3 to 8.49 of EPD's <i>Landfill Gas Hazard Assessment Guidance Notes (the Guidance Note)</i> . Those precautionary	To protect workers from landfill gas risk	All construction works area	SENTX Contractor				✓	Paragraphs 8.3 to 8.49 of EPD's <i>Landfill Gas Hazards Assessment Guidance Note</i>  EIAO-TM Annex 7	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		measures applicable to the SENTX will be confirmed in the detailed Qualitative Landfill Gas Hazard Assessment to be submitted by the contractor.									
8.6.2	LFG2	<p>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.</p> <p>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.</p>	To protect workers from landfill gas risk	Confined space within the construction works area	SENTX Contractor		✓				-
8.6.3	LFG3	The design of the landfill gas management system and the landfill gas precautionary measures to be adopted on-site will be done by a landfill gas specialist consultant appointed by the SENTX contractor, who has	To minimise landfill gas hazards by appropriate design	SENTX Site	SENTX Contractor		✓		<i>EIAO-TM Annex 7</i>		-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		<p>comprehensive knowledge on landfill characteristics, potential landfill gas hazards and appropriate precautionary measures to minimise hazards. Moreover, the landfill gas management system and landfill gas precautionary measures will be checked and certified by a qualified independent consultant.</p> <p>During the detailed design stage, a review of this preliminary qualitative risk assessment will be carried out, a detailed qualitative landfill gas risk assessment will be prepared and the report together with the detailed design of gas protection measures will be submitted to EPD for vetting.</p>									
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	-
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> ).	To protect workers from landfill gas risk	Infrastructure Area	SENTX Contractor	✓	✓			EPD's <i>Landfill Gas Hazards Assessment Guidance Note</i> EIAO-TM Annex 7	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		Landfill gas monitoring boreholes will be installed at the edge of the waste slope between the waste and the new infrastructure area to monitor the migration of landfill gas, if any.									
8.6.3	LFG6	For future developments in TKOIE and TKO Area 137 which fall into the Landfill Consultation Zone of the SENTX, the project proponents should strictly follow the recommendations in the HKPSG and the <i>ProPECC PN 3/96</i> to carry out landfill gas hazard assessment for the developments and design/implement suitable precautionary and protection measures to render the development as safe as practicable. These precautionary measures may include passive gas control e.g. provision of barriers to the movement of landfill gas.	To protect workers and future site operator from landfill gas risk	Future Development within the SENTX Consultation Zone in TKO Area 137	Developers/operators of the future development site within the SENTX Consultation Zone in TKO Area 137	✓	✓			<i>Landfill Gas Hazards Assessment Guidance Note</i> <i>ProPECC PN 3/96</i> <i>EIAO-TM Annex 7</i>	-
<b>Landfill Gas Hazards – Operation, Restoration and Aftercare Phases</b>											
8.6.4	LFG7	To train and ensure staff to take appropriate precautions at all times when entering enclosed spaces or plant rooms. Undertake regular monitoring of landfill gas at the perimeter boreholes to detect if there are any signs of off-site landfill gas migration. Prepare and implement emergency plan in case off-	To protect workers from landfill gas risk	SENTX Site	SENTX Contractor			✓	✓	<i>Landfill Gas Hazards Assessment Guidance Note</i>	-

EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		site landfill gas migration is detected.  A permanent gas monitoring system with alarm will be installed and operated in all occupied on-site buildings.									
8.7 and SENTX latest design	LFG8	<u>Environmental Monitoring &amp; Audit Requirements</u>  Undertake regular monitoring of landfill gas within the SENTX and along the SENTX boundary as required by the Contract Specification.	To protect workers from landfill gas risk	Within the SENTX and along the SENTX boundary	SENTX Contractor			✓	✓		-
										<i>Landfill Gas Hazards Assessment Guidance Note</i>	

#### *Ecology – Construction Phase*

9.10.2	EC1	Measures to control construction runoff:  <ul style="list-style-type: none"> <li>Exposed soil areas will be minimised to reduce the contamination of runoff and erosion;</li> <li>To prevent stormwater runoff from washing across exposed soil surfaces, perimeter channels will be constructed in advance of site formation works and earthworks and intercepting channels will be provided for example along the edge of excavation;</li> </ul>	To minimise potential water quality impacts affecting ecological resources	All construction works area	SENTX Contractor			✓		<i>EIAO-TM Annex 16</i> <i>ProPECC PN 1/94</i> <i>Water Pollution Control Ordinance (WPCO)</i> <i>EIAO-TM Annex 6</i>	-
										-	-





EIA Ref.	EM&A Ref	Environmental Protection 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>				What requirements or standards for the measure to achieve?	Remarks and Justification
						D	C	O/R	A		
		regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas.									
<b>Ecology – Operation, Restoration and Aftercare Phases</b>											
9.10.2	EC3	<u>Measures for Controlling Leakage of Landfill Leachate</u>  Leachate will be contained within the SENTX Site by the proposed impermeable leachate containment system and collected by the installation of drainage system to prevent potential migration of leachate to habitats in the vicinity.	To minimise potential water quality impact affecting the ecological resources	SENTX Site	SENTX Contractor	✓	✓		EIAO-TM Annex 16 WPCO Water-TM EIAO-TM Annex 6		-
9.10.2	EC4	<u>Measures for Controlling Migration of Landfill Gas</u>  Disturbance to habitat in the vicinity and associated wildlife due to migration of landfill gas will be prevented by proper management of the landfill gas generated from the SENTX. Ignition fires will be prohibited to occur within the boundary of the SENTX Site. Surface emission and off-site migration of landfill gas will be regularly monitored.	To minimise potential landfill gas migration affecting ecological resources	SENTX Site	SENTX Contractor	✓	✓		EIAO-TM Annex 16		-
9.10.3 and SENTX latest design	EC5	The following compensation planting is recommended as the mitigation measures for the habitat affected due to the SENTX:	Compensation of habitat loss due to the Project	SENTX Site	SENTX Contractor	✓	✓		EIAO-TM Annex 16		-

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						D	C	O/R	A		
		<ul style="list-style-type: none"> <li>Provision of 6 ha of mixed woodland planting to compensate the loss of shrubland; and</li> <li>Provision of a mosaic of grassland and shrubland in the remaining areas of the SENTX Site.</li> </ul> <p>Compensatory planting and restoration of the SENTX can be implemented progressively according to the filling plan of SENTX.</p>									
9.10.3	EC6	The mixture of grassland, shrubland and woodland habitats are recommended to diversify the habitats for supporting various wildlife in particular butterflies, birds and herpetofauna and blend into the existing undisturbed ecological environment.	To diversify habitats	SENTX Site	SENTX Contractor			✓	✓	EIAO-TM Annex 16	-
9.10.3	EC7	Indigenous plant species of shallow root system, softwood in nature and adaptive to sea shore habitat are recommended to be used in the restoration plan, which can establish well in coastal area with exposure to strong wind and salt spray, with sand soil base. Taking consideration of the relative poor substrate and the difficulties of establishment of some native trees in Hong Kong, it is recommended to include approximately 20% of non-native tree species in the compensatory	To enhance ecological value of the habitats	SENTX Site	SENTX Contractor			✓	✓	EIAO-TM Annex 16	-

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						D	C	O/R	A		
		woodland. The non-native tree species can serve as a nurse species to facilitate the establishment of the native tree species, especially the shading, and it can be replaced by established native tree species progressively. Plant species can also make reference to food plants of butterfly species (in particularly butterfly species of conservation interests recorded within the CWBCP).									
9.10.3	EC8	It is also recommended that a trial nursery for native plant species be set up to fine tune the planting matrix and management intensity of the recommended indigenous tree species for the restoration of the SENTX. It should be noted that native shrubs and tree species had been used for restoration of the existing SENT Landfill, native plant species that could not successfully be established on the existing SENT Landfill should be reviewed before the preparation of the compensatory planting list. Special care and intensive management of native plant should be implemented in order to ensure proper establishment of the native plants.	To select the most suitable indigenous tree species for the SENTX	SENTX Site	SENTX Contractor	✓	✓	✓	EIAO-TM Annex 16	-	
9.12.1	EC9	<u>Environmental Monitoring &amp; Audit Requirements</u> The implementation of the ecological mitigation measures should be checked	To ensure that adverse ecological impacts are prevented	SENTX	SENTX Contractor	✓	✓	✓	EIAO-TM Annex 16	-	

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						D	C	O/R	A		
		as part of the environmental monitoring and audit procedures during the construction period.									
<b>Landscape and Visual – Construction Phase</b>											
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	✓				<i>EIAO-TM Annex 18 and ETWBC 3/2006</i>	-
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	✓				<i>EIAO-TM Annex 18</i>	-
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	✓				<i>EIAO-TM Annex 18 and ETWBC 3/2006</i>	-
10.6.5	LV4	CM4 - Trees unavoidably affected by the	To minimise the	Potential	SENTX	✓	✓			<i>EIAO-TM Annex 18 and ETWBC 3/2006</i>	-

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						D	C	O/R	A		
		works will be transplanted, where necessary and practical. A detailed Tree 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.	landscape and visual impacts	impacted area	Contractor						
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	
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	-
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.	To minimise the landscape and visual impacts	Infrastructure area	SENTX Contractor	✓	✓			EIAO-TM Annex 18 and ETWBC 7/2002	-

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						D	C	O/R	A		
		Additional tree planting will be provided in unused spaces with thin infrastructure 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	-
11.4.1 and SENTX latest design	LV9	During the preparation of the detailed landscape design plan, the design submission will be audited against the recommendation proposed in the <i>ER Report</i> by the Registered Landscape Architect from the ET.	To ensure the implementation of mitigation measures proposed in this EIA Report	SENTX Site	SENTX Contractor/ET			✓	✓	EIAO-TM Annex 18	-
<b>Landscape and Visual – Operation/Restoration Phase</b>											
10.6.5 and SENTX latest design	LV10	OM1 - Landfill materials will be covered with general fill material or tarpaulin sheet on a daily basis to reduce visual impact.	To minimise the landscape and visual impacts	Tipping area	SENTX Contractor			✓		EIAO-TM Annex 18	-
10.6.5 and SENTX latest design	LV11	OM2 - Filling and restoration will be phased during the course of operations in a minimum of 4 phases, the restoration of each phase to commence immediately on the completion of filling in that phase.	To minimise the landscape and visual impacts	Tipping area	SENTX Contractor			✓		EIAO-TM Annex 18	-

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						D	C	O/R	A		
10.6.5	LV12	OM3 - Catch fences will be erected at the perimeter of the waste boundary, to ensure that all waste stays within the site and is not blown into surrounding areas.	To minimise the landscape and visual impacts	Tipping area	SENTX Contractor			✓		EIAO-TM Annex 18	-
10.6.5	LV13	OM4 - All night-time lighting will be reduced to a practical minimum both in terms of number of units and lux level and will be hooded and directional.	To minimise the landscape and visual impacts	Tipping area	SENTX Contractor			✓		EIAO-TM Annex 18	-
11.4.2 and SENTX latest design	LV14	The condition of the restoration plantation will be audited at monthly intervals by a Registered Landscape Architect from the ET.	To check the restoration plantation	SENTX Site	SENTX Contractor/ET			✓		EIAO-TM Annex 18	-
<b>Landscape and Visual - Aftercare Phase</b>											
10.6.5	LV15	AM1 - The SENTX will be restored to resemble a natural hillside/ upland landscape as far as possible.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor	✓	✓	✓		EIAO-TM Annex 18	-
10.6.5	LV16	AM2 - Final restoration earthworks grading will provide both vertical and horizontal variation to simulate as far as practicable, natural terrain.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor	✓	✓	✓		EIAO-TM Annex 18	-
10.6.5	LV17	AM3 - Compensatory Tree Planting for all felled trees will be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees will be determined and agreed separately with Government during the Tree Felling Application process under ETWB-WBTC	To minimise the landscape and visual impacts	Potential impacted area	SENTX Contractor	✓	✓	✓		EIAO-TM Annex 18 and ETWBC 3/2006	-

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						D	C	O/R	A		
		3/2006.									
10.6.5 and SENTX latest design	LV18	AM4 - The restored SENTX will be substantially vegetated so as to mimic the patterns of natural vegetation on surrounding hills. At least 17.9 ha of the area of the SENTX will be planted with woodland mix planting at no less than 1.2m spacings. 80% of all plants planted should be native species. The remainder of the site should be planted as a grassland / shrub mosaic.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor	✓	✓	✓	EIAO-TM Annex 18	-	
10.6.5	LV19	AM5 - Drainage channels will be treated with stone pitching or coloured pigment in an earth tone and will not be untreated concrete.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor	✓	✓	✓	EIAO-TM Annex 18	-	
10.6.5	LV20	AM6 - Soil mix in accordance with the Government's General Specification for Engineering Works will be used in the restoration works. In areas of tree planting, soil mix will not be less than 1.2m deep. In areas of scrub planting and grassland, it should not be less than 600mm deep.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor	✓	✓	✓	EIAO-TM Annex 18	-	
10.6.5	LV21	AM7 - All above ground structures, including gas wells and flares will be sensitively designed in a manner that responds to the existing and planned urban context, and minimises potential adverse landscape and visual impacts.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor	✓	✓	✓	EIAO-TM Annex 18	-	
10.6.5	LV22	AM8 - Permanent access and	To minimise the	SENTX Site	SENTX	✓	✓	✓	EIAO-TM Annex 18	-	



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						D	C	O/R	A		
		maintenance tracks will not have an unfinished concrete surface. Acceptable finish materials might include granite, or concrete blocks in an earth tone colour.	landscape and visual impacts		Contractor						
11.4.3 and SENTX latest design	LV23	The restoration plantation will be audited quarterly by the Registered Landscape Architect from the ET	To check the restoration plantation	SENTX Site	SENTX Contractor and ET				✓	EIAO-TM Annex 18	-