

Appendix 4.9 Operation Phase Fixed Plant Noise Calculation (Mitigated Scenario)

Fixed Plant Inventory and Noise Level (Mitigated)

Location (Group)	Group	Type	Reference Name	Reference	SWL, dB(A) (Item)	No.	SWL, dB(A) (Type)	Design / Env. Features ^[7]	Corrections	Corrected SWL, dB(A) (Type)	Corrected SWL, dB(A) (Group)
Inlet Works Building	L1, L2, L3	Immersible pump	Submersible pump	EIA-245/2016-1 ^[2]	85	4	91	Plant room	-30	61	77
		Motor (Grip Trap)	45kW Motor	M3BP 225SMB 4 ^[5]	88	3	93	Plant room	-30	63	
		Motor (Coarse Screen)	45kW Motor	M3BP 225SMB 4 ^[5]	88	4	94	Plant room	-30	64	
		Motor (Fine Screen)	45kW Motor	M3BP 225SMB 4 ^[5]	88	5	95	Plant room	-30	65	
		Ventilation fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	5	86	Silencers at ventilation	-10	76	
Primary Treatment	PT	Sludge pump	Submersible pump	EIA-245/2016-1 ^[2]	85	6	93	Plant room	-30	63	63
Biological Treatment	L4	Internal recycle pump	Submersible pump	EIA-245/2016-1 ^[2]	85	12	96	Plant room	-30	66	66
Ancillary Building	L5	Air blower (276 m3/min)	Air Blower	EIA-148/2008-1 ^[3]	85	2	88	Plant room	-30	58	78
		Ventilation fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	7	87	Silencers at ventilation	-10	77	
	L6	Air blower (276 m3/min)	Air Blower	EIA-148/2008-1 ^[3]	85	4	91	Plant room	-30	61	78
		Ventilation fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	7	87	Silencers at ventilation	-10	77	
Tertiary Treatment Complex	L7	Compressor	Air Compressor, air flow > 30m3/min	CNP 003	104	4	110	Plant room	-30	80	81
		Sludge pump	Submersible pump	EIA-245/2016-1 ^[2]	85	2	88	Plant room	-30	58	
		Ventilation fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	2	82	Silencers at ventilation	-10	72	
		Motor (Disc filter)	30kW Motor	M3BP 200MLA 4 ^[5]	85	3	90	Plant room	-30	60	
		Effluent pump	Submersible pump	EIA-245/2016-1 ^[2]	85	2	88	Plant room	-30	58	
Sludge Thickening Building	L8, L9, L10, L11	Sludge pump	Submersible pump	EIA-245/2016-1 ^[2]	85	2	88	Plant room	-30	58	81
		Motor (Centrifuge)	Main Motor	EIA-086/2002-2 ^[3]	105	4	111	Plant room	-30	81	
		Sludge pump	Submersible pump	EIA-245/2016-1 ^[2]	85	1	85	Plant room	-30	55	
		Ventilation fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	1	79	Silencers at ventilation	-10	69	
Sludge Treatment	L12, L13	Sludge pump	Submersible pump	EIA-245/2016-1 ^[2]	85	1	85	Plant room	-30	55	78
		Motor (Centrifuge)	Main Motor	EIA-086/2002-2 ^[3]	105	1	105	Plant room	-30	75	
		CHP (gas engine)	Gas Engine	YLEPP 1 ^[6]	93	4	99	Plant room	-30	69	
		Ventilation fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	3	84	Silencers at ventilation	-10	74	
Organic Waste Reception Facility	L14, L15	Sludge pump	Submersible pump	EIA-245/2016-1 ^[2]	85	4	91	Plant room	-30	61	77
		CHP (gas engine)	Gas Engine	YLEPP 1 ^[6]	93	6	101	Plant room	-30	71	
		Ventilation fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	5	86	Silencers at ventilation	-10	76	
Inlet Works Building	DO1	Extraction fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	6	87	Barrier adjustment	-10	77	77
Ancillary Building	DO2	Extraction fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	18	92	Barrier adjustment	-10	82	82
Sludge Thickening Building	DO3	Extraction fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	2	82	Barrier adjustment	-10	72	72
Sludge Treatment	DO4	Extraction fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	7	87	Barrier adjustment	-10	77	77
Organic Waste Reception Facility	DO5	Extraction fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	4	85	Barrier adjustment	-10	75	75
Ancillary Building	DO6	Extraction fan	Ventilation Fan (1700 m3/hr)	Vent_sys-17 ^[1]	79	7	87	Barrier adjustment	-10	77	77

Remarks:

1. The SWL of ventilation fan is referenced with Good Practices on Ventilation System Noise Control published by EPD.
2. The SWL of submersible pump is referenced with EIA Report of Expansion of Sha Tau Kok Sewage Treatment Works, code: EIA-245/2016.
3. The SWL of air blower and centrifuge pump is referenced with EIA report of Harbour Area Treatment Scheme (HATS) Stage 2A, code: EIA-148/2008.
4. The SWL of Main Motor is referenced with EIA report of Upgrading and expansion of San Wai Sewage Treatment Works and expansion of Ha Tsuen Pumping Station, code: EIA-086/2002.
5. The SWL of motor is referenced with catalogue of ABB Motors and Generators IE2 cast iron motors, code: 9AKK105944 EN 06-2018.
6. The SWL of Gas Engine to be specified in construction contract.
7. Reduction of SWL with "Plant room" is referenced with Good Practices on Pumping System Noise Control published by EPD.

Appendix 4.9 Operation Phase Fixed Plant Noise Calculation (Mitigated Scenario)

Fixed Plant Noise Calculation (Mitigated)

NSR	Description	Noise Criteria (Day / Evening / Night), dB(A)	Noise Source (Group)	Distance (m)	SWL, dB(A)	Corrections, dB(A)			Overall Predicted Noise Level, dB(A)
						Distance	Tonal	Façade	
NSR1	Squatter house at the north of Yuen Long STW	53 / 47 / 45	L1	520	77	-62	3	3	35
			L2						
			L3						
			L4	420	66	-60	3	3	
			L5	410	78	-60	3	3	
			L6	400	78	-60	3	3	
			L7	360	81	-59	3	3	
			L8	340	81	-59	3	3	
			L9						
			L10						
			L11						
			L12	470	78	-61	3	3	
			L13						
			L14	500	77	-62	3	3	
			L15						
			DO1	550	77	-63	3	3	
			DO2	380	82	-60	3	3	
			DO3	330	72	-58	3	3	
			DO4	500	77	-62	3	3	
			DO5	570	75	-63	3	3	
DO6	380	77	-60	3	3				
PT	470	63	-61	3	3				
NSR2	Squatter house at the west of Yuen Long STW	49 / 47 / 43	L1	230	77	-55	3	3	42
			L2						
			L3						
			L4	210	66	-54	3	3	
			L5	300	78	-58	3	3	
			L6	230	78	-55	3	3	
			L7	260	81	-56	3	3	
			L8	220	81	-55	3	3	
			L9						
			L10						
			L11						
			L12	160	78	-52	3	3	
			L13						
			L14	80	77	-46	3	3	
			L15						
			DO1	240	77	-56	3	3	
			DO2	340	82	-59	3	3	
			DO3	260	72	-56	3	3	
			DO4	180	77	-53	3	3	
			DO5	120	75	-50	3	3	
DO6	260	77	-56	3	3				
PT	240	63	-56	3	3				
NSR3	Squatter house at the east of Yuen Long STW	55 / 57 / 50	L1	210	77	-54	3	3	37
			L2						
			L3						
			L4	280	66	-57	3	3	
			L5	300	78	-58	3	3	
			L6	380	78	-60	3	3	
			L7	330	81	-58	3	3	
			L8	450	81	-61	3	3	
			L9						
			L10						
			L11						
			L12	310	78	-58	3	3	
			L13						
			L14	370	77	-59	3	3	
			L15						
			DO1	280	77	-57	3	3	
			DO2	330	82	-58	3	3	
			DO3	500	72	-62	3	3	
			DO4	360	77	-59	3	3	
			DO5	400	75	-60	3	3	
DO6	390	77	-60	3	3				
PT	220	63	-55	3	3				

Remarks:

- Noise from fixed plants within the same building is only counted once.