Appendix 4.6 - Calculation of Operation Noise Impact

NSR TSSP1

	Potential Noise Sources	Sound Power Level for Each Equipment [c]	No.	Total Sound Power Level, dB(A)	Distance to Sources, m	Distance Corrections, m	Façade Effect and Tonality, dB(A)	Screening Effect, dB(A)	Outside line of Sight, dB(A)	Acoustic Louvers, dB(A)	Screening Effect/ Line of Sight/ Acoustic Louvers, dB(A)	Predicted Noise Level, dB(A)	SPL,dB(A)
Pumping Station A	Three Flood Pumps	110	3	115	160	-52	6	-30 [a]			-30	39	
	Ventilation Fans	90	5	97	154	-52	6		-10	-10 [b]	-20	31	39
Pumping Station B	Three Flood Pumps	110	3	115	83	-46	6	-30 [a]			-30	44	
	Ventilation Fans	90	5	97	106	-49	6		-10	-10 [b]	-20	34	45
												Total SPL =	46

NSR SPCH1

	Potential Noise Sources	Sound Power Level for Each Equipment [c]	No.	Total Sound Power Level, dB(A)	Distance to Sources, m	Distance Corrections, m	Façade Effect and Tonality, dB(A)	Screening Effect, dB(A)	Outside line of Sight, dB(A)	Acoustic Louvers, dB(A)	Screening Effect/ Line of Sight/ Acoustic Louvers, dB(A)	Predicted Noise Level, dB(A)	SPL,dB(A)
Pumping Station A	Three Flood Pumps	110	3	115	245	-56	6	-30 [a]			-30	35	
	Ventilation Fans	90	5	97	226	-55	6			-10 [b]	-10	38	40
Pumping Station B	Three Flood Pumps	110	3	115	239	-56	6	-30 [a]			-30	35	
	Ventilation Fans	90	5	97	221	-55	6		-10	-10 [b]	-20	28	36
												Total SPL =	41

NSR TTWS1

	Potential Noise Sources	Sound Power Level for Each Equipment [c]	No.	Total Sound Power Level, dB(A)	Distance to Sources, m	Distance Corrections, m	Façade Effect and Tonality, dB(A)	Screening Effect, dB(A)	Outside line of Sight, dB(A)	Acoustic Louvers, dB(A)	Screening Effect/ Line of Sight/ Acoustic Louvers, dB(A)	Predicted Noise Level, dB(A)	SPL,dB(A)
Pumping Station A	Three Flood Pumps	110	3	115	312	-58	6	-30 [a]			-30	33	
	Ventilation Fans	90	5	97	301	-58	6		-10	-10 [b]	-20	25	34
Pumping Station B	Three Flood Pumps	110	3	115	337	-59	6	-30 [a]			-30	32	
	Ventilation Fans	90	5	97	319	-58	6			-10 [b]	-10	35	37
												Total SPL =	38

Notes:
(a) The PME would be fully enclosed within the plant room which is no any openings (the door should be closed during operation of the PME) and its building materials are 150mm reinforced concrete and 225mm brick walls, at least 30 dB(A) of noise attenuation is assumed in the assessment.
(b) Acoustic Louver is proposed for the ventilation fan, and the louvers are installed at the side walls facing towards the Yuen Long Nullah (400171/B&V/LAY/101 & 201)
(c) Information provided by design engineer and will be specified in the construction contract.